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2021-22 Undergraduate Calendar

Carleton University Calendar
Welcome to the online version of Carleton University's Graduate and Undergraduate Calendar. Every effort has been made to ensure the accuracy of this Calendar. From time to time, errata and post-publication updates approved by Senate after initial publication of the Calendar are posted. Notifications of additions and corrections will be posted at the Updates page. The Web edition of the Carleton University Undergraduate Calendar is the University's official statement. This Calendar is published several months in advance of the beginning of the academic year. The university reserves the right without liability or penalty, and without notice, to make changes in the services and programs that it offers, including alteration of the fee schedules, and cancellation of particular courses. Read full disclaimer here.
This schedule contains the dates prescribed by the University Senate for academic activities. Dates relating to fee payment, cancellation of course selections, late charges, and other fees or charges will be published in the Important Dates and Deadlines section of the Registration Website (carleton.ca/registration).

The academic year is divided into three terms:

- **Summer term**: May - August
- **Fall term**: September - December
- **Winter term**: January - April

Courses are offered in the following patterns:

- **Early summer**: May - June
- **Late summer**: July - August
- **Full summer**: May - August

- **Fall term**: September - December
- **Winter term**: January - April
- **Fall/winter**: September - April

Courses are offered during the day and in the evening.
### The Academic Year (Graduate and Undergraduate Studies)

This schedule contains the dates prescribed by the University Senate for academic activities. Dates relating to fee payment, cancellation of course selections, late charges, and other fees or charges will be published in the Important Dates and Deadlines section of the Registration Website (carleton.ca/registration).

The academic year is divided into three terms:

- **Summer term**: May - August
- **Fall term**: September - December
- **Winter term**: January - April

Courses are offered in the following patterns:

- **Early summer**: May - June
- **Late summer**: July - August
- **Full summer**: May - August
- **Fall term**: September - December
- **Winter term**: January - April
- **Fall/winter**: September - April

Courses are offered during the day and in the evening.

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUMMER TERM 2021</strong></td>
<td></td>
</tr>
<tr>
<td>March 1, 2021</td>
<td>Last day for receipt of applications for admission to an undergraduate degree program for the summer term.</td>
</tr>
<tr>
<td>April 29, 2021</td>
<td>Deadline for course outlines to be made available to students registered in early- and full-summer courses.</td>
</tr>
<tr>
<td>May 1, 2021</td>
<td>Last day for receipt of applications for undergraduate degree program transfers for the summer term.</td>
</tr>
<tr>
<td>May 6, 2021</td>
<td>Early summer and full summer classes begin.</td>
</tr>
<tr>
<td>May 13, 2021</td>
<td>Last day for registration and course changes (including auditing) for early summer courses.</td>
</tr>
<tr>
<td>May 14, 2021</td>
<td>Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring 2021 and must register for the summer 2021 term.</td>
</tr>
</tbody>
</table>

- **May 20, 2021** Last day for registration and course changes (including auditing) for full summer courses.
- **May 21, 2021** Last day to withdraw from early summer and full summer courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.
- **May 14-26, 2021** Fall/winter and winter term deferred final examinations will be held.
- **May 24, 2021** Statutory holiday. University closed.
- **May 28, 2021** Last day to request Formal Examination Accommodation Forms for June examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.
- **June 11, 2021** Last day for summative tests or examinations - or for formative and/ or practical tests or examinations totaling more than 15% of the final grade - for early summer courses before the official examination period (see Examination Regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
- **June 18, 2021** Last day of early summer classes. (NOTE: full summer classes resume July 2.)
- **June 21-25, 2021** Classes will follow a Monday schedule.
- **May 20-26, 2021** Last day for academic withdrawal from early summer courses.
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 19-20, 2021</td>
<td>Last day for handing in term assignments, subject to any earlier course deadline.</td>
</tr>
<tr>
<td>June 21-27, 2021</td>
<td>No classes or examinations take place.</td>
</tr>
<tr>
<td>June 25, 2021</td>
<td>Final examinations in early summer courses and mid-term examinations in full summer courses may be held. Examinations are normally held all seven days of the week.</td>
</tr>
<tr>
<td>June 27, 2021</td>
<td>Deadline for course outlines to be made available to students registered in late-summer courses.</td>
</tr>
<tr>
<td>July 2, 2021</td>
<td>Last day for registration and course changes (including auditing) for late summer courses.</td>
</tr>
<tr>
<td>July 9, 2021</td>
<td>Last day for late summer courses.</td>
</tr>
<tr>
<td>July 16-18, 2021</td>
<td>Early summer term deferred final examinations to be held.</td>
</tr>
<tr>
<td>July 23, 2021</td>
<td>Last day to withdraw from late summer courses with a full fee adjustment.</td>
</tr>
<tr>
<td>July 30, 2021</td>
<td>Last day for graduate students to submit their supervisor-approved thesis in examinable form to the department.</td>
</tr>
<tr>
<td>August 9, 2021</td>
<td>Last day for summative tests or examinations - or for formative and/or practical tests or examinations totaling more than 15% of the final grade - before the official examination period (see Examination Regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar).</td>
</tr>
<tr>
<td>August 16, 2021</td>
<td>Last day of late summer and full summer classes.</td>
</tr>
<tr>
<td>August 17-18, 2021</td>
<td>Last day for academic withdrawal from late summer and full summer courses.</td>
</tr>
<tr>
<td>August 19-25, 2021</td>
<td>Final examinations in late summer and full summer courses may be held. Examinations are normally held all seven days of the week.</td>
</tr>
<tr>
<td>August 25, 2021</td>
<td>All take-home examinations are due on this day, with the exception of those conforming to the Examinations regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar.</td>
</tr>
<tr>
<td>September 17-19, 2021</td>
<td>Full and late summer term deferred final examinations to be held.</td>
</tr>
<tr>
<td>Date</td>
<td>Activity</td>
</tr>
<tr>
<td>FALL TERM 2021</td>
<td>Last day for receipt of applications from potential fall (November) graduates.</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>September 6, 2021</td>
<td>Deadline for course outlines to be made available to students registered in fall and fall/winter term courses.</td>
</tr>
<tr>
<td>September 7, 2021</td>
<td>Academic orientation (undergraduate and graduate students).</td>
</tr>
<tr>
<td>September 8, 2021</td>
<td>Orientation for new Teaching Assistants.</td>
</tr>
<tr>
<td>September 8, 2021</td>
<td>All new students are expected to be on campus. Class and laboratory preparations, departmental introductions for students and other academic preparation activities will be held.</td>
</tr>
<tr>
<td>September 8, 2021</td>
<td>Fall term begins. Fall and fall/winter classes begin.</td>
</tr>
<tr>
<td>September 17-19, 2021</td>
<td>Full and late summer term deferred final examinations to be held.</td>
</tr>
<tr>
<td>September 22, 2021</td>
<td>Last day of registration for fall term and fall/winter courses.</td>
</tr>
<tr>
<td>September 22, 2021</td>
<td>Last day to change courses or sections (including auditing) for fall term and fall/winter courses.</td>
</tr>
<tr>
<td>September 30, 2021</td>
<td>Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in fall 2021 and must register for the fall 2021 term.</td>
</tr>
<tr>
<td>October 8, 2021</td>
<td>Last day to withdraw from fall term and fall/winter courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.</td>
</tr>
<tr>
<td>October 15, 2021</td>
<td>Last day for receipt of applications for admission to an undergraduate degree program for the winter term from applicants whose documents originate from outside Canada or the United States.</td>
</tr>
<tr>
<td>October 25-29, 2021</td>
<td>Fall break, no classes.</td>
</tr>
<tr>
<td>November 12, 2021</td>
<td>Last day to request Formal Examination Accommodation Forms for December examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.</td>
</tr>
<tr>
<td>November 15, 2021</td>
<td>Last day for receipt of applications for admission to an undergraduate degree program for the winter term.</td>
</tr>
<tr>
<td>November 15, 2021</td>
<td>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade before the official examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar).</td>
</tr>
<tr>
<td>November 26, 2021</td>
<td>Last day to request Formal Examination Accommodation Forms for December examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.</td>
</tr>
<tr>
<td>November 26, 2021</td>
<td>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade before the official examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar).</td>
</tr>
<tr>
<td>December 1, 2021</td>
<td>Last day for receipt of applications from potential winter (February) graduates.</td>
</tr>
<tr>
<td>December 1, 2021</td>
<td>Last day for receipt of applications from potential winter (February) graduates.</td>
</tr>
<tr>
<td>December 1, 2021</td>
<td>Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.</td>
</tr>
<tr>
<td>December 10, 2021</td>
<td>Fall term ends.</td>
</tr>
<tr>
<td>December 10, 2021</td>
<td>Fall term ends.</td>
</tr>
<tr>
<td>December 10, 2021</td>
<td>Last day of fall term classes.</td>
</tr>
<tr>
<td>December 10, 2021</td>
<td>Last day of fall term classes.</td>
</tr>
<tr>
<td>December 10, 2021</td>
<td>Classes follow a Monday schedule.</td>
</tr>
<tr>
<td>December 10, 2021</td>
<td>Last day for take home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar.</td>
</tr>
<tr>
<td>Date</td>
<td>Activity</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>December 11-23, 2021</strong></td>
<td>Last day for academic withdrawal from fall term courses.</td>
</tr>
<tr>
<td></td>
<td>Last day for handing in term work and the last day that can be specified by a course instructor as a due date for term work for fall term courses.</td>
</tr>
<tr>
<td><strong>December 23, 2021</strong></td>
<td>Last day for receipt of applications for undergraduate degree program transfers for winter term.</td>
</tr>
<tr>
<td></td>
<td>Final examinations in fall term courses and mid-term examinations in fall/winter courses may be held.</td>
</tr>
<tr>
<td></td>
<td>Examinations are normally held all seven days of the week.</td>
</tr>
<tr>
<td><strong>December 25, 2021 through January 1, 2022 inclusive</strong></td>
<td>University closed.</td>
</tr>
<tr>
<td><strong>January 3, 2022</strong></td>
<td>Deadline for course outlines to be made available to students registered in winter term courses.</td>
</tr>
<tr>
<td><strong>January 5, 2022</strong></td>
<td>University reopens.</td>
</tr>
<tr>
<td><strong>January 10, 2022</strong></td>
<td>Winter term classes begin.</td>
</tr>
<tr>
<td><strong>January 24, 2022</strong></td>
<td>Last day for registration for winter term courses.</td>
</tr>
<tr>
<td></td>
<td>Last day to change courses or sections (including auditing) for winter term courses.</td>
</tr>
<tr>
<td></td>
<td>Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in winter 2022 and must register for the winter 2022 term.</td>
</tr>
<tr>
<td><strong>January 21-23, 28-30, 2022</strong></td>
<td>Fall term deferred final examinations will be held.</td>
</tr>
<tr>
<td><strong>January 31, 2022</strong></td>
<td>Last day for withdrawal from winter term and winter portion of fall/winter courses with full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.</td>
</tr>
<tr>
<td><strong>February 18, 2022</strong></td>
<td>April examination schedule available online.</td>
</tr>
<tr>
<td><strong>February 21, 2022</strong></td>
<td>Statutory holiday. University closed.</td>
</tr>
<tr>
<td><strong>February 22-25, 2022</strong></td>
<td>Winter Break, no classes.</td>
</tr>
<tr>
<td><strong>March 1, 2022</strong></td>
<td>Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.</td>
</tr>
<tr>
<td><strong>February 18, 2022</strong></td>
<td>April examination schedule available online.</td>
</tr>
<tr>
<td><strong>February 21, 2022</strong></td>
<td>Statutory holiday. University closed.</td>
</tr>
<tr>
<td><strong>February 22-25, 2022</strong></td>
<td>Winter Break, no classes.</td>
</tr>
<tr>
<td><strong>March 1, 2022</strong></td>
<td>Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.</td>
</tr>
<tr>
<td><strong>March 16, 2022</strong></td>
<td>Last day to request Formal Examination Accommodation Forms for April examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfill accommodation requests received after the specified deadlines.</td>
</tr>
<tr>
<td>Date</td>
<td>Activity</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>March 29, 2022</td>
<td>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in winter term or fall/winter courses before the official examination period (see Examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar).</td>
</tr>
<tr>
<td>April 1, 2022</td>
<td>Last day for receipt of applications for admission to an undergraduate program for the fall/winter session, from candidates whose documents originate outside Canada or the United States, except for applications due February 1 or March 1.</td>
</tr>
<tr>
<td>April 12, 2022</td>
<td>Last day for receipt of applications from potential spring (June) graduates.</td>
</tr>
<tr>
<td></td>
<td>Winter term ends.</td>
</tr>
<tr>
<td></td>
<td>Last day for fall/winter and winter term classes.</td>
</tr>
<tr>
<td></td>
<td>Last day for take home examinations to be assigned, with the exception of those conforming to the Examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar.</td>
</tr>
<tr>
<td></td>
<td>Last day for academic withdrawal from fall/winter and winter term courses.</td>
</tr>
<tr>
<td></td>
<td>Last day for handing in term work and the last day that can be specified by a course instructor as a due date for term work for fall/winter and winter term courses.</td>
</tr>
<tr>
<td>April 13, 2022</td>
<td>No classes or examinations take place.</td>
</tr>
<tr>
<td>April 14-28, 2022</td>
<td>Final examinations in winter term and fall/winter courses may be held. Examinations are normally held all seven days of the week.</td>
</tr>
<tr>
<td>April 15, 2022</td>
<td>Statutory holiday. University closed</td>
</tr>
<tr>
<td>April 28, 2022</td>
<td>All take home examinations are due on this day, with the exception of those conforming to the Examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar.</td>
</tr>
<tr>
<td>May 1, 2022</td>
<td>Last day for receipt of applications for undergraduate internal degree transfers to allow for registration for the summer session.</td>
</tr>
<tr>
<td>May 13, 2022</td>
<td>Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring 2022 and must register for the summer 2022 term.</td>
</tr>
<tr>
<td>May 20- June 1, 2022</td>
<td>Fall/winter and winter term deferred final examinations will be held.</td>
</tr>
<tr>
<td>June 1, 2022</td>
<td>Last day for receipt of applications for admission to an undergraduate program for the fall/winter session except for applications due February 1 or March 1 or April 1.</td>
</tr>
<tr>
<td>June 15, 2022</td>
<td>Last day for receipt of applications for undergraduate degree program transfers for the fall term.</td>
</tr>
<tr>
<td>Date</td>
<td>Activity</td>
</tr>
<tr>
<td>SUMMER TERM 2022</td>
<td></td>
</tr>
<tr>
<td>March 1, 2022</td>
<td>Last day for receipt of applications for admission to an undergraduate degree program for the summer term.</td>
</tr>
<tr>
<td>April 28, 2022</td>
<td>Deadline for course outlines to be made available to students registered in early and full summer courses.</td>
</tr>
<tr>
<td>May 1, 2022</td>
<td>Last day for receipt of applications for undergraduate degree program transfers for the summer term.</td>
</tr>
<tr>
<td>May 5, 2022</td>
<td>Early summer and full summer classes begin.</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>May 12, 2022</td>
<td>Last day for registration and course changes (including auditing) for early summer courses.</td>
</tr>
<tr>
<td>May 13, 2022</td>
<td>Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring 2022 and must register for the summer 2022 term.</td>
</tr>
<tr>
<td>May 19, 2022</td>
<td>Last day for registration and course changes (including auditing) for full summer courses.</td>
</tr>
<tr>
<td>May 20, 2022</td>
<td>Last day to withdraw from early summer and full summer courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.</td>
</tr>
<tr>
<td>May 20-June 1, 2022</td>
<td>Fall/winter and winter term deferred final examinations will be held.</td>
</tr>
<tr>
<td>May 27, 2022</td>
<td>Last day to request Formal Examination Accommodation Forms for June examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.</td>
</tr>
<tr>
<td>June 10, 2022</td>
<td>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, for early summer courses before the official examination period (see Examination Regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar).</td>
</tr>
<tr>
<td>June 17, 2022</td>
<td>Last day of early summer classes. (NOTE: full summer classes resume July 4.)</td>
</tr>
<tr>
<td>June 18-19, 2022</td>
<td>No classes or examinations take place.</td>
</tr>
<tr>
<td>June 26, 2022</td>
<td>All take home examinations are due on this day, with the exception of those conforming to the Examination regulations in the Academic Regulations University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar.</td>
</tr>
<tr>
<td>June 27, 2022</td>
<td>Deadline for course outlines to be made available to students registered in late-summer courses.</td>
</tr>
<tr>
<td>July 1, 2022</td>
<td>Statutory holiday. University closed.</td>
</tr>
<tr>
<td>July 4, 2022</td>
<td>Late summer classes begin. Full summer classes resume.</td>
</tr>
<tr>
<td>July 11, 2022</td>
<td>Last day for registration and course changes (including auditing) for late summer courses.</td>
</tr>
<tr>
<td>July 22, 2022</td>
<td>Last day to withdraw from late summer courses with a full fee adjustment.</td>
</tr>
<tr>
<td>July 22-24, 2022</td>
<td>Early summer term deferred final examinations to be held.</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>July 25, 2022</td>
<td>Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.</td>
</tr>
<tr>
<td>July 29, 2022</td>
<td>Last day to request Formal Examination Accommodation Forms for August examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.</td>
</tr>
<tr>
<td>August 1, 2022</td>
<td>Statutory holiday. University closed.</td>
</tr>
<tr>
<td>August 9, 2022</td>
<td>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, before the official examination period (see Examination Regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar).</td>
</tr>
<tr>
<td>August 16, 2022</td>
<td>Last day of late summer and full summer classes.</td>
</tr>
<tr>
<td>August 17-18, 2022</td>
<td>No classes or examinations take place.</td>
</tr>
<tr>
<td>August 19-25, 2022</td>
<td>Final examinations in late summer and full summer courses may be held. Examinations are normally held all seven days of the week.</td>
</tr>
<tr>
<td>August 25, 2022</td>
<td>All take home examinations are due on this day, with the exception of those conforming to the Examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar.</td>
</tr>
<tr>
<td>September 23-25, 2022</td>
<td>Full and late summer term deferred final examinations to be held.</td>
</tr>
</tbody>
</table>

**Regulations**

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**Effective Fall 2019:** The Undergraduate Academic Regulations of the University have been renumbered to better represent regulation categories. Click here for a comprehensive list of links to the new regulations.

For questions related to this reorganization, please contact courseleaf@carleton.ca.

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   1.2 The Comprehensive Regulations

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Student Responsibility
1.1 STUDENT RESPONSIBILITY
It is the student's responsibility to remain informed of all University rules and regulations as well as those pertaining to their program. Ignorance of the rules and regulations will not be accepted as grounds for waiving them.

Acceptance by the University of a registration does not exempt the student from any academic regulation or requirement.

The Senate of Carleton University may at any time require a student to withdraw from the University if his or her conduct, attendance, work, or progress is deemed unsatisfactory.

Further information:
• Carleton University disclaimer statement
• Academic Integrity Policy

1.2 The Comprehensive Regulations
1.2.1 The Senate of Carleton University may at any time require a student to withdraw from the University if the student's conduct, attendance, work or progress is deemed unsatisfactory.
1.2.2 Registration in courses does not exempt the student from any academic or University regulation.
Registration, Evaluation and Student Records

2.1 Registration

2.1.1 Permission to Register

To be eligible to register for an academic term, students must meet the following requirements:

1. Students new to Carleton must be formally admitted to a program OR Special student studies;
2. Returning students must be academically eligible to continue in their programs;
3. There must be no outstanding fees on the student account with the University;
4. The student must not have been suspended from the University for disciplinary reasons;
5. International students must be enrolled in or have received permission for exemption from the University Health Insurance Plan (UHIP).

Registration information for the fall and winter terms is emailed to newly admitted and returning students by May 1 (carleton.carleton.ca/registration). Information regarding summer term is available from the Registrar’s Office by February 1 (carleton.ca/summer).

2.1.2 Full- and Part-time Study

When responding to a legitimate request from an external agency that has not supplied its own definition, the following definitions are used:

1. A full-time undergraduate student is one who is registered in at least 1.5 credits per academic term.
2. A full course load is the normal maximum course load as defined by the student's program and is evaluated term by term.

2.1.3 Course Selection and Registration

Course selection must be completed according to the requirements of the faculty or school and major department(s) in which the student is registering. Students should seek the advice of their program advisor, academic unit, or the Academic Advising Centre.

Students planning to undertake professional training beyond their undergraduate studies should ensure that their undergraduate programs meet the requirements for admission to, or registration in, their intended postgraduate program.

Students are not permitted to register in course timetable conflicts.

All course selection and course change activity within the published deadlines (adds, drops, change of section) is completed using Carleton Central at central.carleton.ca. These activities are limited by deadlines set out in the Academic Year section of this Calendar. It is the student’s responsibility to understand and meet these deadlines.

2.1.4 Course Load

In most undergraduate programs, the normal course load is the equivalent of 2.5 credits in each of the fall and winter terms and the equivalent of 1.0 credit in each of the early and late periods of the summer term. In some programs, higher course loads may apply. Full-session courses are considered to have their credit weight evenly distributed over the terms. For example, a two-term 1.0 credit course is considered to contribute 0.5 credit to course load in each term.

A student is registered in a course overload if the student is registered in more credit equivalents per term than the normal load for their program. Students with an Overall CGPA of 7.00 who have completed a minimum of 4.0 credits at Carleton may choose to register in a course overload, to a maximum of 0.5 credit above the normal course load for their program in each of the fall and winter terms and in either the early or late period of the summer term. Students requiring permission for course overloads should contact the Registrar’s Office.

2.1.5 Payment of Fees

A student is responsible for all tuition and other fees resulting from registration in any and all courses. The student remains responsible for paying this debt whether or not the student attends or participates in the class or classes unless they withdraw within the published deadline set out in the Academic Year section of this calendar. Student Accounts may be viewed through Carleton Central and are the administrative responsibility of the Business Office.

For fee payment policies and deadlines, please visit the Student Accounts website.

2.1.6 Withdrawal

Students are responsible for formally withdrawing from a course or courses within the published deadlines. Ceasing to attend or participate in classes, or informing an instructor of intent to withdraw, does not constitute withdrawal. Withdrawal is completed by using Carleton Central at central.carleton.ca. The official date of withdrawal from the course(s) is the date on which the student successfully completes the necessary withdrawal action.

Students must withdraw from a course or courses on or before the appropriate last date for withdrawal as indicated in the Academic Year section of this Calendar. Withdrawal is not permitted after the published deadlines (noted in the Academic Year section of the Calendar each term). Students who withdraw after the full fee adjustment date in each term and by the academic withdrawal deadline will receive the grading notation of WDN on their transcript for the course(s) from which they withdraw. Please consult section 5.4 Grading System of this Calendar for more information.

Withdrawal activity may affect academic standing as prescribed by regulations governing the program, as well as status with the University (full-time or part-time). Consult the Registrar’s Office for information and guidance. A student who withdraws from a course retains no academic credit for any part of that course. Withdrawing from a course may have serious consequences for scholarships, OSAP and other student
financial support programs. Students are advised to consult the Awards Office for guidance.

Fee adjustments for students who are withdrawing from a course, or courses, will be calculated as of the date of successful completion of withdrawal via Carleton Central.

2.1.7 Deregistration
After due process, the University may deregister a student under the following circumstances:

1. if it is determined that the student does not meet all of the requirements for permission to register as set out in 2.1.1 above;
2. if it is determined that an applicant for admission has, in the process, provided false or incomplete information;
3. if the student does not have - or, when requested, present proof of - the course prerequisite(s);
4. if the student is registered in a course timetable conflict;
5. if it is determined that the student has not met the additional admission requirements, including satisfying the English language proficiency requirements of the University;
6. if it is determined that the student has not met the requirements of a conditional offer of admission;
7. if the student is not properly registered in the two terms of a full-session course.

2.1.8 Auditing Student
An auditing student is defined as a student who attends a course for interest and not for credit. Auditing students may typically only enrol in lecture or seminar courses. Formal registration is required but the student does not receive academic credit for the course. Permission to audit a course is required from the instructor and students may be required to satisfy all registration requirements. Permission will also be subject to capacity, and generally will not be provided until after courses commence. The student may attend classes but will not receive formal evaluation and/or grading on any submitted material. The student should discuss with the instructor the conditions and expectations under which an auditing student may be permitted to participate, including attendance and participation in class discussion and group work, and the submission of any material.

A request to change course registration from audit to credit status, or credit to audit, must be received by the Registrar’s Office no later than the last day to add a course (of that duration) in the term. Students must satisfy all registration requirements to register in the course for academic credit. Students may not retroactively appeal to change the registration status from audit to credit, but may subsequently re-register in the course for credit. Graduate students are limited to a maximum of 1.0 course-weight audit registration per program.

2.1.9 Credit for Closely-related Courses
The University recognizes three distinct close relationships between courses.

Courses *preclude* credit for each other if they contain sufficient content in common that credit may not be earned for more than one of the courses. Should two or more courses be taken that preclude each other, only the most recent attempt will be available for program credit; the remaining earlier attempt(s) will be forfeited. Courses that preclude each other are not necessarily considered equivalent and may or may not be interchangeable in fulfilling degree requirements.

Courses are *equivalent* if the appropriate academic unit(s) consider the content of the courses to be sufficiently similar that either course may be used to fulfill a program requirement. Courses designated as equivalent to each other cannot both count for credit: credit is retained only for the most recent attempt. Examples of equivalent courses arise frequently in advanced standing and when new curriculum is introduced.

Two courses are *cross-listed* if they are the same course listed under two different subject codes, usually by two different academic units.

In all cases, credit will be given for only one of the courses in any equivalent, precluded or cross-listed pair. Students planning to enrol in such courses are advised to consult with their academic advisor in advance of registration to ensure that the course number under which they will be enrolling is appropriate to their program. Changes to resolve incorrect course selection due to equivalence, preclusion or cross-listing may not be made after the last day for course changes in the term (see the Academic Year section of this Calendar).

2.1.10 Two-term Courses
Certain courses may be taught over two academic terms. Students are registered in the same section of the course, and any linked components, in both terms. Changes cannot be made after the last day for course changes. These courses will be clearly identified in the registration information. The most common example is a 1.0-credit course taught over the fall and winter terms.

In place of a grade, the first term course will be assigned the notation CTN. The second term course will be assigned the final grade for the entire course. Credit will be given only for the complete course taught over two consecutive terms in corresponding sections. No partial credit will be given for part of the course.

2.1.11 Challenge for Credit

*Challenge for credit* is a Carleton University policy that enables students to gain undergraduate academic credit for their own learning and experience through work and related professional experience. It is not intended to overlap in scope with transfer of credits or admission with advanced standing.

This policy gives the student the opportunity to be examined on, and receive credit for, a recognized Carleton course without meeting the normal requirements of registration, attendance, and instruction. Students wishing to challenge for credit should inquire at the Registrar’s Office and provide documentation to support the challenge. If the academic department is satisfied that the
student has adequate experience and learning related to the course in question, it sets an appropriate examination. If the student is successful in the examination, the course is credited to his or her academic record.

Not all courses offered at the university are open to challenge for credit. Students must register in the course with the status of challenge and fees apply. Students seeking more information should contact the Registrar’s Office.

Challenge for credit is available only to students formally admitted to and registered in a program leading to a degree, diploma or certificate. Special students are not eligible to apply for challenge for credit. Students may challenge for credit in a course only if they are in good standing academically. A student may not challenge for credit more than once in the same course. Students who challenge for credit are not permitted access to the course materials available to registered students.

A successful challenge for credit is denoted on the student’s record by the notation CH. An unsuccessful challenge attempt is denoted by UCH. These notations have no impact on the CGPA calculation. Credits obtained by challenge may not be used to satisfy the residency requirement for the student’s degree program or major discipline (see Section 2.2.2 or 3.4.1).

2.2 Credit Requirements and Limitations

2.2.1 Maximum Credits Below the 2000 Level

A student may count a maximum of 7.0 credits below the 2000 level toward fulfilment of graduation requirements.

Credits in excess of this limit will be set aside as Extra to the Degree (ETD), No Credit for the Degree (NCD) or Forfeit. This allows students to increase their CGPA by pushing out low grades below the 2000 level through replacement by higher grades at the same level.

2.2.2/3.4.1 Minimum Number of Residency Credits

To be eligible for graduation with a Carleton degree, certificate or diploma, each student must present a certain number of credits earned at Carleton University which have not been presented to fulfil any degree that has been previously awarded, including a degree or degrees at Carleton University. These are referred to as residency credits. Courses taken under the University of Ottawa Exchange Agreement do not count as residency credits.

All degree students must present a minimum of 5.0 residency credits at graduation, with the following exceptions:

The minimum number of residency credits for students in the Dual Degree, B.Eng., B.I.D, B.I.T. and B.A.S. Design program is half of the total number of credits required for the program. The residency requirement for B.A.S. students not in Design is the standard minimum of 5.0 residency credits at graduation.

To obtain a minor, a student must present at least 2.0 residency credits counting toward that minor.

To obtain an undergraduate certificate from Carleton University, students must present residency credits including a minimum of 4.0 credits taken at Carleton. The residency for certificates taken concurrently with a Carleton degree may be satisfied with credits used also to satisfy the degree residency requirement.

To obtain a post-baccalaureate diploma from Carleton University, students must present residency credits including a minimum of 3.0 credits taken at Carleton.

2.2.3/3.4.2 Advanced Credits

The credits presented at graduation that are credits completed at Carleton after admission, credits completed at Carleton within the last ten years for which advanced standing has been granted and credits completed as part of the University of Ottawa Exchange or another formal domestic or international Exchange, must include:

1. For Honours degrees, at least 3.0 credits in the major and at the 3000 level or above;
2. For Combined Honours degrees, at least 1.5 credits in each major and at the 3000 level or above;
3. For Major degrees, at least 3.0 credits in the major and at the 2000 level or above;
4. For 15.0 credit degrees, at least 3.0 credits at the 2000-level or above and, if applicable, in the major.

2.2.4 Transfer of Credit Prior to Admission

When a student is considered for admission, credit may be granted for individual courses successfully completed at other recognized post-secondary institutions, if:

1. the individual courses are relevant to a student’s proposed program; and,
2. the appropriate academic department recommends such action.

Each application is evaluated on its own merits.

2.2.5 Transfer of Credit Subsequent to Admission

Letter of Permission

Students who have been formally admitted to a degree, certificate or diploma program may apply to take courses at other recognized post-secondary institutions on Letters of Permission and have the credits transferred to their Carleton programs. The following conditions must be met:

1. the student must have successfully completed at least 3.0 credits or have met the required program residency requirements at Carleton University;
2. the student must present the minimum CGPA requirements for graduation in their credential;
3. the student must obtain formal approval from the Registrar’s Office prior to commencing each course.

Grades for successfully completed courses taken on Letters of Permission are transferred back to Carleton University as SAT (Satisfactory) and are not included in CGPA calculations. A course taken on Letter of Permission and failed is recorded with the grade UNS (Unsatisfactory). Failures are not included in CGPA calculations. A higher level of performance may be
required in a course that would have contributed to any programmatic CGPA had the grade been transferred.

**University of Ottawa Exchange Agreement**

Degree Students may register to take courses at the University of Ottawa to be credited to their Carleton University degree. The following regulations apply:

1. Students must be registered in a degree program and must be in **Good Standing**. In the case of first-year studies, a maximum of two half-credit courses may be taken at the University of Ottawa that year.
2. Only courses to be credited as part of the current degree requirements at Carleton may be taken under the terms of the exchange.
3. The cumulative total number of credits taken at Carleton and counting towards the degree must be greater than the total number of credits taken and/or proposed to be taken at the University of Ottawa.
4. Courses taken on the Exchange Agreement shall not count as courses taken at Carleton under residency requirements.
5. Grades for courses taken on the Exchange Agreement will be reported on the Carleton transcript and will be included in the calculation of the CGPAs.
6. Approval by Carleton University does not guarantee registration at the University of Ottawa.

Students withdrawing from University of Ottawa exchange agreement courses must notify the University of Ottawa by the appropriate deadlines, or a failing grade of F may be recorded.

**International Exchange Agreements**

Undergraduate students may be eligible to take advantage of other exchange agreements with universities throughout the world. Unless otherwise specified in a specific exchange agreement or Senate-approved program regulation, the minimum academic requirement is second-year standing or higher, and a minimum overall CGPA of 7.0. For details on these exchanges, students should consult the International Student Services Office at least one year in advance of the proposed exchange. Grades for successfully completed courses taken on International Exchange will not be transferred. Successfully completed courses will be recorded as SAT (Satisfactory) and unsuccessfully completed courses will be recorded as UNS (Unsatisfactory). A higher level of performance may be required in a course that would have contributed to any programmatic CGPA had the grade been transferred. Such a course with a passing grade below the minimum required will not count towards the degree.

**Dual Degree Agreement**

Undergraduate students who have been formally admitted to a degree may be eligible to complete concurrent degrees from Carleton University and a partner institution under the Dual Degree Policy and program-specific articulation agreement provided the following regulations are met:

1. the student must be registered in a degree program and must be in **Good Standing**;
2. only courses to be credited as part of the current degree requirements at Carleton may be taken under the terms of the agreement;
3. courses taken under this agreement shall count as courses taken at Carleton under residency and advanced residency requirements (see 2.2.2/3.4.1 Minimum Number of Residency Credits and 2.2.3/3.4.2 Advanced Credits for more information);
4. grades for courses taken under this agreement will be reported on the Carleton transcript and will be included in the calculation of the CGPAs;
5. for details on the application process, students should consult with the appropriate Academic Department and the Registrar’s Office.

**2.2.6 Credit for ESL Courses**

A student in a degree program may receive credit for previously completed English as a Second Language courses from the sequence ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905, with the following restrictions:

1. for students in degrees offered by the Faculty of Arts and Social Sciences or the Faculty of Public Affairs, up to 2.0 credits will be counted toward the degree;
2. for students in degrees offered by the Sprott School of Business, credit will be allowed only for ESLA 1900 (or ESLA 1905);
3. for students in degrees offered by the Faculty of Science, credit will be allowed only for ESLA 1900 (or ESLA 1905);
4. for students in the Bachelor of Engineering degree, no credits from this sequence will be counted toward the degree;
5. for students in the Bachelor of Industrial Design degree or the Bachelor of Architectural Studies degree, credit will be allowed only for ESLA 1900 (or ESLA 1905).

**2.3 Student Records**

**2.3.1 Electronic Communication**

The University provides each student with an email address and uses this as an official channel of communication with the student. A message sent to a student's University-provided email address constitutes an official communication with the student. Students are responsible for monitoring their University email address on a regular basis for as long as they are active in the academic affairs of the University. Requests from students regarding academic or administrative issues must be sent from the student's University-provided email address.

**2.3.2 Student Record Information: Names and Addresses**

**Names**

As the University is committed to the integrity of its student records, students are required to provide their complete, legal name on applications for admission or on personal data forms required for registration. Any requests to change a name, by means of alteration, deletion, substitution or addition, must be accompanied by appropriate supporting documentation. Upon making
programs at Carleton University are also accredited reviewed cyclically under the mandate of the Ontario Assessment.

2.3.5 Use of Student Work in Program

All academic programs at Carleton University are reviewed cyclically under the mandate of the Ontario Universities Council on Quality Assurance. Several programs at Carleton University are also accredited by professional bodies and must undergo review for continuing accreditation.

Student records and student work such as portfolios, exams, assignments, and theses may be used in the review and evaluation of academic programs. Appropriate steps will be taken to ensure that information and material used in the evaluation of a program is kept confidential and that the processes comply with applicable privacy regulations. These reviews may involve bodies external to the University, for example, in complying with reviews required by the government or professional accreditation bodies.

Academic Regulations for Degree Students

3.1 Program Regulations

3.1.1 Academic Nomenclature

For a list of common definitions and terms of the University, please consult the Glossary section of this Calendar.

3.1.2 Regulations Governing a Student's Program

Curriculum and regulations are subject to change as the University updates and improves its undergraduate programs. These changes may include alterations to course offerings, program requirements, and academic regulations. In establishing transition policies that determine how these changes will impact in-program students, the University is guided by the intent that students retain the same or improved overall opportunities to succeed.

The following policies are in effect:

3.1.2.1 When a degree student is admitted to the University, the regulations and program requirements for their credential are those in effect at the time of admission. If a student changes program elements in a calendar year subsequent to the term of admission, their program will be governed by the calendar requirements in effect when the change is approved. The general academic regulations governing the student, however, will continue to be those in effect at the time of admission to the University.

3.1.2.2 If, in subsequent years, the student is readmitted to the same or another program, the academic regulations of the University and the program requirements in effect at the time of readmission will govern the student.

3.1.2.3 As curricular or regulatory changes are introduced in subsequent years, in-program students may choose to complete their studies under the new academic regulations of the University and/or new program requirements. Students who wish to change their calendar year to that which is currently in effect should contact the Registrar's Office.

3.1.2.4 Notwithstanding 3.1.2.1, when circumstances prevent continued application of regulations, program requirements or courses of a previous Calendar, appropriate replacement policies guiding students in
adapting to the new situation will be developed and communicated to students.

3.1.2.5 The online version of the Calendar is the official version. Changes approved after the publication date will be posted on the Calendar website.

3.1.3 Absence from the University
Normally, a student is considered to be present at the University in a term in which they have remained registered in a course until after the last day for withdrawal with a full fee adjustment. A student who is not present at the University is considered to be absent from the University.

Degree students who have not been present at the University for more than nine consecutive terms must apply for readmission through Admission Services.

Students who have completed the requirements for the degree and program in which they are registered will be automatically considered for graduation after three consecutive terms of absence from the University.

3.1.4 Voluntary Withdrawal from a Program
Undergraduate students who wish to voluntarily withdraw from their program, without academic penalty, may do so by contacting the Registrar’s Office prior to the deadline to withdraw from courses (see Academic Year). The notation “Voluntary Withdrawal from Program” will appear on the official transcript.

3.1.5 Student Categories
Undergraduate students are grouped in four broad categories: Degree Students, Certificate Students, Special Students, and Non-credit Students.

Within the Degree Students category, a further subdivision is defined as Degree Students Admitted with Additional Requirements. This subdivision includes:

- students admitted with conditions;
- students readmitted with conditions;
- credit ESL students.

Students admitted with Additional Requirements who fail to meet these conditions may not continue at the University for a period of one year and must then apply for re-admission if they wish to return.

The category of Certificate Students includes all students registered in the certificate and diploma programs identified in section 7 Academic Regulations for Certificate Students of this Calendar. Those registered in other non-credit professional or development certificates offered by the University are not included. A student may be simultaneously both a Degree Student and a Certificate Student.

3.1.6 Types of Programs
The undergraduate programs of the University are divided into the following categories:

Honours Programs
Honours programs require a minimum of 20.0 credits, and demand a higher academic standard than non-honours programs.

Non-Honours Programs
Non-honours programs require 15.0 or 20.0 credits. Major programs require 20.0 credits.

Engineering and Design Programs
Accredited programs offered by the Faculty of Engineering and Design are in Engineering, in Industrial Design, and in Architecture. These programs require at least 20.0 credits and assume a credit load of at least 2.5 credits per term of study. Some programs within the Faculty of Engineering and Design have time limits for completion.

All of the above programs may include additional elements.

See also Section 2.1.4 Credit Load.

3.1.7 Program Structure

Program Elements
The courses that make up a program are separated into certain standard categories that give the program its structure, allow effective assessment of the student's progress and permit the inclusion of additional notations on the transcript and diploma.

Major
In most programs certain course credits are identified as constituting the Major. The Major specifies the required course credits in one or more defined disciplines, themes, or fields that are the principal focus of a student's program. The Academic Performance Evaluation described in Section 3.2 of this Calendar makes use of this distinction by calculating a Major average as well as an Overall average. A Combined Honours program may be structured with two Majors, one in each contributing discipline or, in some cases, as a single Major. A multidisciplinary program is structured as a single Major drawing together courses from several disciplines.

Note that the use of the term Major as a program element, above, is distinct from the degree program called Major (e.g. B.Sc.Major).

Core
Some programs specify a limited set of credits that constitute a Core. These are courses of special importance to the program and are subject to specific CGPA requirements.

Concentration or Specialization
A Concentration or Specialization is a defined set of courses which provides a student with specific expertise, knowledge and/or practice and so further distinguishes the program in a recognizable way. The credits in the concentration or specialization may or may not be part of the Major. The minimum number of credits for a concentration or specialization at the undergraduate level is 3.5 credits.
Stream
A Stream is a pattern of courses within the program that guides the student's studies and is distinctive from other patterns.

Additions to a Program

Option
An Option is an addition to a program, the pursuit of which does not affect eligibility for the degree without the Option. Registration in the Option does not change the degree requirements. An example is the Co-operative Education Option.

Other additions to a program that do interact with program requirements include: Mention : français (see the Academic Regulations for the Bachelor of Arts), concurrent certificates and concurrent diplomas.

Minor
A Minor is a defined set of courses in a discipline or field that either introduces or extends knowledge of that discipline or field. A Minor may have its own admission requirements. Minors are only available to students already registered as Carleton degree students. Each Minor requires at least 4.0 and at most 5.0 credits. In some circumstances, credits in excess of those required for the main degree may be required to complete the Minor.

3.1.8 University Year Standing
Students in degree programs are given a Year Standing according to the number of credits completed with passing grades and counting towards the degree. The categories are as follows:

First Year:
Fewer than 4.0 credits completed successfully and counting towards the degree.

Second Year:
4.0 through 8.5 credits completed successfully and counting towards the degree.

Third Year:
9.0 through 13.5 credits completed successfully and counting towards the degree.

Fourth Year:
14.0 or more credits completed successfully and counting towards the degree and in a program requiring more than 15.0 credits.

Programs in the Faculty of Engineering and Design identify specific courses that must be completed for a particular year status in that program, which does not necessarily conform to the above formula. Refer to the Engineering and Design section of this Calendar for details.

Year standing assessment occurs regularly and as final grades are received.

3.1.9 Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

3.1.10 Changes of Degree and Program

Application through Registrar's Office
Application is made through Carleton Central (Change of Program Element application) for change of program applications in the following cases:

- students who wish to change to a different program within the same degree;
- students who wish to add, drop or change a Concentration, Specialization or Minor;

Not all program combinations are possible. Please consult with specific units for the options available.

Application through Co-op and Career Services
Application is made through the Co-op Office for admission to and withdrawal from the Co-op Option.

Application through Admissions Services
The following situations require students to reapply for admission through Admissions Services:

- currently registered students who wish, or who are required, to change their degree;
- students who have been suspended or debarred and wish to return to their original program after the required absence from studies at Carleton University (see Section 3.2.3 of the Academic Regulations of the University);
- students who, after completing an undergraduate degree, wish to complete an additional undergraduate degree or certificate;
- students who have left the university and wish to return to a different degree;
- students who have attended another post-secondary institution (except on a letter of permission or exchange program), and wish to transfer obtained credits to their Carleton credential;
- Special Students who wish to be formally admitted to Carleton University (see Section 15 of the General Admissions Requirements and Procedures); and
- students who have been away from the university for nine or more consecutive terms.

3.1.11 Course Categories and Courses Set Aside

3.1.11.1 Course Categories
The requirements for some programs may include specific named categories of courses. These categories are defined either in the main regulations section of the calendar or within the program description. Students
should refer to the regulations and course categories for their program for details.

3.1.11.2 Courses Set Aside
Three categories of courses that do not contribute to the fulfilment of graduation requirements may appear on a student's degree audit report:

**Extra to the Degree (ETD)**
Passed credits that could have counted towards the degree but are in excess of the credits required for graduation are *Extra to Degree*. These credits may be considered for advanced standing in a subsequent degree. This category includes, for example, passed credits at the 1000 level in excess of the 7.0-credit limit.

**No Credit for Degree (NCD)**
Passed credits that are ineligible for credit in the student's program are *No Credit for Degree*. These credits may be considered for advanced standing in a subsequent degree. This category includes, for example, courses specifically prohibited from credit in a particular degree.

**Forfeit**
Courses that cannot be used for credit in this or any subsequent program. This category includes:
1. repeated courses;
2. courses considered equivalent to courses taken later in time;
3. courses precluded for credit by courses taken later in time;
4. courses placed in this category by committee decision.

3.1.12 Maximum Number of Program Elements
In addition to the student's Major(s), the maximum allowed combined number of Minors, Concentrations and Specializations for any student is two. Note that this restriction does not apply to the Co-op Option, Mention : Français or Streams.

3.1.13 Combined Honours Programs
In some cases, combined honours programs are defined with a single unified major which incorporates the credits from both disciplines. In other cases, requirements are established separately by each discipline and combined according to the registration of the student in a particular combined honours pattern (for example, B.A. Honours). In the latter case, when a particular course satisfies the requirements for both majors, the course will be used to fulfill the requirements for one major and a different course at the same level will be required to satisfy the other major.

3.1.14 Simultaneous and Subsequent Degrees
1. A student who has graduated with a Carleton University degree in a particular program will not be subsequently admitted to the same degree and program. Specifically, students who have graduated with a:
   a. B.A., B.A.S., B.Co.M.S., B.Sc., B. Econ., B. Cog. Sc. or B.Math. degree may apply subsequently for admission to the same degree if they apply for a different major or, if they graduated with a 15.0 credit degree or Major degree, they apply for an Honours degree with the same major.
   b. B.Eng. or B.I.T. degree may apply subsequently for admission to the same degree only if they apply for a significantly different program. A program with distinct streams constitutes a single program for this rule.
   d. B.J., B.Hum. may not apply to the B.J.Hum., and B.J.Hum. may not apply to B.J. or B.Hum.
2. A student who has graduated with a Carleton University degree that includes a minor will not be subsequently admitted to the same minor.
3. A student who has successfully completed a post-secondary credential will not be admitted to the B.A. or B.Sc. in Open Studies.
4. A student who has successfully completed a university degree in a given discipline will not be admitted to a minor in the same discipline in conjunction with subsequent degree studies.
5. A student will only be admitted to one degree and program at a time. The student's record will show only one active degree and program in any given term. Note that certain Certificates and Diplomas do allow concurrent degree studies.
6. A Carleton University degree student is not allowed simultaneously to be registered in degree studies at another post-secondary institution without the permission of Carleton University.

3.1.15 Restrictions on Credit for Certain Courses
Some courses may not be used for credit in certain programs. Restrictions may be listed in the course descriptions, the academic regulations for certain degree programs, and/or in this section.

1. Co-operative Education (Co-op) work term and report courses do not count for credit in any degree.
2. In addition, B.A. students in Economics and B.Econ. students will not receive credit for MATH courses below the 1000-level.
3. Students in the B.Mus. degree will not receive credit for MUSI 1106 or MUSI 1107.
4. Students in the B.Com. or the B.I.B. degree will not receive credit for BIT 2001, BIT 2002 or any 0000-level mathematics course.
5. Students in the B.Com. degree will not receive credit for BUSI 3602 or COMP 1001.
6. Students admitted with advanced standing to the B.Com., B.I.B., B.Hum., B.P.A.P.M., B.I.T., B.G.In.S. or B.Eng. degree will not receive credit on admission for courses with a grade below C- taken earlier.
7. For courses excluded from the B.Sc., see the Academic Regulations for the Bachelor of Science Degree section of this Calendar. For courses excluded from the
3.2 Academic Progression

3.2.1 Academic Performance Evaluation for Degree Students

The Academic Performance Evaluation as described in this section applies to Degree and Certificate Students. The corresponding process for Special Students is described in Section 6.6 of this Calendar.

The Academic Performance Evaluation is the annual assessment of a student's status in their degree. The first evaluation is made, at the end of the winter term, for all students who have completed at least 4.0 credits at Carleton University or on the University of Ottawa Exchange once all final grades are available. Subsequent evaluations occur at the end of the winter term following the completion of a minimum of 4.0 additional credits. A completed course is any course registration, including repeated courses, that results in a grade or notation other than WDN, IP, CTN, AUD or DNC. The basis of the evaluation is the student’s Overall CGPA, Major CGPA and, where appropriate, Core CGPA. For students in combined programs, Major CGPAs are calculated for each major where possible. The evaluation is made by comparing CGPAs to the minima required by the student's degree at the time of the evaluation. The possible outcomes of an Academic Performance Evaluation are: Good Standing, Academic Warning, Suspension, Continue in Alternate, Continue in General, Dismissed from Program, or Debarment.

The status Good Standing signifies that a Performance Evaluation has found that the student fully meets the academic standards prescribed for the student's program and is eligible to continue in that degree.

The status Academic Warning signifies that the student's performance with respect to the academic standards of the degree is deficient. The student may continue in the degree but must clear the Academic Warning by achieving a Good Standing assessment at the next Academic Performance Evaluation.

The status Suspension signifies that the student must leave their degree for at least one year. See also Section 3.2.3. Suspension occurs if at least one of the following conditions applies:

- the student has an Overall CGPA that is less than 1.00;
- while on Academic Warning, the student has failed to achieve a Good Standing assessment at the next Academic Performance Evaluation;
- the student was Admitted with Additional Requirements and has failed to satisfy those requirements.

The status Continue in General is applied at an academic performance evaluation (APE) if the student (i) is in an Honours B.A., B.C.S., B.Cog. Sc., B.Co.M.S., B.Econ., B.G.In.S., B.H.Sc., B.Sc., or B.Math. program, (ii) would be suspended at this APE due to a low CGPA, and (iii) meets or exceeds the minimum requirements for Good Standing in a general program. The student's program will be changed to the corresponding or other general program within the same degree and the student may apply to change this program within the degree, as long as they would be in Good Standing in the subsequent program.

The statuses Continue in Alternate (CA) and Dismissed from Program (DP) indicate that the student's performance has fallen below a minimum standard for the program and, in consequence, the student is removed from the program and is not readmissible to this program. These APE statuses are restricted to some professional and limited enrolment programs where there is high demand for the program and limited space in its required courses. The degrees and programs that use these statuses are: B.Eng., B.Hum., B.J., B.J.Sc., B.Com., B.I.B., B.I.T., B.P.A.P.M. The status CA or DP is assigned if any of the conditions for Suspension apply, in addition to any conditions set by the program. The status CA is assigned if, in addition, the student's Overall CGPA is at least 1.00. A student with status CA is eligible to continue at the university and may apply through Admissions Services for admission to another degree or to Special studies. The status DP is assigned if the Overall CGPA is less than 1.00. A student with status DP may apply for admission to Special studies only.

If a student satisfies the conditions for Suspended, Dismissed from Program or Ineligible to Return (no longer in use) at a performance evaluation in the student's current degree and the student has a previous decision of Suspended, Dismissed from Program or Ineligible to Return on the record in this or another degree or Special studies, then the student will be removed from the current degree with the standing Debarred. A Debarred student is not eligible for any studies at the university for at least three years. See Section 3.2.3 - Readmission after Suspension or Debarment.

3.2.2 Three Attempts of a Course (Engineering)

A student in the Bachelor of Engineering degree may attempt a course no more than three times. An attempt shall include courses in which the student has earned a final letter grade, SAT, or UNS.

If, after three attempts, the student has not achieved in any of the three attempts the minimum grade required to continue in the program, or, if on the third attempt of a course the student does not achieve a passing grade, the student must leave the degree with the status Continue in Alternate or Dismissed from Program.

3.2.3 Readmission after Suspension or Debarment

Suspension is from a particular degree, not from the University altogether. Upon receiving notice of Suspension from one degree, students may apply immediately as Special students (non-degree students), or seek
3.2.5 Assessment in Program Elements

In conjunction with the Academic Performance Evaluation, additional averages are calculated for program elements. A CGPA is calculated over the courses contributing to any Minor, Concentration, or Specialization. Students with a CGPA that is below the minimum required for a Concentration, Specialization or Minor may be removed from that program element.

3.2.6 Minimum CGPA Requirements

The standard CGPA requirements used in the Academic Performance Evaluation are presented in Table 1. The minimum required CGPA increases with the number of program credits (see Note 1) at the time of the Academic Performance Evaluation. Students with a CGPA close to the minimum at their first assessment will have to improve their academic grades significantly in order to maintain the Good Standing status through to graduation.

The Standard Minimum CGPA Requirements for Minors, Concentrations, and Specializations are presented in Table 2. These are not used in the Academic Performance Evaluation but may be used to determine whether a student can continue in a particular minor, concentration or specialization.

Table 1: Minimum CGPA Requirements for Good Standing Status

<table>
<thead>
<tr>
<th>Program credits complete</th>
<th>Honours</th>
<th>Architect. Engineer</th>
<th>Industrial Design</th>
<th>20.0 credit</th>
<th>Major</th>
<th>B.I.T.</th>
<th>15.0 credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 to 5.0</td>
<td>Overall</td>
<td>4.00</td>
<td>3.00</td>
<td>4.00</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
</tr>
<tr>
<td>5.5 to 10.0</td>
<td>Overall</td>
<td>4.50</td>
<td>3.50</td>
<td>4.50</td>
<td>3.50</td>
<td>3.50</td>
<td>3.50</td>
</tr>
<tr>
<td>10.5 to 15.0</td>
<td>Overall</td>
<td>5.00</td>
<td>4.00</td>
<td>4.00</td>
<td>3.50</td>
<td>3.50</td>
<td>3.50</td>
</tr>
<tr>
<td>15.5 or more</td>
<td>Overall</td>
<td>5.50</td>
<td>4.00</td>
<td>4.00</td>
<td>4.00</td>
<td>4.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>

Graduation Overall: 5.00, Major 6.50

Note:

1. The Program Credits are the course credits earned by the courses the student has completed, with either a passing or a failing grade, that would contribute to the credits required for graduation in the student's program had they been passed. The program credits include credits obtained through transfer, advanced standing, letters of permission or exchange. The program credits do not include courses from which the student has withdrawn.

2. Certain Honours programs may have different minimum Overall or Major CGPA requirements from those indicated above.
There are two types of circumstances that might warrant a request for an exception to published rules, regulations or deadlines. One type of petition concerns personal circumstances such as illness, unanticipated occupational commitments, or other unanticipated serious events. The second type concerns whether a rule or regulation has been properly or fairly applied to a student's record.

A student seeking accommodation with respect to an academic regulation, rule or deadline submits a petition in writing to the Registrar's Office. Unless subject to an earlier deadline, petitions must be submitted by the following deadlines:

- for petitions arising from the fall term: January 30
- for petitions arising from the winter term: June 30
- for petitions arising from the summer session: September 30

Students can obtain from the Registrar's Office the required Academic Petition form, information about the procedures to be followed, and details regarding the documentation needed to support a petition. Students seeking reconsideration of an admission decision must submit an application in writing to the Admission Services Office.

### 3.3.2 Undergraduate Appeals

An appeal is the process by which a student may challenge, in writing, the decision on a petition. Students may initiate an appeal by submitting an Academic Appeal Form to the Registrar's Office. Such appeals must be submitted within 14 days of receiving the decision on the original petition. It is the student's responsibility to ensure that the appeal submission is complete and includes all relevant matters which the committee should consider in rendering its decision. The Senate Undergraduate Studies Committee makes the final decision on an appeal.

### 3.3.3 Procedural Review

Students may request a procedural review of decisions made by the Senate Undergraduate Studies Committee. The review is initiated by a communication, in writing, to the Clerk of Senate. Procedural review is restricted to confirmation by the Clerk that (i) proper procedures have been followed as set out in the appropriate approved policy, (ii) that issues of bias have been properly addressed, and (iii) that the decision reached is within the scope of the delegated authority and is consistent with previous practice. A procedural review will not change the decision of an appeal. However, the Clerk will decide whether proper procedures have been followed and establish if any further actions are required.

### 3.3.4 Informal Appeal of Grade

There may be a number of circumstances in which students will have questions regarding their grades. These questions may be about understanding the grading scheme; about the grade awarded for a specific piece of work, including work that has not been returned; or about the determination of the final grade. Wherever possible, both during the term and after, concerns about the grading of student work should be settled informally between the student and the instructor. As a result of this informal appeal process the original grade may be raised, lowered or left unchanged.

Students have the right to have questions regarding their grades addressed and to view all material, including material that has not been returned such as final examinations. In some cases, the original submitted work will remain in the possession of the University and the
viewing of this work may be supervised. In cases where a student has concerns regarding the determination of their final grade, the student will be provided with a list of their grades on all components of the course and a description of how their final grade was calculated.

Students should initiate this process within seven working days of the day on which the official grade in question was made available. The informal appeal process should address the concern within 15 working days of the day on which the grade was made available through Carleton Central.

3.3.5 Formal Appeal of Grade
A student may submit a formal appeal of grade when the informal appeal process has not addressed their concerns. The appeal must be submitted to the Registrar's Office with required supporting documentation, normally within 20 working days of the day on which the grade was made available to the student, or the informal appeal process was completed (if applicable). The resolution of an appeal of grade is the responsibility of the Dean of the Faculty offering the course. The appeal must be specific to one or more graded components of the course and/or the calculation of the final grade.

On receiving a formal appeal from the Registrar's Office, the Faculty Dean may decide not to proceed with the appeal if, in the opinion of the Dean, reasonable grounds have not been established as a basis for the appeal. Circumstances which may result in a decision not to proceed may include, for example, cases where the Dean determines that the informal process has adequately addressed the student's concerns or where the Dean determines that a reasonable expectation of error or bias in the original grade has not been established. If the Dean decides not to proceed with the appeal, the student will be informed of the reasons for the decision.

In proceeding with an appeal, the Dean may assign reassessment of the work to one or more qualified readers other than the instructor. In this case, the identity of the reader(s) will not be made known to the appellant and the identity of the appellant will not be made known to the reader(s). After due consultation, the Dean, as chief academic officer of the Faculty, will assign the grade. The decision of the Dean is final. As a result of this formal appeal process the original grade may be raised, lowered or left unchanged. The student will be given a concise explanation of the decision.

3.4 Graduation Requirements
2.2.2/3.4.1 Minimum Number of Residency Credits
To be eligible for graduation with a Carleton degree, certificate or diploma, each student must present a certain number of credits earned at Carleton University which have not been presented to fulfill any degree that has been previously awarded, including a degree or degrees at Carleton University. These are referred to as residency credits. Courses taken under the University of Ottawa Exchange Agreement do not count as residency credits.

All degree students must present a minimum of 5.0 residency credits at graduation, with the following exceptions:

- The minimum number of residency credits for students in the Dual Degree, B.Eng., B.I.D, B.I.T. and B.A.S. Design program is half of the total number of credits required for the program. The residency requirement for B.A.S. students not in Design is the standard minimum of 5.0 residency credits at graduation.

To obtain a minor, a student must present at least 2.0 residency credits counting toward that minor.

To obtain an undergraduate certificate from Carleton University, students must present residency credits including a minimum of 4.0 credits taken at Carleton. The residency for certificates taken concurrently with a Carleton degree may be satisfied with credits used also to satisfy the degree residency requirement.

To obtain a post-baccalaureate diploma from Carleton University, students must present residency credits including a minimum of 3.0 credits taken at Carleton.

2.2.3/3.4.2 Advanced Credits
The credits presented at graduation that are credits completed at Carleton after admission, credits completed at Carleton within the last ten years for which advanced standing has been granted and credits completed as part of the University of Ottawa Exchange or another formal domestic or international Exchange, must include:

1. For Honours degrees, at least 3.0 credits in the major and at the 3000 level or above;
2. For Combined Honours degrees, at least 1.5 credits in each major and at the 3000 level or above;
3. For Major degrees, at least 3.0 credits in the major and at the 2000 level or above;
4. For 15.0 credit degrees, at least 3.0 credits at the 2000-level or above and, if applicable, in the major.

3.4.3 Graduation Requirements
In order for students to receive their credential, they must fulfill:

1. all the requirements of the department(s), school(s) or institute(s) in which they are taking the program;
2. all Faculty regulations;
3. all University regulations;
4. all financial obligations to the University.

The student is responsible for meeting graduation requirements and is strongly encouraged to discuss their program requirements with the Undergraduate Adviser for their program. The degree audit report (available on Carleton Central) is a guide to be used in consultation with the Undergraduate Advisor to discuss the student's academic progress.

3.4.4 Application for Graduation
Students must apply online for graduation via Carleton Central. Online applications must be completed by the following deadlines:
• for Spring Graduation (June): April 1
• for Fall Graduation (November): September 1
• for Winter Graduation (February): December 1
Visit carleton.ca/registrar for further information regarding graduation.

3.4.5 Automatic Graduation from the University
Students who have completed the requirements for the degree and program in which they are registered will be automatically considered for graduation after three consecutive terms of absence from the University.

3.4.6 Minimum CGPA Requirements for Graduation

<table>
<thead>
<tr>
<th>Table 3: Standard Minimum CGPA Requirements for Graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Honours Degrees</td>
</tr>
<tr>
<td>Engineering Degrees</td>
</tr>
<tr>
<td>Architecture (Design), B.I.D.</td>
</tr>
<tr>
<td>Major and 15.0 Credit Degrees, B.I.T.</td>
</tr>
<tr>
<td>BCom Non-Honours Degree</td>
</tr>
<tr>
<td>Post-Baccalaureate Diploma</td>
</tr>
</tbody>
</table>

Note: some programs have higher requirements.

3.4.7 Recognition of High Academic Achievement
Graduating students in any undergraduate degree will have exceptional academic achievement recognized if the student:
1. Has completed at least 10.0 credits toward the degree at Carleton University, and:
2. For the designation High Distinction, has an Overall CGPA equal to or greater than to 10.40;
3. For the designation Distinction, has an Overall CGPA less than 10.40 and equal to or greater than 9.80.
These recognitions of exceptional merit will be recorded on the student's transcript and diploma.

3.4.8 Recognition of Study Abroad
Carleton University recognizes students who successfully complete a pattern of study at a non-Canadian university comprising a significant international experience with a notation on both the student's transcript and diploma.

To qualify for a notation, the pattern of study must be either an approved pattern of study under a recognized International Exchange program, or an alternate pattern of study approved by the Dean.

The notation with Study Term Abroad will be used when the equivalent of 2.0 to 3.5 credits of courses are successfully completed, normally within one term.

The notation with Study Year Abroad will be used when the equivalent of 4.0 or more credits of courses are successfully completed, normally within one year.

Examinations

4.1 Undergraduate Examination Regulations
Students writing tests and examinations should be aware of the rules governing examination conduct. These rules include those listed in the Academic Integrity section of this Calendar and information about policy and procedures for writing examinations distributed at the final examination.

For examinations scheduled during the official examination period, it may be necessary to schedule examinations during the day for classes held in the evening and vice versa, or on Saturday and Sunday.

All tests and examinations are subject to the following rules:
1. Tests or examinations given in class may not exceed the time allotted for the class;
2. The schedule for any term tests or examinations to be held outside class time must be communicated in the course outline. Students who are unable to write during this scheduled time must be accommodated before the last day of classes.
3. If there is a final examination in the summer term, it will be held during the official examination period;
4. If there is a final examination or an end-of-term examination in a multi-term course, this examination will be held in the official examination period;
5. No summative tests or final examinations may be held during the last two weeks of fall or winter terms, or during the last week of each half of the summer term. Please note that practical exams, where the material cannot be tested during formal examination period, are exempt from this rule provided (i) students are made aware of the practical exam requirement at the start of the term via the course outline, and (ii) the examination contributes to no more than 15% of the final grade. If provision (i) above is met but the examination comprises more than 15% of the final grade, Dean approval is required prior to informing students via the course outline.
6. Formative tests or examinations may be held during the last two weeks of classes of fall or winter terms, or during the last week of each half of the summer term, provided they do not total more than 15% of the final grade. The purpose of formative tests or examinations is to provide feedback to students on a component of the course content.
7. No tests or examinations may be held between the end of classes in a term and the beginning of formally scheduled examinations;

8. Normally, final take-home examinations in any term will be assigned on or before the last day of classes and are due on the last day of the official examination period. Final take-home examinations not set according to this normal practice must be formally scheduled by Scheduling and Examination Services and are subject to overload rules. In all cases the rules for take-home examinations must be well communicated to students by course instructors.

9. Students are not required to write with an exam conflict (defined as two examinations scheduled at the same time) nor in an exam overload, defined as (i) 3 or more examinations scheduled in 3 consecutive time slots, (ii) 4 or more examinations scheduled in 5 consecutive time slots, or (iii) 5 or more examinations scheduled in 7 consecutive time slots, where a time slot refers to the morning, afternoon, or evening time slot on an exam day.

4.2 Examination Rules of Conduct
From the Carleton University Academic Integrity Policy, https://carleton.ca/senate/wp-content/uploads/Academic-Integrity-Policy1.pdf:

The University is committed to ensuring fairness and consistency in the completion of examinations. As part of this commitment, students are required to follow proper examinations procedures. A student who commits a violation of this Policy on an examination, test, or take-home examination, or obtains or produces an answer or unfair advantage, are subject to sanction under this Policy. This includes but is not limited to:

1. bringing to the examination/test room any unauthorized material;
2. writing an examination or part of it, by consulting any person or materials outside the confines of the examination room without permission to do so;
3. intentionally leaving answer papers exposed to view;
4. attempting to read other students’ examination papers;
5. speaking to another student (even if the subject matter is irrelevant to the test);
6. disrupting or delaying a test or examination;
7. failing to comply with the instruction of a University official administering an examination.

Further to the University’s Academic Integrity Policy statement, a violation of the policy may also occur by breaching one of the Policy and Procedures for Writing Examinations.

Please visit the University’s Human Rights Policy and Offenses of Conduct sections of this Calendar for more information.

4.3 Deferred Final Examinations
4.3.1 Deferred Final Examinations
Students who are unable to write a final examination because of a serious illness/emergency or other circumstances beyond their control may apply for accommodation. Normally, the accommodation for a missed final examination will be granting the student the opportunity to write a deferred examination. In specific cases when it is not possible to offer a deferred examination, and with the approval of the Dean, an alternate accommodation may be made.

The application for a deferral must:

1. be made in writing to the Registrar's Office no later than three working days after the original final examination or the due date of the take-home examination; and,
2. be fully supported by appropriate documentation and, in cases of illness, by a medical certificate dated no later than one working day after the examination, or by appropriate documents in other cases. Medical documents must specify the date of the onset of the illness, the (expected) date of recovery, and the extent to which the student was/is incapacitated during the time of the examination. The University’s preferred medical form can be found at the Registrar's Office here.

4.3.2 Missed Deferred Examinations
Students will not be given a deferral of a deferred examination.

Students granted a deferred final examination who are then unable to write the deferred final examination will receive the earned grade in the course (which may be an F).

Students granted a deferred final examination who are then unable to write the deferred final examination due to properly documented personal or medical conditions may appeal to receive one of the notations Aegrotat (AEG) or Withdrawn (WDN) for the course as assigned by the appropriate appeal committee. (Students may not petition for one of these alternate notations if they attended the deferred examination but did not complete it for personal or medical reasons unless the circumstances satisfy the requirements for Early Departure from Final Examinations in section 4.3.3 below.) NOTE: If a student would be unable to pass the course as specified in the course outline, regardless of the result of a final examination, a grade of F may still result. If a student is passing the term work and is able to pass the course as specified in the course outline, based on the results of a final examination, then a withdrawn (WDN) may be granted.

Aegrotat standing may be considered for applicants for deferred finals but will be granted only if a substantial proportion of the term work has been completed and is of high quality. AEG denotes a pass standing.

Students who have obtained approval for a deferred examination in a Carleton University Online (CUOL) course will have access to course materials after the end of the academic term of the original course.

Deferred final examinations are scheduled in the time period approved by Senate. Please refer to the Academic Schedule for deferred examination dates.
4.3.3 Early Departure from Final Examinations

Students are expected to assess their medical situation/ability to write an examination prior to entering the examination room. Students who do not write a final examination because of illness or other circumstances beyond their control may apply to write a deferred examination. Section 4.3.1 of this calendar outlines the regulations governing deferral of final examinations.

Students are expected to complete a final examination once begun. If the student experiences a significant deterioration of health while the examination is in progress, it may be possible to submit a petition to apply to write a deferred examination.

A significant deterioration during an exam is a situation whereby the student requires immediate and/or emergency medical attention. In such circumstances, a student will be required to seek appropriate documentation to confirm that the medical situation caused significant, acute symptoms during the examination that completely prohibited the student from completing the exam, describing the specific impacts on the student’s ability to continue the exam.

A student must then petition to the Registrar’s Office within three (3) business days of the examination with appropriate supporting documentation.

Minor illnesses and ongoing chronic illnesses under medical management will normally not be considered valid grounds for granting a deferred final examination.

4.4 Deferred Term Work

In some situations, students are unable to complete term work due to illness or other circumstances beyond their control, which forces them to delay submission of the work.

1. Students who claim illness, injury or other extraordinary circumstances beyond their control as a reason for missed term work are held responsible for immediately informing the instructor concerned and for making alternate arrangements with the instructor and in all cases this must occur no later than three (3) working days after the term work was due. The alternate arrangement must be made before the last day of classes in the term as published in the academic schedule. Normally, any deferred term work will be completed by the last day of term. In all cases, formative evaluations providing feedback to the student should be replaced with formative evaluations. In the event the altered due date must extend beyond the last day of classes in the term, the instructor will assign a grade of zero for the work not submitted and submit the student’s earned grade accordingly; the instructor may submit a change of grade at a later date. Term work cannot be deferred by the Registrar.

2. In cases where a student is not able to complete term work due to illness or injury for a significant period of time/or long term, the instructor and/or student may elect to consult with the Registrar's Office (undergraduate courses) or Graduate Registrar (graduate courses) to determine appropriate action.

3. If a student is concerned the instructor did not respond to the request for academic accommodation or did not provide reasonable accommodation, the student should consult with the department/school/institute chair/director. If a mutually agreeable accommodation to complete course requirements prior to the course grade submission deadline cannot be achieved, the Associate Dean will become involved. If academic accommodation is not granted, and the student receives word after the academic withdrawal deadline, the student may submit a petition to the Registrar's Office (undergraduate courses)/Graduate Registrar (graduate courses) for a final grade of WDN (Withdrawn) in the course(s). If academic accommodation is not granted, and the student receives word prior to the academic withdrawal deadline, the student may elect to withdraw from the course(s).

4. Furthermore, if academic accommodation is granted, but the student is unable to complete the accommodation according to the terms set out by the instructor as a result of further illness, injury or extraordinary circumstances beyond their control, the student may submit a petition to the Registrar's Office (undergraduate courses)/Graduate Registrar (graduate courses). Please note, however, that the course instructor will be required to submit an earned final grade and further consideration will only be reviewed according to established precedents and deadlines. (More information: Undergraduate | Graduate).

Grading

5.1 Credit

To obtain credit in a course, students must satisfy the course requirements as published in the course outline.

5.2 The Course Outline

The instructor is required to provide a formal statement to students called the Course Outline. The course outline must be made available to all Carleton students registered in that course, on or before the required date found in the schedule for The Academic Year, normally one week prior to the start of a term.

The course outline must specify:

1. Complete calendar description.
2. Proposed list of topics to be covered.
3. Mandatory Required Materials to be acquired.
4. All the elements that will contribute to the cumulative grade earned and the overall approximate grade breakdown for the course. The elements and grade breakdown may initially be approximate, but are normally confirmed no later than the last day of registration for the term. If faculty deviate from section 5.4 on the grading system, the grading system that will be used must be clearly indicated. If additional requirements beyond the cumulative grade earned must be satisfied in order to pass the course, this should be clearly identified in the course outline.
5. Due dates for major course elements should be indicated. The dates may be tentative initially, but are normally confirmed no later than the last day of registration for the term. If changes to due dates are required students should be given at least two weeks notice. Final scheduled exam dates are excluded from the information provided, and will be presented at a later date in the term.

6. TA information, as available.

7. Any required time commitments occurring outside of the formally scheduled lectures, tutorials, labs and discussion groups. Changes may be required but students should be given at least two weeks notice. These time commitments are specific to course requirements and do not imply study time or group work, for example.

8. The outline must also include/reference all University policies governing academic accommodation.

5.3 Early Feedback Guideline
Providing feedback to students on academic work, completed or in progress, is an integral part of teaching and learning in that it allows students to measure their understanding of material, the success of their learning strategies, and their progress on learning objectives. While the nature and frequency of such feedback will vary with the course and level, Carleton University is committed to providing students with appropriate and timely feedback on their work. Accordingly, wherever possible, and especially in first- and second-year courses, instructors are urged to include academic work that is assigned, evaluated and returned prior to the 25th teaching day of each term. More generally, all instructors are urged to include academic work that is assigned, evaluated and returned prior to the 40th teaching day of each term.

The spirit of this guideline should be followed during the summer term. In particular, all instructors are urged to include academic work that is assigned, evaluated, and returned at least two days prior to the last day to withdraw from the course in the Early, Late, or Full Summer term.

Course outlines should provide an indication of approximately when the first graded piece of work will be returned to students. In cases where a course does not lend itself to early feedback, this should be clearly noted on the course outline.

5.4 Grading System
Standing in a course is determined by the course instructor, subject to the approval of the faculty Dean. Standing in courses will be shown by alphabetical grades. The system of grades used, with corresponding grade points and the percentage conversion, is listed below.

Grade points are adjusted proportionately. The grade points are adjusted proportionately.

<table>
<thead>
<tr>
<th>Grade Point Equivalence</th>
<th>Percentage Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>12</td>
</tr>
<tr>
<td>A</td>
<td>11</td>
</tr>
</tbody>
</table>

5.4 Grading System
Standing in a course is determined by the course instructor, subject to the approval of the faculty Dean. Standing in courses will be shown by alphabetical grades. The system of grades used, with corresponding grade points and the percentage conversion, is listed below.

Grades points are adjusted proportionately.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Point Equivalence</th>
<th>Percentage Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-</td>
<td>10</td>
<td>80-84</td>
</tr>
<tr>
<td>B+</td>
<td>9</td>
<td>77-79</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td>73-76</td>
</tr>
<tr>
<td>B-</td>
<td>7</td>
<td>70-72</td>
</tr>
<tr>
<td>C+</td>
<td>6</td>
<td>67-69</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>63-66</td>
</tr>
<tr>
<td>C-</td>
<td>4</td>
<td>60-62</td>
</tr>
<tr>
<td>D+</td>
<td>3</td>
<td>57-59</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>53-56</td>
</tr>
<tr>
<td>D-</td>
<td>1</td>
<td>50-52</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>less than 50</td>
</tr>
</tbody>
</table>

In cases where the final examination is not written and was not explicitly a requirement to successfully complete the course, the cumulative grade earned on term work without the missing examination will be assigned.

If the grade conversion deviates from the percentage conversion presented above, the faculty member must notify the class in the course outline.

Other grades and notations in current use by the University are as follows:

<table>
<thead>
<tr>
<th>Notation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEG</td>
<td>Aegrotat. Pass standing is granted under special circumstances by an academic appeal committee, in response to an application from or on behalf of a student, on the basis of course work when no further assessment is considered feasible. AEG has no impact on the CGPA calculation.</td>
</tr>
<tr>
<td>AUD</td>
<td>AUD. No Academic Credit, no impact on CGPA. Audit indicates the course was taken for interest and not for academic credit.</td>
</tr>
<tr>
<td>CH</td>
<td>Credit granted under challenge for credit policy. CH has no impact on the CGPA calculation.</td>
</tr>
<tr>
<td>CTN</td>
<td>Continuing. No academic credit and no impact on the CGPA. Assigned by the Registrar’s Office to indicate the student is currently registered in the course.</td>
</tr>
<tr>
<td>CUO</td>
<td>Current University of Ottawa Exchange. An interim notation.</td>
</tr>
<tr>
<td>CUR</td>
<td>Current registration. An interim notation assigned by the Registrar’s Office to indicate the student is currently registered in the course.</td>
</tr>
<tr>
<td>DEF</td>
<td>Deferred Final Examination and/or final course work. An interim notation administratively assigned by the Registrar’s Office upon approval of a request to write a deferred final examination or defer submission of final course work. DEF must be replaced by a final grade within the prescribed time or be replaced with F.</td>
</tr>
<tr>
<td>F</td>
<td>Failure. The grade of F is assigned when the student has failed to meet the conditions of “satisfactory performance” defined in the Course Outline. F carries 0.0 grade points.</td>
</tr>
<tr>
<td>Notation</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>ABS</td>
<td>Absent from a required final examination. ABS is assigned only when the student is absent from the required final examination and has achieved satisfactory performance during the term as specified in the course outline. ABS is equivalent to an F and it carries 0.0 grade points.</td>
</tr>
<tr>
<td>IP</td>
<td>In Progress – a notation (IP) assigned to a course by a faculty member when: At the undergraduate level, an undergraduate thesis or course has not been completed by the end of the period of registration. At the graduate level, a graduate thesis, research essay, independent research project or comprehensive examination has not been completed by the end of the period of registration. The IP notation may also be used at the graduate level when a research seminar has not been completed by the end of the period of registration provided the research seminar has been approved by Graduate Faculty Board as being eligible for the use of this notation. In the case of re-registration in any of the above courses, the IP notation will remain; a final grade will normally be assigned in the final period of registration. Where there is no re-registration in any of the above courses, the IP notation must be replaced with an appropriate notation or grade within the prescribed time period, or be replaced by a notation of WDN.</td>
</tr>
<tr>
<td>SAT</td>
<td>Satisfactory performance in an ungraded program requirement, option or course taken on Letter of Permission or International Exchange. SAT has no impact on the CGPA calculation.</td>
</tr>
<tr>
<td>UCH</td>
<td>Unsuccessful attempt for CH. UCH has no impact on the CGPA calculation.</td>
</tr>
<tr>
<td>UNS</td>
<td>Unsatisfactory performance in an ungraded program requirement, option or course taken on a Letter of Permission or International Exchange. UNS has no impact on the CGPA calculation.</td>
</tr>
<tr>
<td>WDN</td>
<td>Withdrawn. No academic credit, no impact on the CGPA. WDN is a permanent notation that appears on the official transcript for students who withdraw after the full fee adjustment date in each term (noted in the Academic Year section of the Calendar each term). Students may withdraw on or before the last day of classes.</td>
</tr>
<tr>
<td>GNA</td>
<td>Grade not available. An interim notation administratively assigned by the Faculty when a grade is not available, and must be replaced with a final grade.</td>
</tr>
<tr>
<td>DNC</td>
<td>Did not complete the course. No academic credit or impact on the CGPA calculation. In credit courses, the notation DNC is assigned by the appropriate appeal committee in the case of a student, who, having achieved satisfactory performance during the term, and has been granted a deferred final examination in the course then is unable to write the deferred examination due to continued and documented personal or medical reasons. In the case of audited courses, DNC is assigned by the instructor when the student has registered to audit the course and has not satisfied the requirements for successful audit.</td>
</tr>
<tr>
<td>EXC</td>
<td>Satisfactory performance on International Exchange, EXC has no impact on the CGPA calculation.</td>
</tr>
<tr>
<td>FND</td>
<td>Failure with no deferred final examination allowed. The grade FND is assigned only when the student has failed the course on the basis of inadequate term work as specified in the Course Outline. FND carries 0.0 grade points.</td>
</tr>
<tr>
<td>FNS</td>
<td>Failure without access to a supplemental examination because of incomplete term work or unacceptably low standing. No academic credit.</td>
</tr>
<tr>
<td>FWS</td>
<td>Failure with access to supplemental examinations.</td>
</tr>
<tr>
<td>INC</td>
<td>Incomplete may be assigned to a Graduate course in which the student has been approved to submit an assignment after the final deadline date. Incomplete must be replaced with a letter grade within forty days of the end of classes. If the Incomplete is not changed to a letter grade within forty days of the end of classes, the Incomplete will be changed to a grade of F, which will remain as a permanent entry on the student's record. In exceptional cases students may petition the Dean of the Faculty of Graduate and Postdoctoral Affairs to have the Incomplete remain on the student record. For circumstances that go beyond the forty-day period (i.e. medical), students may apply for a deferral (refer to Special/Deferred Final Examinations, Section 9.3).</td>
</tr>
<tr>
<td>LOP</td>
<td>Satisfactory performance on Letter of Permission, LOP has no impact on the CGPA calculation.</td>
</tr>
<tr>
<td>P</td>
<td>Pass.</td>
</tr>
<tr>
<td>PWD</td>
<td>Pass With Distinction.</td>
</tr>
</tbody>
</table>

5.4.1 A course is considered to be completed when the course registration results in a notation or grade other than WDN, IP, CTN, CUR or AUD, CEX, CLP, DEF, GNA, CUO.  
5.4.2 A course is considered to be successfully completed if the course is completed with a passing grade, SAT, CH, or AEG.  

5.5 Change of Grade  
Final grades are posted after grades are approved. Once posted, final grades may only be changed through informal
or formal appeals of grade processes (see Sections 3.3.4 and 3.3.5 of the Undergraduate Calendar).

Any instructor-initiated changes beyond the formal and informal appeal process must be completed by the instructor and approved by the faculty dean, or designate within 6 months of the last day of the exam period.

Any changes beyond this 6 month period must be initiated after consultation with the faculty dean or designate.

Unless an appeal has been initiated prior to the awarding of a degree, grades that have been used towards the awarding of a degree are not eligible for a change of grade.

**Academic Regulations for Special Students**

6.1 Special Students

Special students may be admitted to a degree program if their academic achievement at Carleton University indicates a reasonable probability of future academic success. Previous post-secondary studies at other institutions will also be taken into consideration at the time the application for admission is evaluated. Students with previous, unsuccessful post-secondary studies should contact the Admissions Services before attempting to qualify for admission on the basis of studies as a Special student.

6.2 Application

Applications to study as a Special student are submitted online to the Registrar’s Office at [https://carleton.ca/registrar/special-students/](https://carleton.ca/registrar/special-students/). Applications must include transcripts from the most recent study (high school, post-secondary), as well as the application fee. Documentation provided must satisfy the English language requirements of the University (see 6.3 below).

6.3 Proficiency in English

Special students must satisfy the University English language proficiency requirement listed in the Admissions Regulations section.

6.4 Course Selection

Special students are eligible to register in most courses provided they meet prerequisites. Space in certain courses may be limited and some courses are restricted to degree students. Restrictions and prerequisites are listed in the Class Schedule and the Calendar course description.

Special students planning on applying for admission to a program in the future are advised to note the specific Faculty requirements for course selection and the admission requirements for Special students as listed in this Calendar.

6.5 Course Load

Special students may enrol in a maximum of 1.0 credit in each of the summer, fall and winter terms.

Students who enrol as Special after suspension from a degree or certificate program do not qualify for course overload.

Special students who have completed at least 1.0 credit taken at Carleton University and have a CGPA of at least 7.00 may petition to the Registrar’s Office to register in a maximum of 1.5 credits in each of the summer, fall and winter terms. Permission from the Registrar’s Office is required.

Special students may enrol in 2.5 credits in each of the fall and winter terms and in 2.0 credits in the summer term if the student holds an undergraduate degree from a recognized post-secondary institution and presents official documentation to confirm their degree.

Students studying with an official approved Letter of Permission from a recognized post-secondary institution will be permitted to enrol in the course load indicated on their Letter of Permission.

6.6 Academic Performance Evaluation

Academic Performance Evaluation for Special students is carried out at the same time as for degree students. Special students receive their first Academic Performance Evaluation when the student has completed 2.0 credits since the most recent admission to Special studies when final grades are available. Subsequent evaluations occur when the student has completed an additional 2.0 or more credits. The result of an Academic Performance Evaluation is that the student is in Good Standing, on Academic Warning or is Suspended.

A Special student is considered to be in Good Standing at an Academic Performance Evaluation if their CGPA is at least 3.00.

A Special student is considered to be on Academic Warning at an Academic Performance Evaluation if their CGPA is less than 3.00 and at least 1.00 and they were in Good Standing before the evaluation.

Special students are Suspended if:

1. they are on Academic Warning at the time of a subsequent Academic Performance Evaluation and do not achieve Good Standing at that Academic Performance Evaluation; or,
2. their CGPA is less than 1.00 at the time of any Academic Performance Evaluation.

A Suspended Special student may not return to Special studies for one year.

6.7 Special Students Enrolling in Graduate-Level Courses

Anyone wishing to enrol in a graduate-level course as a Special student must obtain permission from the appropriate department. Requests are submitted through the registration system as a Course Override Request. Anyone considering pursuing a graduate degree is urged to contact the Faculty of Graduate and Postdoctoral Affairs prior to registration as a Special student.
Academic Regulations for Certificate Students

7.1 Academic Regulations and Requirements for Undergraduate Certificates
In addition to the requirements presented here, students must satisfy the university regulations (see the Academic Regulations of the University section of this Calendar).

Definition
An undergraduate certificate is defined as a structured set of at least 4.0 undergraduate credits in a particular discipline or area of study that introduces the student to - or extends their knowledge of - that discipline or area of study. An undergraduate certificate is a stand-alone credential that may be taken concurrently with a bachelor's program or independently. It is normally constituted by a structured set of sequential year-level courses.

Program Requirements
- A minimum of 4.0 credits
- Minimum grade requirements may apply
- Consult the individual program entries for details

Academic Regulations for Students with Disabilities

8.1 Academic Regulations for Students with Disabilities
Carleton University is strongly committed to providing access and accommodation for all individuals with identified and duly assessed disabilities. The University has a Senate-approved policy on academic accommodation that forms part of its Human Rights Policy. This policy should be consulted for further information and is available at: carleton.ca/equity. The policy promotes efforts to accommodate students with disabilities so that they will have the opportunity to meet learning objectives and be fairly evaluated in their performance. In no case, however, does academic accommodation negotiate away, lower, or remove the academic standards and learning objectives of any course or program, rule, regulation, or policy at the University.

The Paul Menton Centre for Students with Disabilities is the designated unit at the University for assisting the Carleton community in integrating persons with disabilities into all aspects of Carleton's academic and community life. The Paul Menton Centre provides assessment of academic accommodation, advises students on strategies to open a dialogue with instructors and acts as consultant, facilitator, coordinator and advocate in this area for all members of the University community.

The Paul Menton Centre provides individualized support services, based on appropriate and current documentation, to persons who are deaf or hard of hearing, with learning disabilities, attention deficit disorder (ADD), visual impairments, head injuries, physical disabilities including mobility impairments, or who have psychiatric, other medical or non-visible disabilities.

Students are responsible for applying for special services by making an appointment with the appropriate coordinator at the Paul Menton Centre. All requests will be considered on the basis of individual need. Students are advised to come to the Centre early in the term to discuss service requests.

Examination accommodations for all tests and examinations (in-class, CUOL, or formally scheduled) must be arranged by specific deadline dates. Please consult the Paul Menton Centre for a list of deadlines. Note that it may not be possible to fulfill accommodation requests received after the specified deadlines.

Academic Regulations for Students with Religious Obligations

9.1 Academic Regulations for Students with Religious Obligations
Carleton University accommodates students who, due to religious obligation, must miss an examination, test, assignment deadline, laboratory, or other compulsory event. The University has a Senate-approved policy on religious accommodation that forms part of its Human Rights Policy, available at: carleton.ca/equity.

Accommodation will be worked out directly and on an individual basis between the student and the instructor(s) involved. Students should make a formal written request to the instructor(s) for alternative dates and/or means of satisfying requirements. Such requests should be made during the first two weeks of any given academic term*, or as soon as possible after a need for accommodation is known to exist, but in no case later than the penultimate week of classes in that term. Instructors will make reasonable accommodation in a way that shall avoid academic disadvantage to the student.

Students unable to reach a satisfactory arrangement with their instructor(s) should contact the Director of Equity Services. Instructors who have questions or wish to verify the nature of the religious event or practice involved should also contact this officer.

*When a student's presence is required prior to the date on which classes begin (e.g. for field trips or orientation activities), any student who cannot meet this expectation of attendance for reasons of religious accommodation should notify the Registrar's Office in advance.

Academic Integrity and Offenses of Conduct

10.1 Academic Integrity Policy

10.1 Academic Integrity Policy
The University has adopted a policy to deal with allegations of academic misconduct. This policy is expressed in the document Carleton University Academic Integrity Policy, effective July 1, 2006 and last updated on June 26, 2015. The policy describes in detail its scope of application, principles, definitions, rights and responsibilities, academic integrity standards, procedures,
sanctions, transcript notations, appeal process, and records implications.

The complete policy is available at: https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf

10.2 Offenses of Conduct: Discrimination and Harassment

10.2.1 Carleton University's Human Rights Policy

The University has in place policies and procedures to deal with allegations of discrimination and harassment, including sexual harassment. These are outlined in detail in the Carleton University Human Rights Policies and Procedures, effective May 1, 2001.

10.2.2 Unacceptable Conduct

Unacceptable conduct is outlined in the policy and includes discrimination or harassment based on race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, political affiliation or belief, sex, sexual orientation, gender identity, age, marital status, family status, or disability/handicap within the meaning of the Ontario Human Rights Code. Unacceptable conduct also includes threatening, stalking and unwelcome communication either in person or through electronic or other means. For the three policy sections below, the definition of prohibited behaviour is described in the italicized section that follows.

From the Anti-Racism and Ethnocultural Relations Policy

1. The University prohibits discrimination and harassment, including conduct on the basis of race, ancestry, place of origin, colour, ethnic origin and citizenship that:"

From the Gender Equality Policy

1. The University prohibits discrimination and harassment, including conduct on the basis of sex, gender or gender identity that:"

From the Sexual Orientation Equality Policy

1. The University prohibits discrimination and harassment, including conduct on the basis of sexual orientation or perceived sexual orientation that:
   5.1 Is abusive, demeaning or threatening including behaviour such as name calling; derogatory remarks, gestures and physical attacks; or display of derogatory or belittling pictures and graffiti; or
   5.2 Biases administrative and appointment decisions, employment and workplace practices, tenure, promotion, appointment, leave and salary determinations; or
   5.3 Biases academic decisions such as admissions, grading, the application of Regulations and scheduling of academic activities; or
   5.4 Misuses power, authority or influence; or
   5.5 Discriminates in the provision of goods and services, or access to premises, accommodation and other facilities."
Students with concerns regarding discrimination, harassment, stalking, sexist or racist behaviour, or any other prohibited action as outlined in the Human Rights Policy, should call or meet with a member of Equity Services for advice and guidance on how to handle the situation. This service is confidential and does not compel the student to take any further action.

Formal complaints must be made in writing and directed to the Dean or Vice President responsible for the area where the complaint took place. Staff in Equity Services are available to assist with the preparation of a formal complaint. Complaints must be made within 12 months after the last alleged incident of discrimination or harassment unless exceptional circumstances apply in which case the University Secretary may grant an extension of up to an additional 12 months.

10.2.4 Formal Procedures

The procedure for formal complaints is outlined below:

1. An allegation shall be made in writing to the Dean of the Faculty in which the program to which the respondent has been admitted belongs or, in the circumstances where the respondent has not been admitted to a program, to the Dean of the Faculty where the majority of courses in which the respondent has registered are administered. An allegation against a student in residence when made by another student in residence which involves the complainant's enjoyment of their accommodation shall be made to the Vice-President (Academic). The Dean, or the Vice-President (Academic), as the case may be, shall cause to have an investigation conducted and, upon receipt of the report of the investigation, shall either 1) dismiss the allegation on the grounds of insufficient evidence or lack of jurisdiction by the university, or 2) accept that the allegation is founded and seek the agreement of the respondent to a remedy, or 3) refer the matter to the President. A Dean's dismissal of the allegation may be appealed, within ten working days, to the Vice-President (Academic) who may, in turn, either 1) again dismiss the allegation, or 2) accept that the allegation is founded and propose a remedy to the respondent, or 3) refer the matter to the President. In the case of students in residence, where the original allegation has been made to the Vice-President (Academic) and is dismissed, appeal shall be directly to the President who may either 1) again dismiss the allegation, or 2) accept that the allegation is founded and propose a remedy to the respondent, or 3) refer the matter to a tribunal appointed by the Senate.

2. In the instance where the matter has been referred to the President, the latter shall decide whether the University shall conduct a hearing before a tribunal appointed by the Senate. If the allegation is proven, the tribunal shall decide upon one of the following sanctions. The student may be:
   a. expelled;
   b. suspended for a period of time from all studies at the University;
   c. restricted in their use of University facilities; and/or
   d. given a reprimand.

Should the President decide not to conduct a hearing before a tribunal, the allegation shall be deemed to have been dismissed, but the President shall give written reasons for such a decision, and these reasons shall be communicated to the parties involved.

1. In the instance where the complainant wants redress from the University without the involvement of the respondent, or where the respondent is unknown or is not a member of the University community, and/or where there is a claim that the University has failed or has been negligent in providing a safe, non-hostile environment, the allegation of an offence shall be made in writing to the President, who shall cause an investigation to be conducted. Upon receipt of the report of the investigation, the President may order any relief they deem fit, and shall give written reasons for the decision; which reasons shall be communicated to the complainant.

Information about procedure governing tribunals is available from the Clerk of Senate: senate@carleton.ca.

General Admissions Requirements and Procedures

1. General Admission Requirements

Persons wishing to follow programs of study leading to a degree or diploma or certificate must be formally admitted to the University.

Persons wishing to register in credit courses without having been formally admitted to the University may do so as Special students. See Special Studies (Non-Degree) below, for more information.

An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca/requirements for further details.

Applicants should note that meeting the minimum requirements of a program does not guarantee admission to the University. Applications from students whose grades do not meet the requirements in a given year or program will be considered individually. Students in this category may be asked to provide additional information to assist the University in determining where there are special circumstances that would permit their admission to Carleton.

This publication contains admission requirements for the 2021-22 academic year only. Students wishing to apply for 2022-23 should contact Admissions Services for information on requirements and procedures.
Individuals who are in any doubt about their eligibility for admission are encouraged to inquire at Admissions Services.

2. Accessibility for Students with Disabilities
Carleton University is committed to making reasonable accommodation to individuals with disabilities, and actively encourages application from students with disabilities. This commitment includes gaining an understanding of the circumstances of an individual's disabilities and adjusting services to all academically qualified individuals to compete on an equitable basis.

Students are encouraged to contact the Paul Menton Centre for Students with Disabilities for further information to enable them to assess the extent to which specialized services will be available.

Academic accessibility is intrinsically linked to physical accessibility. Carleton is committed to continually monitoring and upgrading physical accessibility to whatever extent is possible.

A Senate standing committee monitors the needs and problems of students with disabilities in conjunction with their academic problems and makes recommendations for improvements.

3. Multiple Undergraduate Programs
Students who already possess an undergraduate degree, certificate, or diploma from another university or from Carleton University may apply for admission to a second undergraduate program. To be eligible for graduation, there are a minimum number of Carleton credits that must be successfully completed. Please see Section 2.2.2 Minimum Number of Residency Credits and Section 2.2.3 Advanced Credits in the Academic Regulations of the University.

4. English as a Second Language Requirements (ESLR)
The language of instruction at Carleton University is English. In their own interest, students whose first language is not English must demonstrate that they can cope with the language demands of an English language university, and they can do so by following one of two options:

Option 1
In order to be eligible for admission to an undergraduate degree program or as a Special student at Carleton University without any English as a Second Language Requirement, all international applicants as well as Canadian citizens and residents whose first language is not English or French are required:

1. to present official transcripts to indicate that they have studied for the last three years (full-time non-ESL) in a high school, college or university in Canada, the United States, the United Kingdom or any other country in which the primary language is English and where the language of instruction in the relevant educational institution was exclusively English, or
2. to present an official minimum 70 band score (with no band below 60) on the Canadian Academic English Language (CAEL) Assessment, or
3. to present an official minimum score of 86 overall on the Internet-based (iBT) Test of English as a Foreign Language (TOEFL) with a minimum score in each component of: writing - 22, speaking - 22, reading - 20, listening - 20; or 237 on the computer-based Test of English as a Foreign Language (TOEFL); or 580 on the paper-based Test of English as a Foreign Language (TOEFL), or
4. to present an official minimum score of 6.5 overall on the International English Language Testing System (IELTS) Academic Version, with a minimum score of 6.0 on each band, or
5. to present an official minimum overall score of 60 (with a minimum of 60 on each band), on the Pearson Test of English (Academic), or
6. to have completed ESLA 1900 or ESLA 1905 with a final grade of B- or higher.

Applicants whose first language is French must present transcripts to indicate that they have taken four years of anglais (English) in a Canadian secondary school in order to be admitted without an English as a Second Language Requirement.

Option 2
Applicants whose first language is not English who do not meet the requirements stated in Option 1 may be offered admission to an undergraduate degree program or as a Special student, with an English as a Second Language Requirement (ESLR). These applicants are required to:

1. present an official overall score between 40 and 69 (with a minimum score in each band of 30 and a minimum average of 40 over writing, reading, and listening) on the Canadian Academic English Language (CAEL) Assessment, or
2. present an official overall score between 61 and 85 (with a minimum score in each component of 15) on the Internet-based (iBT) Test of English as a Foreign Language (TOEFL); or between 173 and 236 on the computer-based TOEFL; or between 500 and 579 on the paper-based TOEFL, or
3. present an official overall score between 5.0 and 6.4 (with a minimum score in each band of 4.5 and a minimum average of 5.0 over writing, reading, and listening) on the International English Language Testing System (IELTS).

Applicants with language scores within the above ranges may be permitted to begin their studies by registering in credit ESLA courses(s) and a limited number of credit courses until their ESLR is completed.

Students must be registered in and attending the required credit ESLA course(s) to be permitted to register in any other courses. Students who have not registered appropriately will be deregistered from all credit courses. This includes those students registered in credit courses without the required ESLA course registration and those
Special students may normally enrol in a maximum of 1.0 credit load. Students who wish to take advantage of the Concurrent Studies program will register as Special students. Students who do not achieve the minimum final grade required to advance to the next level of an ESLA course after three attempts will not be permitted to register in any credit courses for one calendar year. Such students must take a SLALS-approved English language proficiency test before returning to their studies and must register according to their new placement.

Students considering a break in study of three terms or longer should contact SLALS to discuss their ESLR standing. After a break in studies, students may be required to re-take a SLALS-approved English language proficiency test before returning to their studies and register according to their new placement. To satisfy the ESLR, students must earn a grade of B- or higher in either Advanced English as a Second Language for Academic Purposes (ESLA 1900) or in Advanced English as a Second Language for Engineering Students (ESLA 1905). Students are able to satisfy this requirement at any time during the year by achieving the minimum result required on one of Carleton University’s approved English as a Second Language assessments. Refer to Option 1 for details on acceptable English language tests.

For further information regarding the English as a Second Language Requirement and admission, contact Admissions Services. For information on English as a Second Language credit courses and placement, contact the School of Linguistics and Language Studies (SLALS).

5. Dates of Entry
Students may be admitted to register in January, May and July as well as in September. (See the Academic Year section of this Calendar.)

6. Concurrent Studies
The Concurrent Studies program enables secondary school students to begin university-level study while completing any outstanding requirements for their high school diploma. The availability of the Concurrent Studies program will be of particular interest to those students in semested schools who are not taking a full load of high school credits in their final year of study. Students in non-semested high schools may also wish to take advantage of this opportunity in their final year if they are not taking a full credit load.

Students who wish to take advantage of the Concurrent Studies program will register as Special students. Special students may normally enrol in a maximum of 1.0 credit in each of the fall term, winter term and summer session. With admission to a degree program, program requirements for a degree will be reduced by the number of credits successfully completed as part of the Concurrent Studies program that are appropriate to the degree. Other universities normally grant credit on admission for courses taken at Carleton as a Special student.

7. High School Applicants
Ontario
The minimum admission requirements to be considered are:
1. the completion of the OSSD; and
2. six 4U/M courses, including specific program prerequisites.

The overall admission average and mix of 4U/M courses required is dependent upon the degree or program for which the student is applying. Detailed admission requirements for each undergraduate degree program can be found in the “Summary of Admission Requirements” following this section.

Holding the minimum admission requirements only establishes eligibility for consideration to Carleton University programs. Admission averages and required marks will vary from year to year and will be determined by the availability of places and by the number of applicants. The overall admission average may be higher than the stated minimum requirements.

Students who feel that their high school grade average does not reflect their potential are encouraged to apply to the Enriched Support Program. For more information, see the Enriched Support Program information following the Admissions section of this Calendar.

Quebec
Students from the Province of Quebec may apply for admission into first year either upon completion of the Grade 12 program or after completing work towards the Collegial diploma. (See the information on Quebec CEGEPs in this section.)

Other Canadian Provinces
Applicants to degree programs at Carleton must normally be admissible to a university in their own province.

The United States
1. Applicants who have completed Grade 12 in the United States or in a U.S. overseas school will be considered for admission to first year. The Grade 12 program must include at least four academic units, and a minimum of 16 academic units must have been completed in Grades 9 to 12.
2. An average of B- or higher is required for admission. For Honours programs and some limited enrolment programs, a higher average may be required.
3. Applicants are encouraged to submit SAT or ACT scores to supplement their application for admission to the University.

Advanced Placement (AP)
Applicants who have completed AP exams with a minimum grade of 4 will be granted appropriate advanced standing credit, subject to the discretion of the appropriate Faculty, to a maximum of 3.0 credits.

International Baccalaureate (IB)
Students applying on the basis of having completed the IB diploma must possess a minimum score of 28 points. Applicants should have completed the diploma with six subjects: three higher level (HL) and three subsidiary level (SL). Students should also include the specific subject requirements for the program for which they are applying among their higher level and subsidiary level subjects. Usually we expect prerequisite courses to be at the higher level. Students with a minimum score of 28 may be given transfer credit for higher level courses with grades of 5 or higher, to a maximum of 3.0 credits.

Other High School Systems
Applicants who have completed high school diploma requirements in other than Canadian or American high school systems will be considered for admission at the appropriate level of entry. Individuals from foreign systems of education will be considered for admission to first year only if they are able to present sufficient evidence that their secondary school background is appropriate to this level of entry with respect to academic content and level of achievement.

Generally speaking, such applicants must meet requirements for admission to a university in their own country.

8. Special Requirements for Overseas Students

Translation of Documents
The University must be in receipt of all official documents by May 1. Applicants from non-English speaking countries must arrange to submit certified English translations of their academic documents.

9. Transfers from Post-Secondary Institutions: General Information

An applicant who is attending or has attended institutions of post-secondary education must present:

1. Official certified transcripts of academic records mailed directly to this University by the registrars of the institutions attended, and
2. Applicants who have taken only one year of study past the secondary school level may be required to submit an official transcript of high school marks mailed directly to Carleton University by the high school concerned.

Credit may be received for courses taken at other recognized institutions if:

1. Courses are relevant to a student’s proposed program, and
2. The appropriate department recommends that such courses be credited to a student’s program. Each application will be evaluated on its own merits.

Please note that performance indicators other than letter or numeric grades are not acceptable for transfer credit (i.e. PSD [passed], CR [credit], EXP [ exempt], EXM [exam], etc.).

To be eligible for graduation, students transferring from other post-secondary institutions must complete a minimum number of Carleton credits. Please see Section 2.2.2 Minimum Number of Residency Credits and Section 2.2.3 Advanced Credits in the Academic Regulations of the University.

10. Transfers from Post-Secondary Institutions: Universities

Students applying from other recognized universities may be admitted if they are eligible to continue at the institution from which they wish to transfer and if they meet the requirements.

Carleton University subscribes to the following General Policy on the Transfer of Course Credits, as adopted by the Council of Ontario Universities:

Acceptance of transfer credits among Ontario universities shall be based on the recognition that, while learning experiences may differ in a variety of ways, their substance may be essentially equivalent in terms of their content and rigour. Insofar as possible, acceptance of transfer should allow for the maximum recognition of previous learning experience in university-level courses.

Subject to degree, grade and program requirements, any course offered for credit by one university shall be accepted for credit by another Ontario university when there is an essential equivalency in course content.

Please contact Carleton’s Admissions Services for information about transferring specific courses.

Students who apply for admission to an undergraduate degree program who already possess an undergraduate degree from either Carleton or another university, are required to complete a minimum number of Carleton credits. (See Sections 2.2.2 and 2.2.3 of the Academic Regulations of the University.)

11. Transfers from Post-Secondary Institutions: Ontario Colleges

Students from Ontario Colleges who have successfully completed a minimum of two terms in a two- or three-year diploma program or a four-year Applied Degree program and who present a minimum 3.0 grade point average (B standing in the Carleton University grading system) will be considered for admission to a degree program.

12. Transfers from Post-Secondary Institutions: Quebec CEGEPs

Admission Requirements

1. A CEGEP applicant who has completed successfully 12 “General” or pre-university courses will be considered for admission to first year, without advanced standing. The overall average required is dependent upon the degree or program for which the student is applying.

2. CEGEP applicants who have successfully completed more than 12 “General” or pre-university courses will be considered for admission with advanced standing.
based on the number of courses in excess of 12 and not to exceed the equivalent in credits of the first year of the program to which they are admitted. The overall average required and the advanced standing credits are dependent upon the degree or program for which the student is applying.

All applicants should note that failures in their CEGEP studies can adversely affect their admissibility.

**Subject Requirements**
Although specific subject requirements have been kept to a minimum, the following are considered necessary prerequisites for the degree program indicated:

**Bachelor of Architectural Studies**
English or *anglais*, mathematics, physics Note: a portfolio is required.

**Bachelor of Arts**
English or *anglais*

**Bachelor of Arts (Biology)**
English or *anglais*, and chemistry

**Bachelor of Cognitive Science**
English or *anglais*

**Bachelor of Commerce**
English or *anglais*, and mathematics

**Bachelor of Communication and Media Studies**
English or *anglais*

**Bachelor of Computer Science**
Mathematics

**Bachelor of Economics**
English or *anglais*, mathematics

**Bachelor of Engineering**
Mathematics, physics, chemistry

**Bachelor of Global and International Studies**
English or *anglais*

**Bachelor of Health Sciences**
Mathematics, two experimental sciences

**Bachelor of Humanities**
None specified. Note: a portfolio may be required.

**Bachelor of Humanities (Combined Honours with Biology)**
Chemistry or biology

**Bachelor of Industrial Design**
Mathematics, physics
Note: a portfolio is required and attending an information session at the School is recommended.

**Bachelor of Information Technology**
- Network Technology: mathematics
- Information Resource Management: english, mathematics
- Interactive Multimedia and Design: mathematics. A portfolio is also required.
- Photonics and Laser Technology: mathematics

**Bachelor of International Business**

**English or *anglais*, mathematics**

**Bachelor of Journalism**
English or *anglais*

**Bachelor of Journalism and Humanities**
English or *anglais*

**Bachelor of Mathematics**
Mathematics

**Bachelor of Media Production and Design**
English or *anglais*, mathematics

**Bachelor of Music**
None specified. Note: an audition is required.

**Bachelor of Public Affairs and Policy Management**
None specified.

**Bachelor of Science**
Mathematics, two experimental sciences

**13. Provisional Admission**
Some transfer applicants (those who have attended a Canadian university, an Ontario College, or a Quebec CEGEP, and have demonstrated better than average academic achievement) will automatically be considered for provisional admission. The provisional approval will be given prior to the completion of the student's current year, and will provide a detailed statement of the credits to be granted upon transfer. Admission will be confirmed upon presentation of a final transcript that indicates the successful completion of all courses with suitable standing.

**14. Mature Applicants**
Mature Applicants are persons who satisfy all of the following requirements:

1. are Canadian citizens or permanent residents of Canada, and
2. do not meet the normal admission requirements as published in this Calendar, and
3. have been away from full-time studies for a minimum of two calendar years, and
4. have not attended a university or college as full-time students.

Applicants who meet the definition of Mature Applicant will be considered for admission to programs in the Faculty of Arts and Social Sciences or in the Faculty of Public Affairs, or to a degree program in Engineering, Architecture, Computer Science, Humanities, Industrial Design, Mathematics, Science, Information Technology, or Social Work. Mature Applicants are not usually considered for admission to programs in Business, Journalism, Music, or Public Affairs and Policy Management. If, however, at the end of their first year in another degree program, they meet the requirements for one of the above-mentioned programs, they can apply to transfer to that program.
These applicants are required to submit biographical information and a transcript of their most recent studies.

Mature Applicants may be admitted to the first year of an undergraduate degree program if they have:

1. secondary school graduation in an academic program (the overall average required is dependent upon the degree or program for which the student is applying), or
2. completed, as a Special student at Carleton University, one appropriate full credit (or two half-credits) with C- or higher standing in the first attempt (or in both of the first two half-credit course attempts), or
3. other academic or work experience which, in the opinion of the admissions committee, indicates a likelihood of success at university.

Note: Persons applying for admission as Mature Applicants without the prerequisites will not normally be considered until the prerequisite subjects have been successfully completed. The prerequisite subjects (4U or equivalents) are found under Prerequisite Subjects (Section 18). All applications are reviewed on an individual basis.

Admission to the Faculty of Arts and Social Sciences, or to the Faculty of Public Affairs
Mature Applicants will normally be admitted to the first year of a B.A. or B.Co.M.S. or B.G.In.S. or B.MPD or B.Econ degree program in the Faculties of Arts and Social Sciences or Public Affairs and Management, or the first year of the undergraduate degree program in Humanities or Social Work.

Admission to the Schools of Architecture, Computer Science, and Industrial Design
Mature Applicants can be considered for admission to the first year in the Schools of Architecture, Computer Science, or Industrial Design. The required prerequisite subjects (4U or equivalents) for Architectural Studies, Computer Science, and for Industrial Design are found under Prerequisite Subjects at the end of this section.

Persons applying for admission to these undergraduate degree programs without the prerequisites will not normally be considered until the prerequisite subjects have been successfully completed. All applications are reviewed on an individual basis.

Admission to the Faculty of Engineering
Mature Applicants can be considered for admission to first year of a degree program in the Faculty of Engineering. The required prerequisite subjects (4U or equivalent) for Engineering are found under Prerequisite Subjects at the end of this section. A grade of 60 percent or higher is required in each prerequisite subject.

Persons applying for admission to this undergraduate degree program without the necessary prerequisites will not normally be considered until the prerequisite subjects have been successfully completed. All applications are reviewed on an individual basis.

Admission to the Faculty of Science
Mature Applicants can be considered for admission to the first year of a program in the Faculty of Science. The required prerequisite subjects (4U or equivalent) for Science are found under Prerequisite Subjects at the end of this section.

Persons applying for admission to this undergraduate degree program without the necessary prerequisites will not normally be considered until the prerequisite subjects have been successfully completed. All applications are reviewed on an individual basis.

Mature Applicants are not usually considered for admission to Honours programs in Science. If, however, at the end of the first year of a 15.0 credit program, they meet the requirements for one of the Honours programs, they can apply to transfer to that program.

Admission to the Bachelor of Information Technology
Mature Applicants can be considered for admission to first year of the Bachelor of Information Technology. The required prerequisite subjects (4U or equivalent) for BIT are found under Prerequisite Subjects at the end of this section.

Special Students Wishing to Apply as Mature Applicants
Special students who meet all of the criteria for Mature Applicants can be considered for admission as Mature Applicants if:

1. they have completed, as a Special student, at Carleton University, one appropriate full credit (or two half-credits) with C- or higher standing in the first attempt (or in both of the first two half-credit attempts), or
2. they are eligible to continue as Special students at Carleton University, and
3. they have completed any additional degree program prerequisite subjects that may be required for a particular program.

Mature Applicants who, as Special students at Carleton University, have not obtained a grade of C- or higher in one full credit (or two half-credits), in the first attempt (or in both of the first two half-credit attempts), can attempt to qualify for subsequent admission through additional courses as a Special student at the University.

Individuals seeking admission under the Mature Applicant status who need further information should inquire at Admissions Services.

15. Special Studies (Non-Degree)
Special students may be admitted to a degree program if their academic achievement at Carleton University indicates a reasonable probability of future academic success. Previous post-secondary studies at other institutions will also be taken into consideration at the time the application for admission is evaluated. Students with previous, unsuccessful post-secondary studies should contact Admissions Services before attempting to qualify for admission on the basis of studies as a Special student.

In the Faculty of Arts and Social Sciences, Faculty of Public Affairs, and Faculty of Science, a Special student can normally be considered for admission to a General
degree program after completing 4.0 credits (or the equivalent), and if the student would be in Good Standing if admitted. Students seeking admission are usually not considered for admission until the necessary prerequisites have been successfully completed in addition to the 4.0 approved credits (or the equivalent). The prerequisite subjects (4U/4M courses or equivalents) are found at the end of this section under Prerequisite Subjects.

If fewer than 4.0 credits have been completed, a Special student will be considered for admission after completion of:

- 2.0 credits (or the equivalent) with a CGPA of 8.00 or higher, or
- 2.5 credits (or the equivalent) with a CGPA of 7.00 or higher, or
- 3.0 credits (or the equivalent) with a CGPA of 6.00 or higher, or
- 3.5 credits (or the equivalent) with a CGPA of 5.00 or higher

Special students wishing to apply for admission to the Faculty of Engineering, or the Schools of Architecture, Business, Computer Science, Industrial Design, Information Technology, Journalism, or Social Work, are urged to consult with Admissions Services.

16. Prerequisite Subjects
Certain degree programs require grade 4U courses (prerequisite subjects) or the equivalent as follows: (See Summary of Admission Requirements following this section for specific minimum averages and required marks.)

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<thead>
<tr>
<th>B.A., all majors</th>
<th>English</th>
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<tbody>
<tr>
<td>B.A. Biology</td>
<td>Chemistry</td>
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<tr>
<td>B. Architectural Studies</td>
<td>English, Physics</td>
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<td>Advanced functions or calculus and vectors</td>
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<td>Note: a portfolio is required.</td>
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<tr>
<td>B. Cognitive Science</td>
<td>English</td>
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<td>B. Commerce</td>
<td>Advanced functions</td>
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<td>Calculus and vectors or mathematics for data management</td>
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<td></td>
<td>English</td>
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<tr>
<td>B. Communication and Media Studies</td>
<td>English</td>
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<tr>
<td>B. Computer Science</td>
<td>Advanced functions and calculus and vectors</td>
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<tr>
<td>B. Economics</td>
<td>English, Advanced functions</td>
</tr>
<tr>
<td>B. Engineering</td>
<td>Advanced functions</td>
</tr>
<tr>
<td></td>
<td>Chemistry, Physics</td>
</tr>
</tbody>
</table>

And one of: calculus and vectors or biology or earth and space science

B. Global and International Studies
- English

B. Health Sciences (Honours)
- Advanced functions and two of: biology, chemistry, earth and space science, physics

B. Humanities (combined Honours with Biology)
- Chemistry or biology

B. Industrial Design
- Advanced functions
- Physics

Note: a portfolio is required and attending an information session at the School is recommended.

B. Information Technology
- Interactive Multimedia and Design
  - Advanced functions
- Note: a portfolio is required.

B. International Business
- Advanced functions
- Calculus and vectors or mathematics for data management
- English

B. Journalism
- English

B. Journalism and Humanities
- English

B. Mathematics
- Advanced functions
- Calculus and vectors

B. Media Production and Design
- English and one of: advanced functions or calculus and vectors or mathematics of data management

B. Science (Honours)
- Advanced functions and two of: biology, chemistry, earth and space science, physics

B. Science (15.0 credit/Major)
- Advanced functions and two of: calculus and vectors, biology, chemistry, earth and space science, physics

17. Previous Carleton Degree Students
All former students who have been formally admitted to a degree or diploma or certificate program at the undergraduate level and who are seeking readmission either to that program or to another program are governed by differing regulations, depending upon the faculty or school that offers the program.
Please refer to the relevant program section of this Calendar or, if there is no specific entry dealing with readmission in that section, consult the Registrar's Office to determine whether or not it is necessary to submit a new application for admission. Please note that previous Carleton students applying to limited enrolment programs must apply by the published deadlines.

18. Documents

Documents submitted in support of an application for admission become the property of the University. Carleton University retains electronic students files for all students admitted for the 2014 summer term and beyond. Original documents that have been digitized for inclusion in the student's file are destroyed in compliance with the University's privacy policies. In some cases, original documents may be returned to the applicant. Contact Admissions Services for more information.

The University may nullify an admission and revoke a registration if it finds that an applicant for admission or registration has, in the process, provided false or incomplete information.

Applicants who are unable to submit documents of previous academic studies as a result of natural disaster, armed conflict, or the securing of refugee status are subject to the following policy:

- Applicants who are unable to submit supporting documents will not be admitted. They will be encouraged to register as Special students and qualify for admission by taking courses at the University.
- Applicants who can submit official transcripts but cannot submit course descriptions will be admitted to first year if:
  - their academic record meets the standards required by the program for which they are applying, and
  - their high school studies include prerequisite subjects for admission to first year.
- Applications from candidates who can provide course descriptions based on their recollection of the courses which they have taken will be treated according to the same procedures as those which apply to applicants who cannot submit course descriptions (see 2. above).

Bachelor of Architectural Studies

B.A.S. (All) 

The following additions and amendments apply to all B.A.S. programs:

1. Students are assessed at each Academic Performance Evaluation using the Core minimum as described below.
2. Good Standing requires a minimum grade of C- in each B.A.S. Core course.
3. The B.A.S. Core Courses consist of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCS 1005 [0.5]</td>
<td>Drawing</td>
</tr>
<tr>
<td>ARCS 1105 [1.0]</td>
<td>Studio 1</td>
</tr>
<tr>
<td>ARCS 2105 [1.5]</td>
<td>Studio 2</td>
</tr>
<tr>
<td>ARCS 2106 [1.5]</td>
<td>Studio 3</td>
</tr>
<tr>
<td>ARCS 3105 [1.5]</td>
<td>Studio 4</td>
</tr>
<tr>
<td>ARCS 3107 [1.0]</td>
<td>Studio 5</td>
</tr>
<tr>
<td>ARCS 4105 [1.5]</td>
<td>Comprehensive Studio</td>
</tr>
<tr>
<td>ARCS 4107 [1.0]</td>
<td>Option Studio</td>
</tr>
</tbody>
</table>

B.A.S. Design

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCS 1005 [0.5]</td>
<td>Drawing</td>
</tr>
<tr>
<td>ARCS 1105 [1.0]</td>
<td>Studio 1</td>
</tr>
<tr>
<td>ARCS 2105 [1.5]</td>
<td>Studio 2</td>
</tr>
<tr>
<td>ARCS 2106 [1.5]</td>
<td>Studio 3</td>
</tr>
<tr>
<td>ARCS 3105 [1.5]</td>
<td>Studio 4</td>
</tr>
<tr>
<td>ARCS 3107 [1.0]</td>
<td>Studio 5</td>
</tr>
<tr>
<td>ARCS 4105 [1.5]</td>
<td>Comprehensive Studio</td>
</tr>
<tr>
<td>ARCS 4107 [1.0]</td>
<td>Option Studio</td>
</tr>
</tbody>
</table>

B.A.S. Urbanism

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCS 1005 [0.5]</td>
<td>Drawing</td>
</tr>
<tr>
<td>ARCS 1105 [1.0]</td>
<td>Studio 1</td>
</tr>
<tr>
<td>ARCS 2303 [1.0]</td>
<td>Urbanism Studio 1: Fundamentals of Urbanism</td>
</tr>
<tr>
<td>ARCS 3303 [1.0]</td>
<td>Urbanism Studio 2: Urbanism in the Core</td>
</tr>
<tr>
<td>ARCS 3304 [1.0]</td>
<td>Urbanism Studio 3: Urbanism on the Periphery</td>
</tr>
<tr>
<td>ARCS 4105 [1.5]</td>
<td>Comprehensive Studio</td>
</tr>
<tr>
<td>ARCS 4304 [1.0]</td>
<td>Urbanism Studio 5: Global Perspectives</td>
</tr>
</tbody>
</table>

B.A.S. Conservation and Sustainability

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCS 1005 [0.5]</td>
<td>Drawing</td>
</tr>
<tr>
<td>ARCS 1105 [1.0]</td>
<td>Studio 1</td>
</tr>
<tr>
<td>ARCS 2302 [1.0]</td>
<td>Conservation Studio 1</td>
</tr>
<tr>
<td>ARCS 3301 [1.0]</td>
<td>Conservation Studio 2</td>
</tr>
<tr>
<td>ARCS 3302 [1.0]</td>
<td>Conservation Studio 3</td>
</tr>
<tr>
<td>ARCS 4301 [1.5]</td>
<td>Conservation Studio 4</td>
</tr>
<tr>
<td>ARCC 3502 [0.5]</td>
<td>Introduction to Architectural Conservation</td>
</tr>
</tbody>
</table>

4. B.A.S. students continue either in Good Standing or on Academic Warning.
5. Students whose academic performance evaluation results in Suspension must leave the B.A.S. degree. Application for readmission to all B.A.S. programs may be made after one year.

Bachelor of Arts

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).
First-Year Seminars
B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement
Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOL, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOH, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAN, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any...
specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfill the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

### Bachelor of Cognitive Science

#### Academic Regulations and Requirements for the Bachelor of Cognitive Science Degree

The regulations presented below apply to all Bachelor of Cognitive Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

#### First-Year Seminars

B.Cog.Sc. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM (one 1.0-credit FYSM or two 0.5-credit FYSM’s) and can only register in a FYSM while they have first-year standing in their B.Cog.Sc. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

### Change of Program Within the B.Cog.Sc. Degree

Students may transfer to a program within the B.Cog.Sc. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.Cog.Sc. Degree at the Registrar’s Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

#### Minors, Concentrations and Specializations

Students may apply to the Registrar’s Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in the B.Cog.Sc. may earn the notation Mention: Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below.

Students in the B.Cog.Sc. Honours program must present:

1. 1.0 credit in the French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level taken in French. These credits may come from any of Philosophy, Psychology, Computer Science, Linguistics, Neuroscience, or Cognitive Science, without restriction.

Students in the B.Cog.Sc. program must present:

1. 1.0 credit in the French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level taken in French. This credit may come from any of Philosophy, Psychology, Computer Science, Linguistics, Neuroscience, or Cognitive Science, without restriction.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the
University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Commerce**

**Degree**
- Bachelor of Commerce (B.Com.) (Honours)
- Bachelor of Commerce (B.Com.)

**Admission Requirements**

**First Year**

**Bachelor of Commerce (B.Com.) (Honours)**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English, Advanced Functions, and Calculus and Vectors. Applicants who do not present with Calculus and Vectors must successfully complete MATH 0009 at Carleton in the Fall semester of first year in order to be eligible to continue.

For applicants whose first language is not English, the requirement of 4U English can also be met under the conditions outlined in the English Language Requirements of the Admissions Requirements and Procedures section of this Calendar.

**Bachelor of Commerce (B.Com.)**
No direct entry; access is restricted.

**Advanced Standing**

**Bachelor of Commerce (B.Com.) (Honours)**
Applications for admission to the second or subsequent years will be assessed on their merits. Students must present a major CGPA of 6.50 (C+/B-) or higher, and an overall CGPA of 8.00 (B) or higher. Advanced standing will be granted only for those courses that are determined to be appropriate. Students will not receive credit for courses graded below C-.

Current Carleton students may also be assessed for admission to second and subsequent years if they present BUSI 1001 and BUSI 1002 with an average of 8.0 or higher (with no individual grade below C+) and a major CGPA of 6.50 (C+/B-) or higher.

Applications by B.I.B. (Honours) students for admission to the second or subsequent years of B.Com. (Honours) will be assessed on their merits. Students must present a major CGPA and an overall CGPA consistent with the Academic Performance Evaluation requirements for B.Com. (Honours) students. Advanced standing will be granted for those courses determined to be appropriate.

**Bachelor of Commerce (B.Com.)**
No direct entry. Access is restricted to students in the Bachelor of Commerce (Honours) and Bachelor of International Business (Honours). (See Regulations for Business.)

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Commerce (Honours) program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Communication and Media Studies**

**Degrees**
- Bachelor of Communication and Media Studies (Honours)
- Bachelor of Communication and Media Studies

**Admission Requirements**

**First Year**

**B. Co.M.S. (Honours)**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section English Language Requirements in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

**B. Co.M.S.**
Access to the B.Co.M.S. degree is limited to B.Co.M.S. (Honours) students who apply to transfer.

**Advanced Standing**

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Communication and Media Studies (Honours);
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

## Computer Science

### Degree
- B.C.S. (Major)
- B.C.S. (Honours)

### Admission Requirements

#### First Year
The Ontario Secondary School Diploma (OSSD) or equivalent, including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and Calculus and Vectors.

#### Advanced Standing
Applications for admission beyond first year will be assessed on their individual merits. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected. Students will not receive credit for courses graded below C-.

#### Co-op Option

### Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Computer Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

## Economics

### Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

### Degree
- Bachelor of Economics (B.Econ.) (Honours)

### Admission Requirements

#### First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*) as well as 4U Advanced Functions or MATH 0005. In addition, 4U Calculus and Vectors or MATH 0107 is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum. For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

#### Advanced Standing
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

#### Co-op Option

### Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in a Bachelor of Economics Honours program;
3. be eligible to work in Canada (for off-campus work placements).
Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Bachelor of Engineering Degree

Regulations
The regulations presented in this section apply to all Bachelor of Engineering programs.

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar), with the following additions and amendments:

Academic Performance Evaluation for Engineering
1. In Engineering programs, all credits are included in the Major CGPA, making it identical to the Overall CGPA.
2. Students who are not assigned the status Good Standing or Academic Warning will be required to leave the degree with either the status Continue in Alternate (CA) or the status Dismissed from Program (DP).

Graduation
Students in Engineering programs are covered by the common University regulations regarding graduation, with the following additions and amendments:
1. Students entering an Engineering program with Advanced Standing will receive transfer credit for at most ten of the credits required for their program.
2. To be eligible for graduation, the most recent grade in every course used to meet the requirements of the Bachelor of Engineering degree must be a passing grade.

Course Load
Regulations regarding Course Load and Overload can be found in the Academic Regulations of the University section of this Calendar. The normal course load in Engineering is defined as the number of credits required in the student's program for the current year status of the students. Since the programs in Engineering require more than 20.0 credits in total, the normal course load is more than 5.0 credits in some years of the program. Registration in more than this number of credits constitutes an overload.

Co-operative Education Programs
All Engineering programs are available with or without participation in the Co-operative Education option.

Year Status Prerequisites
Year Status in Engineering is used in some course prerequisites to limit access to only those students who have sufficient preparation. In particular, students will not have access to second, third or fourth year engineering, science or mathematics courses until they have achieved second year status. Similarly, to take some specific engineering, science and mathematics courses in third or fourth year, that year status must be achieved. For additional information on prerequisites, see the individual course descriptions.

2nd year: Students may not continue into 2000-level (or higher) engineering courses unless all the following requirements are met:
1. Successful completion of all ECOR 1040 series of courses with a minimum grade of C-,
2. Successful completion of all ECOR 1050 series of courses,
3. Successful completion of MATH 1004, MATH 1104, CHEM 1001 (or CHEM 1001 and CHEM 1002), and PHYS 1004 (or PHYS 1001 and PHYS 1002),
4. Successful completion of all English as a Second Language Requirements, and any additional requirements as determined in the admission process.

3rd year: Students may not take courses with third-year status in Engineering as a prerequisite until successful completion of 4.0 credits from the second-year requirements of their current program.

4th year: Students may not take courses with fourth-year status in Engineering as a prerequisite until successful completion of all second-year requirements and successful completion of 3.5 credits from the third-year requirements of their current program.

Time Limit
The Bachelor of Engineering degree must be completed within eight calendar years of initial registration. Students who do not complete their program requirements within this limit will be given the status Continue in Alternate.

Academic Appeals
The Engineering Committee on Admission and Studies handles all academic appeals.

Global and International Studies

B.G.In.S. Regulations
The regulations presented in this section apply to all Bachelor of Global and International Studies programs.

In addition to the program requirements and requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars
B.G.In.S degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit of
The Bachelor of Humanities and Biology option must include 4U Chemistry or 4U Biology.

Note:
The overall admission cut-off average and/or prerequisite average may be considerably higher than the stated minimum requirements for admission. Applicants with lower averages may be asked to submit a portfolio in support of their application. For detailed information about the portfolio and whether you are required to submit one, please consult with the Bachelor of Humanities website. The portfolio should be submitted to the College of the Humanities, Carleton University.

Advanced Standing
Applications for admission with advanced standing to the program leading to the Bachelor of Humanities will be evaluated individually. On admission, students will not receive credit for courses graded below C-. The College also maintains a number of places in second and third year for students who wish to transfer from Carleton or elsewhere. Applications will be assessed on their merits but normally an overall CGPA of 8.0 (B) or higher is required. On admission, students will not receive credit for courses graded below C-.

Bachelor of Industrial Design

Regulations
The regulations presented in this section apply to all students in the Bachelor of Industrial Design program.

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

Year Status and General Prerequisites
In the Bachelor of Industrial Design degree program, year status is defined as follows:

1st year: Admission to the program.
2nd year: Successful completion of IDES 1001, IDES 1301 and must not be deficient in any more than one of the other first year courses.
3rd year: Successful completion of IDES 2302 and all first and second year course requirements.
4th year: Successful completion of IDES 3302 and all third year course requirements.

Bachelor of Information Technology

Regulations
The regulations presented in this section apply to all students in the Bachelor of Information Technology program.

In addition to the program requirements, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).
Joint Status
A student registered in the BIT degree has student status at both Algonquin College and Carleton University. At Algonquin College the student is considered to be a post-secondary student; at Carleton University, the student is considered to be a degree student. Students registered in the BIT degree have access to all student services on the Carleton University campus and selected services on the Algonquin College campus.

Academic Regulations
The academic regulations governing the B.I.T. are the academic regulations of Carleton University. These regulations are defined in full in the Academic Regulations of the University section of this Calendar and apply to B.I.T. students on both campuses. Within the context of these regulations, B.I.T. is considered to be a non-honours degree with a defined Major CGPA and requires 20.0 credits. Courses with the designations BIT, NET or IMD are not normally transferable to Engineering, Computer Science or other programs at Carleton University.

Students should note that there are significant differences between the academic regulations of Carleton University and Algonquin College; it is the regulations of Carleton University that apply in all cases as related both to course registrations and program rules.

At Carleton University, the chief examination officer of the BIT is the Dean of Engineering and Design. At Algonquin College, grades are approved by the Dean of the respective School.

Graduation
In order to graduate with the Bachelor of Information Technology Degree and the Advanced Diploma of Technology or Advanced Diploma of Applied Arts, the student must:

1. satisfy all requirements for the program of study;
2. be recommended for graduation by Bachelor of Information Technology Academic Council;
3. be approved for graduation by the Senate of Carleton University;
4. be approved for graduation by the Registrar of Algonquin College.

Discipline
The regulations, procedures and sanctions that apply to student discipline on either campus, both concerning Instructional Offences and Offences of Conduct are those of Carleton University and are described in the Carleton University Undergraduate Calendar. However, while students are on Algonquin’s campus, they are expected to follow Algonquin’s Directives regarding Student Misconduct and Use of Electronic Devices.

International Business

Degree
• Bachelor of International Business (B.I.B.) (Honours)

Admission Requirements
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English, Advanced Functions, and Calculus and Vectors. Applicants who do not present with Calculus and Vectors must successfully complete MATH 0009 at Carleton in the Fall semester of first year in order to be eligible to continue.

For applicants whose first language is not English, the requirement of 4U English can also be met under the conditions outlined in “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

Advanced Standing
Applications for admission to second and subsequent years will be assessed on their merits, subject to available spaces. Advanced standing will be granted only for those courses that are determined to be appropriate. Students must present an Overall CGPA of 8.0 (equivalent to B average) or better. Students will not receive credit for courses with grades below C-.

Applications by B.Com. students for admission to the second or subsequent years of B.I.B. will be assessed on their merits. Students must present a major CGPA and an overall CGPA consistent with the Academic Performance Evaluation requirements for B.I.B. students. Advanced standing will be granted for those courses determined to be appropriate.

The design of the B.I.B. program is premised on a full year of study abroad (at third year) after the preparations leading to it are successfully completed at Carleton. Students who are admitted with advanced standing may need to delay the third-year abroad requirements until first and second year curricula are completed and consequently delay graduation.

Some transferred credits (normally electives) may have to be forfeited in order to meet the Third-year Study Abroad Requirement of minimum 4.0 credits completed during year abroad.

Journalism

Degree
• B.J. (Honours)

Admission Requirements
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English. The Bachelor of Journalism with a Concentration in Health Sciences must also include 4U Chemistry or 4U Biology.

Note: Students who already hold an undergraduate degree in another field are not eligible to apply for the B.J. (Honours) program. These students should consult the information on the Master of Journalism or the Master of
Arts in Communication in the Faculty of Graduate Studies and Research Calendar.

Advanced Standing
The School also maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA of 10.00 (A-) or higher.

Journalism and Humanities

Degree
- Bachelor of Journalism and Humanities (B.J.Hum.) (Honours)

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include 4U English.

Note: students who already hold an undergraduate degree are not eligible to apply for the B.J.Hum. (Honours).

Advanced Standing
The B.J.Hum. (Honours) maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Transfers into higher years will not be considered.

Normally, offers are made to students with an overall CGPA of 10.00 (A-) or higher.

Mathematics and Statistics

Degree
- Bachelor of Mathematics (B. Math.) (Honours)
- Bachelor of Mathematics (B.Math.)

Admission Requirements
B.Math Honours Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include two prerequisite courses (Advanced Functions and Calculus and Vectors).

The overall admission cut-off average and/or the prerequisite course average may be considerably higher than the stated minimum requirements for admission to the combined B.Math/M.Sc in Mathematics or Statistics.

Advanced Standing
Applications for admission beyond first year will be assessed on their individual merits. Applicants must normally be in Good Standing (see Undergraduate Calendar Section 3.0 - Academic Regulations for Degree Students) for their year level. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Mathematics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Media Production and Design

Degree
- Bachelor of Media Production and Design (B.M.P.D. Honours)

Admission Requirements
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English and one of Advanced Functions or Calculus and Vectors or Mathematics of Data Management. Advanced Functions is recommended.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;

2. be registered as a full-time student in the Bachelor of Media Production and Design program;

3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Music

Degree

• B.Mus. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

Although it is not an admission requirement, a 4U course in English is recommended.

Note: An audition is required.

Advanced Standing

Students transferring into the Bachelor of Music with first, second, or third year standing must have achieved a major CGPA of 6.00 (C+) or higher and an overall CGPA of 5.00 (C) or higher. Students beginning the final 5.0 credits towards the Bachelor of Music degree must have achieved a major CGPA of 6.50 (C+/B-) or higher and an overall CGPA of 5.00 (C) or higher.

Public Affairs and Policy Management

Degree

• B.P.A.P.M.

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

Advanced Standing

Applications for admission with advanced standing to the program will be evaluated individually by the Program Management Committee. Advanced standing will be granted only for those courses deemed to be appropriate to the program. On admission, students will not receive credit for courses graded below C-.

Continuation to second year will be guaranteed only to those students who have an overall CGPA of 7.00 or higher and a grade of B- or higher in PAPM 1001.

Co-op Option

Direct Admission to the first year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;

2. be registered as a full-time student in the B.P.A.P.M. program;

3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Bachelor of Science Degree

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors

2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.

2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI
1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Department</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>CHEM 1001</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 1002</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 1005</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 1006</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2103</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2203</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2204</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2302</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2303</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2800</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
<tr>
<td>Earth Sciences</td>
<td>ERTH 1006</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td></td>
<td>ERTH 1009</td>
<td>The Earth System Through Time</td>
</tr>
<tr>
<td></td>
<td>ERTH 2102</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td></td>
<td>ERTH 2404</td>
<td>Engineering Geoscience</td>
</tr>
<tr>
<td></td>
<td>ERTH 2802</td>
<td>Field Geology I</td>
</tr>
<tr>
<td></td>
<td>ERTH 3111</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
</tr>
<tr>
<td></td>
<td>ERTH 3112</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td></td>
<td>ERTH 3204</td>
<td>Mineral Deposits</td>
</tr>
<tr>
<td></td>
<td>ERTH 3205</td>
<td>Physical Hydrogeology</td>
</tr>
<tr>
<td></td>
<td>ERTH 3806</td>
<td>Structural Geology</td>
</tr>
<tr>
<td>Food Sciences</td>
<td>FOOD 3001</td>
<td>Food Chemistry</td>
</tr>
<tr>
<td></td>
<td>FOOD 3002</td>
<td>Food Analysis</td>
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<tr>
<td></td>
<td>FOOD 3005</td>
<td>Food Microbiology</td>
</tr>
<tr>
<td>Geography</td>
<td>GEOG 1010</td>
<td>Global Environmental Systems</td>
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<tr>
<td></td>
<td>GEOG 3108</td>
<td>Soil Properties</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>NEUR 3206</td>
<td>Sensory and Motor Neuroscience</td>
</tr>
<tr>
<td></td>
<td>NEUR 3207</td>
<td>Systems Neuroscience</td>
</tr>
<tr>
<td></td>
<td>NEUR 4600</td>
<td>Advanced Lab in Neuroanatomy</td>
</tr>
<tr>
<td>Physics</td>
<td>PHYS 1001</td>
<td>Foundations of Physics I</td>
</tr>
<tr>
<td></td>
<td>PHYS 1002</td>
<td>Foundations of Physics II</td>
</tr>
<tr>
<td></td>
<td>PHYS 1003</td>
<td>Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td></td>
<td>PHYS 1004</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td></td>
<td>PHYS 1007</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td></td>
<td>PHYS 1008</td>
<td>Elementary University Physics II</td>
</tr>
<tr>
<td></td>
<td>PHYS 2202</td>
<td>Wave Motion and Optics</td>
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<td></td>
<td>PHYS 2604</td>
<td>Modern Physics I</td>
</tr>
<tr>
<td></td>
<td>PHYS 3007</td>
<td>Third Year Physics Laboratory: Selected Experiments and Seminars</td>
</tr>
<tr>
<td></td>
<td>PHYS 3606</td>
<td>Modern Physics II</td>
</tr>
<tr>
<td></td>
<td>PHYS 3608</td>
<td>Modern Applied Physics</td>
</tr>
</tbody>
</table>
### Course Categories for B.Sc. Programs

#### Science Geography Courses
- **GEOG 1010 [0.5]** Global Environmental Systems
- **GEOG 2006 [0.5]** Introduction to Quantitative Research
- **GEOG 2013 [0.5]** Weather and Water
- **GEOG 3003 [0.5]** Quantitative Geography
- **GEOG 3010 [0.5]** Field Methods in Physical Geography
- **GEOG 3102 [0.5]** Geomorphology
- **GEOG 3103 [0.5]** Watershed Hydrology
- **GEOG 3104 [0.5]** Principles of Biogeography
- **GEOG 3105 [0.5]** Climate and Atmospheric Change
- **GEOG 3106 [0.5]** Aquatic Science and Management
- **GEOG 4000 [0.5]** Soil Properties
- **GEOG 4005 [0.5]** Field Studies
- **GEOG 4013 [0.5]** Directed Studies in Geography
- **GEOG 4017 [0.5]** Global Biogeochemical Cycles
- **GEOG 4101 [0.5]** Two Million Years of Environmental Change
- **GEOG 4102 [0.5]** Water Resources Engineering
- **GEOG 4103 [0.5]** Microclimatology
- **GEOG 4108 [0.5]** Permafrost

#### Science Psychology Courses
- **PSYC 2001 [0.5]** Introduction to Research Methods in Psychology
- **PSYC 2002 [0.5]** Introduction to Statistics in Psychology
- **PSYC 2700 [0.5]** Introduction to Cognitive Psychology
- **PSYC 3000 [1.0]** Design and Analysis in Psychological Research
- **PSYC 3506 [0.5]** Cognitive Development
- **PSYC 3700 [1.0]** Cognition (Honours Seminar)
- **PSYC 3702 [0.5]** Perception
- **PSYC 2307 [0.5]** Human Neuropsychology I
- **PSYC 3307 [0.5]** Human Neuropsychology II

#### Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student’s major discipline, and is chosen from the following:

- **BIOC (Biochemistry)**
- **BIOL (Biology)** Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- **CHEM (Chemistry)** except CHEM 1003, CHEM 1004 and CHEM 1007
- **COMP (Computer Science)** except COMP 1001
- **ERTH (Earth Sciences)** except EERTH 2415, except EERTH 2415, except EERTH 2415, except EERTH 2415.
- **HLTH (Health Sciences)** except HLTH 1010, HLTH 2415, and HLTH 2415.
- **ISAP (Interdisciplinary Science Practice)**
- **MATH (Mathematics)**
- **NEUR (Neuroscience)**
- **PHYS (Physics)** except PHYS 1010, PHYS 1902, PHYS 1905, PHYS 2903
- **STAT (Statistics)**
- **TSES (Technology, Society, Environment)** Biology students may use these courses only as free electives.

#### Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from:

- **ENS (Environmental Science)**
- **FOOD (Food Science and Nutrition)**
- **GEOM (Geomatics)**
- **HLTH (Health Sciences)**
- **ISAP (Interdisciplinary Science Practice)**
- **MATH (Mathematics)**
- **NEUR (Neuroscience)**
- **PHYS (Physics)** except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
- **STAT (Statistics)**
- **TSES (Technology, Society, Environment)** Biology students may use these courses only as free electives.

#### Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

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All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives
Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 4810</td>
<td>0.5</td>
<td>Education Research in Biology</td>
</tr>
<tr>
<td>CHEM 1003</td>
<td>0.5</td>
<td>The Chemistry of Food, Health and Drugs</td>
</tr>
<tr>
<td>CHEM 1004</td>
<td>0.5</td>
<td>Drugs and the Human Body</td>
</tr>
<tr>
<td>CHEM 1007</td>
<td>0.5</td>
<td>Chemistry of Art and Artifacts</td>
</tr>
<tr>
<td>ERTH 1010</td>
<td>0.5</td>
<td>Our Dynamic Planet Earth</td>
</tr>
<tr>
<td>ERTH 1011</td>
<td>0.5</td>
<td>Evolution of the Earth</td>
</tr>
<tr>
<td>ERTH 2415</td>
<td>0.5</td>
<td>Natural Disasters</td>
</tr>
<tr>
<td>ISCI 1001</td>
<td>0.5</td>
<td>Introduction to the Environment</td>
</tr>
<tr>
<td>ISCI 2000</td>
<td>0.5</td>
<td>Natural Laws</td>
</tr>
<tr>
<td>ISCI 2002</td>
<td>0.5</td>
<td>Human Impacts on the Environment</td>
</tr>
<tr>
<td>MATH 0107</td>
<td>0.5</td>
<td>Algebra and Geometry</td>
</tr>
<tr>
<td>PHYS 1901</td>
<td>0.5</td>
<td>Planetary Astronomy</td>
</tr>
<tr>
<td>PHYS 1902</td>
<td>0.5</td>
<td>From our Star to the Cosmos</td>
</tr>
<tr>
<td>PHYS 1905</td>
<td>0.5</td>
<td>Physics Behind Everyday Life</td>
</tr>
<tr>
<td>PHYS 2903</td>
<td>0.5</td>
<td>Physics Towards the Future</td>
</tr>
</tbody>
</table>

Prohibited Courses
The following courses are not acceptable for credit in any B.Sc. program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1001</td>
<td>0.5</td>
<td>Introduction to Computational Thinking for Arts and Social Science Students</td>
<td></td>
</tr>
<tr>
<td>MATH 0005</td>
<td>0.5</td>
<td>Precalculus: Functions and Graphs</td>
<td></td>
</tr>
<tr>
<td>MATH 0006</td>
<td>0.5</td>
<td>Precalculus: Trigonometric Functions and Complex Numbers</td>
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</tr>
<tr>
<td>MATH 1009</td>
<td>0.5</td>
<td>Mathematics for Business</td>
<td></td>
</tr>
<tr>
<td>MATH 1119</td>
<td>0.5</td>
<td>Linear Algebra: with Applications to Business</td>
<td></td>
</tr>
<tr>
<td>MATH 1401</td>
<td>0.5</td>
<td>Elementary Mathematics for Economics I</td>
<td></td>
</tr>
<tr>
<td>MATH 1402</td>
<td>0.5</td>
<td>Elementary Mathematics for Economics II</td>
<td></td>
</tr>
</tbody>
</table>

Social Work

Degree
• B.S.W. (Honours)

Admission Requirements
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

Although it is not an admission requirement, a 4U course in English is strongly recommended. Preference will be given to applicants with human service work experience, which may be met by employment and/or volunteer experience. Applicants will be requested to complete a personal information document that will assist in the evaluation of their suitability for the program.

Advanced Standing
Students who meet the Faculty Honours continuation standards will be considered for transfer into the second year of the B.S.W. program when spaces are available. Students who have completed an undergraduate degree are normally admitted into the program with Third-year standing.

Community College Applicants
Articulation agreements between the School of Social Work at Carleton University and several community colleges have been negotiated to facilitate the application of their graduates in their human or social service worker programs to Carleton's Bachelor of Social Work. Agreements have been established with Algonquin College, Sir Sandford Fleming College and St. Lawrence College (Cornwall and Kingston). Contact the School for more details.

Certificate in Carillon Studies

Admission Requirements
To be eligible for admission to the Certificate in Carillon Studies, applicants must have:

• Successful audition (a minimum piano proficiency level equivalent to Royal Conservatory of Music Grade 9 is expected);
• Grade II Theory Rudiments, Royal Conservatory of Music (or equivalent);
• Approval of the relevant SSAC/Music Associate Performance Instructor (normally the Dominion Carillonneur);
• Approval of the Music Program.

Certificate in Multidisciplinary Studies in Mental Health and Well-Being

Admission Requirements
To be eligible for admission to the Certificate in Multidisciplinary Studies in Mental Health and Well-Being, applicants must:

• have successfully completed any undergraduate degree, or;
• meet the admission requirements for the Bachelor of Arts, or;
• be currently enrolled and in Good Standing in any degree offered at Carleton

Note: Students who are currently enrolled in, or have graduated from, a degree in Psychology with the Stream in Mental Health and Well-Being are not eligible for this program. Students who hold a degree in Psychology may be required to take additional credits to fulfill the
Certified residency requirement; see Section 2.2.2 of the Academic Regulations of the University, Minimum Number of Residency Credits.

Certificate in Nunavut Public Service Studies

Certificate
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais) with a grade of 60 percent or higher. For applicants whose first language is not English, the requirement of 4U English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar. Special consideration will be extended to other applicants under Mature Applicant regulations (see Mature and Special Admissions, in the Admissions Regulations and Procedures section of this Calendar).

Candidates may be admitted with advanced standing, but must take at least 3.0 credits for the Certificate from Carleton University.

Certificate in Professional Writing (C.P.W.)

Admission Requirements
To be eligible for admission to the Certificate in Professional Writing, applicants must present:

• Second-year standing in any Honours degree, excluding the English BA Honours Concentration in Creative Writing or the English BA Honours Concentration in Drama Studies;
• A Major CGPA of 7.5 or higher;
• A statement of purpose and a sample of their academic or professional writing, and;
• Permission of the Professional Writing Program.

Certificate in Science and Policy

Admission Requirements
To be eligible for admission to the Certificate in Science and Policy, applicants must have:

• Successfully completed a college diploma or equivalent with a minimum average grade of B, or;
• Current enrolment in an Honours degree or Bachelor of Engineering degree, with completion of a minimum of 4.0 credits, and a minimum CGPA of 7.0.

Placement in the Science or non-Science pathway will be assessed at the time of admission.

Certificate in the Teaching of English as a Second Language (CTESL)

Admission Requirements (C.T.E.S.L.)
To be eligible for admission to the 5.0 credit CTESL program students must have already obtained a degree and have extensive experience in teaching, or are registered in an Honours degree at Carleton University with an overall CGPA of 7.00 (B-) or higher. Students registered in the concurrent CTESL program who fail to complete their degree cannot receive the CTESL.

Post-Baccalaureate Diploma

Admission

• Students must normally have an undergraduate degree in the discipline or in a related discipline with an overall GPA of 8.0 or higher,
• OR admission by permission of a department, school, or institute.

Students may be required to present completed university-level courses with minimum grade requirements.

Access to Courses
Upon admission to a post-baccalaureate diploma, students may register for all diploma/discipline-specific courses without presenting prerequisite courses that are not components of the diploma. Note that for specific diplomas the permissions in courses outside of the discipline must be arranged in advance.

A co-operative education option is not available in conjunction with a post-baccalaureate diploma.

Post-Baccalaureate Diploma in Accounting

Diploma

• Post-Baccalaureate Diploma in Accounting

Normally, students are required to have completed an undergraduate degree with a minimum B- average or higher, and have completed BUSI 1004 and BUSI 1005 (or equivalent) with a grade of C or higher.

Post-Baccalaureate Diploma in Cognitive Science

Diploma

• Post-Baccalaureate Diploma in Cognitive Science

Admission to this program requires the permission of the Department of Cognitive Science. Normally, students are required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Post-Baccalaureate Diploma in Economics

Diploma

• Post-Baccalaureate Diploma in Economics
To be eligible for admission to the Post-Baccalaureate Diploma in Economics students must normally have:

1. an undergraduate degree with a GPA of 9.0 or higher, preferably with honours,
2. successfully completed university-level introductory (micro- and macro-) economics, calculus, and linear algebra with a grade of C+ or higher in each, and
3. permission of the Department of Economics.

Students may be granted advanced standing to a maximum of 1.0 credit. Advanced standing does not negate the 3.0 credit residency requirement.

Note: students who already hold an honours undergraduate degree in economics are encouraged to apply for admission to graduate programs in economics through the Graduate Admissions web site at graduate.carleton.ca.

Post-Baccalaureate Diploma in Professional Writing

Diploma
• Post-Baccalaureate Diploma in Professional Writing

To be eligible for admission to the Post-Baccalaureate Diploma in Professional Writing students must normally present an honours undergraduate degree with a GPA of 8.0 or higher.

Co-operative Education

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student’s responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit.

Students are advised to discuss the application process and requirements with the International Student Services Office.

**Co-op Admission and Continuation Requirements by Program**

**B.A. Honours Anthropology**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Anthropology Program;
2. Have a minimum overall CGPA of 7.0 and major CGPA of 8.0 in the first two years of academic study;
3. Successfully completed, by the start-date of the first work term, the required first-year courses, second-year courses, and any two of ANTH 3005, ANTH 3007 or ANTH 3008.

Students in B.A. Honours Anthropology must successfully complete three (3) work terms to obtain the Co-op designation.

**Co-op Work Term Course: ANTH 3999**

**Work/Study Pattern:**

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**Legend**

S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

**B.A. Honours English**

- Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the B.A. Honours English program;
2. Obtained and maintained an overall CGPA of 9.0 or higher at the end of second year of academic study;
3. Obtained and maintained an overall CGPA of 8.0 or higher and a major CGPA of 9.0 or higher by the end of third year of academic study.

Students in B.A. Honours English must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Report Course:** ENGL 3999

**Work/Study Pattern:**

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**Legend**

S: Study
W: Work
O: Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

**B.A. Honours Environmental Studies**

• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work);
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the B.A. Honours Environmental Studies program;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a minimum major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term:
   a. the required second-year methods courses in their program (ENST 2005, ENST 2006);
   b. the required field course in their program (ENST 3900);
5. Be registered as a full-time student.

B.A. Honours Environmental Studies students must successfully complete three (3) work terms to obtain the Co-op designation.

**Co-op work term course:** ENST 3999

**Work/Study Pattern:**

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**Legend**

S: Study
W: Work
O: Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

**B.A. Honours European and Russian Studies**

• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work);
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the B.A. Honours European and Russian Studies program;
2. Obtained and maintained an overall CGPA of 8.0 or higher and a major CGPA of 9.0 or higher;
3. Have successfully completed by the start-date of the first work term, the required first-year courses, second-year courses; have completed PSCI 3206, PSCI 3207, PSCI 3208, PSCI 3209, PSCI 3704 before the second work term; and ECON 3807 or ECON 3808 before the third work term.

Students in B.A. Honours European and Russian Studies must successfully complete three (3) work terms to obtain the Co-op designation.

**Co-op Work Term Course:** EURR 3999

**Work/Study Pattern:**

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**Legend**

S: Study
W: Work
O: Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

**B.A. Honours French**

• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work);
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the B.A. Honours in French;
2. Obtained and maintained an 8.0 CGPA overall with a minimum major CGPA of 9.0 or higher;
3. Have obtained third-year standing by the first work term;
4. Successfully completed before the second work term; and at least one 3000-level course in French.

Students in B.A. Honours French must successfully complete three (3) work terms to obtain the Co-op designation.
Co-op Work Term Course: FREN 3999
Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.A. Honours Geography
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, or B.Sc. Honours Physical Geography;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
   a. the required second-year methods courses in their program (GEOG 2005/ENST 2005, GEOG 2006/ENST 2006)
   b. the required field course in their program (ENST 3900/GEOG 3000/GEOG 3010/GEOG 3030)
5. Be registered as a full-time student.

B.A. and B.Sc. Honours Geomatics students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: GEOM 3999
Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.A. Honours Geomatics
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the Bachelor of Arts Honours or Bachelor of Science Honours in Geomatics;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
   a. the required second-year methods courses in their program (GEOG 2005/ENST 2005, GEOG 2006/ENST 2006)
   b. the required field course in their program (ENST 3900/GEOG 3000/GEOG 3010/GEOG 3030)
5. Be registered as a full-time student.

B.A. and B.Sc. Honours Geomatics students must successfully complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: HIST 3999
Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.A. Honours History
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the B.A. Honours History;
2. Obtained and maintained an overall minimum CGPA of 8.0;
3. Have obtained second-year standing;
4. Be registered as a full-time student.

Students in B.A. Honours History must successfully complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: HIST 3999
Work/Study Pattern:

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Legend
In addition to the following:

B.A. Honours Political Science

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Arts Honours - Law (Business law Concentration or Laws, Policy and Government) program;
2. Obtained an overall CGPA of 8.00 if applying to do their first work term in the summer following the second year of study;
3. Obtained and maintained an overall CGPA of 6.5 and a major CGPA of 8.0, for the purposes of entry to any work term following completion of the third year of study;
4. Completed 3.5 credits in law, including LAWS 2908, prior to their first work term. It is strongly recommended that students complete all first and second year law requirements prior to entering their first work term.

Students in B.A. Honours Law (Concentration in Business Law, Concentration in Law, Policy and Government) must successfully complete three (3) work terms to obtain the Co-op designation.

Co-operative Work Term Course: LAWS 3999

Work/Study Pattern:

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Legend

S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.A. Honours Psychology

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Have an overall minimum CGPA of 9.50 and a major CGPA of 9.5 at the end of first year of academic study;
2. Have second-year standing;
3. Have successfully completed, by the start-date of the first work term, PSYC 2001 and PSYC 2002.

Students in B.A. Honours Psychology must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: PSYC 3999

Work/Study Pattern:

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Legend

S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.A. Honours Sociology

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Sociology program;
2. Have a minimum overall CGPA of 7.0 and major CGPA of 8.0 in the first two years of academic study;
3. Successfully completed, by the start-date of the first work term, the required first-year courses, second-year courses, SOCI 2000 and SOCI 2001 or SOCI 3000

Students in B.A. Honours Sociology must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: SOCI 3999
Work/Study Pattern:

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</table>

Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Biochemistry, Computational Biochemistry
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biology and Bioinformatics students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Course: BIOL 3999
Work/Study Pattern:

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</table>

Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Biotechnology
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biotechnology students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: BIOL 3999
Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Chemistry
- Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Chemistry students must successfully complete three (3) work terms to obtain the co-op designation.

**Work Term Course:** CHEM 3999

**Work/Study Pattern:**

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**Legend**

- **S:** Study
- **W:** Work
- **O:** Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Earth Sciences

• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Earth Sciences students must successfully complete three (3) work terms to obtain the co-op designation.

**Work Term Course:** ERTH 3999

**Work/Study Pattern:**

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**Legend**

- **S:** Study
- **W:** Work
- **O:** Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Environmental Science

• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Environmental Science students must successfully complete three (3) work terms to obtain the co-op designation.

**Work Term Course:** ENSC 3999

**Work/Study Pattern:**

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**Legend**

- **S:** Study
- **W:** Work
- **O:** Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Food Science

• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the Bachelor of Science Honours in Food Science;
2. Obtained and maintained a major CGPA of 9.0 or higher and an overall CGPA of 7.5 or higher in the first three years of academic study;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term, 1.0 credit from FOOD 3001, FOOD 3002, FOOD 3005;
5. Successfully completed, by the start date of the first work term, an additional 0.5 credit in FOOD at the 3000- or 4000-level, not already counted in Item 4

B.Sc. Honours Food Science students must successfully complete three (3) work terms to obtain the co-op designation.

**Work Term Course:** FOOD 3999

**Work/Study Pattern:**

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</table>

62 The Academic Year (Graduate and Undergraduate Studies)
Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Geomatics
• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the Bachelor of Arts Honours or Bachelor of Science Honours in Geomatics;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
   a. the required second-year methods courses in their program (GEOG 2005/ENST 2005, GEOG 2006/ENST 2006)
   b. the required field course in their program (ENST 3900/GEOG 3000/GEOG 3010/GEOG 3030)
5. Be registered as a full-time student.
B.A. and B.Sc. Honours Geomatics students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: GEOM 3999
Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Geophysics
• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the Bachelor of Arts Honours or Bachelor of Science Honours in Geophysics;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
   a. the required second-year methods courses in their program (GEOG 2005/ENST 2005, GEOG 2006/ENST 2006)
   b. the required field course in their program (ENST 3900/GEOG 3000/GEOG 3010/GEOG 3030)
5. Be registered as a full-time student.
B.A. and B.Sc. Honours Geophysics students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: ENST 3999
Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Honours Interdisciplinary Science and Practice
• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student (2.0 credits) in the Bachelor of Science Honours in Interdisciplinary Science and Practice;
2. Successfully completed, by the start-date of the first work term, the following 2.0 credits: ISAP 3001, ISAP 3002, ISAP 3003, ISAP 3004.
3. Have obtained third-year standing;
4. Obtained and maintained a major CGPA of 9.0 or higher and an overall CGPA of 7.5 or higher in the first three years of academic study;
B.Sc. Honours Interdisciplinary Science and Practice students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: ISAP 3999
Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.
**S**: Study  
**W**: Work  
**O**: Optional  
* indicates recommended work study pattern  
** indicates student finds own employer for this work-term.

### B.Sc. Honours Neuroscience, Neuroscience and Mental Health
- Maintain full-time status in each study term (2.0 credits);  
- Be eligible to work in Canada (for off-campus work);  
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;  
2. Registered as a full-time student in the Bachelor of Science Honours degree program;  
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

### B.Sc. Honours Physics, Applied Physics
- Maintain full-time status in each study term (2.0 credits);  
- Be eligible to work in Canada (for off-campus work);  
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;  
2. Registered as a full-time student in the Bachelor of Science Honours degree program;  
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

### Work Term Course: NEUR 3999

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**Legend**  
**S**: Study  
**W**: Work  
**O**: Optional  
* indicates recommended work study pattern  
** indicates student finds own employer for this work-term.

### Bachelor of Architectural Studies
- Maintain full-time status in each study term (2.0 credits);  
- Be eligible to work in Canada (for off-campus work);  
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the B.A.S. program;  
2. Obtained and maintained an overall CGPA of 9.00 or higher.

Students in the Bachelor of Architectural Studies must successfully complete three (3) work terms to obtain the co-op designation.

### Work Term Report Course: ARCN 3999 [0.0]

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**Legend**  
**S**: Study  
**W**: Work  
**O**: Optional  
* indicates recommended work study pattern  
** indicates student finds own employer for this work-term.

### Bachelor of Cognitive Science
- Maintain full-time status in each study term (2.0 credits);  
- Be eligible to work in Canada (for off-campus work);  
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the Bachelor of Cognitive Science program;  
2. Obtained and maintained an overall CGPA of 8.50 or higher;  

Bachelor of Cognitive Science Honours students must successfully complete three (3) work terms to obtain the Co-op designation.

### Work Term Report Course: CGSC 3999 [0.0]

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**Work/Study Patterns:**

**Co-op Work Term Course: BUSI 3999**

**Accounting**

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**Entrepreneurship**

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**Finance, International Business, Marketing, Supply Chain, and students without a concentration**

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**Information Systems, Management**

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**Legend**

S: Study
W: Work
O: Optional
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indicates recommended work study pattern
**
student finds own employer for this work-term.

**Bachelor of Commerce**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Have a major CGPA of 8.00 or higher and an overall CGPA of 6.50 or higher;
2. Successfully completed 6.0 credits in the major and have at least 6.0 credits remaining for completion of the B.Com. program prior to their first work term;
3. Registered as a full-time student in the Bachelor of Commerce program.

To obtain the co-op designation students must successfully complete three (3) work terms.

**Bachelor of Communication and Media Studies**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Communication and Media Studies Honours program;
2. Obtained and maintained an overall CGPA of 9.00 or higher.

Bachelor of Communication and Media Studies Honours students must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Course: COMS 3999**

**Work/Study Pattern:**

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**Legend**

S: Study
W: Work
O: Optional
*
indicates recommended work study pattern
**
student finds own employer for this work-term.

**Bachelor of Computer Science**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. A major CGPA of 8.00 or higher and an overall CGPA of 8.00 or higher;
2. Successfully completed 3.0 required credits in Computer Science, including one of COMP 2402 or COMP 2404;
3. Registered as a full-time student in the Bachelor of Computer Science program (2.0 credits).

Bachelor of Computer Science Honours and Major students must successfully complete four (4) work terms to obtain the Co-op designation.

**Co-op Work Term Course: COMP 3999**

**Work/Study Pattern:**

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Students in all Bachelor of Engineering concentrations must successfully complete four (4) work terms to obtain the co-op designation.

**Bachelor of Economics**
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the second year of the Bachelor of Economics Honours program
2. A major CGPA of 8.00 or higher and an overall CGPA of 8.00 or higher;
3. Successfully completed all required first- and second-year courses before beginning the first work term.

To obtain the co-op designation in Bachelor of Economics, students must successfully complete three (3) work terms.

**Work Term Report Course:** ECON 3999

**Work/Study Pattern:***

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- O: Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

**Bachelor of Engineering**
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the Engineering program
2. An overall CGPA of 8.00 or higher;
3. Successfully completed all required first and second-year courses before beginning the first work term;
4. Students must be eligible for third-year standing when they return for a study term after their first work placement.

Students in all Bachelor of Engineering concentrations must successfully complete four (4) work terms to obtain the co-op designation.

**Work Term Courses:**
- Aerospace Engineering and Mechanical Engineering, Biomedical and Mechanical Engineering:
  - MAAE 3999 [0.0] Co-operative Work Term
- Architectural Conservation and Sustainability Engineering:
  - CIVE 3999 [0.0] Co-operative Work Term
  - or ENVE 3999 [0.0] Co-operative Work Term
- Civil Engineering:
  - CIVE 3999 [0.0] Co-operative Work Term
- Communications Engineering, Computer Systems Engineering and Software Engineering:
  - SYSC 3999 [0.0] Co-operative Work Term
- Biomedical and Electrical Engineering, Electrical Engineering and Engineering Physics:
  - ELEC 3999 [0.0] Co-operative Work Term
- Environmental Engineering:
  - ENVE 3999 [0.0] Co-operative Work Term
- Sustainable and Renewable Energy Engineering:
  - ELEC 3999 [0.0] Co-operative Work Term
  - MAAE 3999 [0.0] Co-operative Work Term (depending on student's stream)

**Work/Study Patterns**

**Aerospace Engineering, Architectural Conservation and Sustainability Engineering, Biomedical and Mechanical Engineering, Civil Engineering, Communications Engineering, Environmental Engineering, Mechanical Engineering, Sustainable and Renewable Energy Engineering**

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** student finds own employer for this work-term.

**Electrical Engineering, Engineering Physics**

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**Biomedical and Electrical Engineering, Computer Systems Engineering, Software Engineering**

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* indicates recommended work study pattern
** student finds own employer for this work-term.

**Bachelor of Global and International Studies**
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]
In addition to the following:
1. Registered as a full-time student in the Bachelor of Global and International Studies Honours program;
2. Obtained and maintained an overall CGPA of 9.5 or higher in the first two years of academic study;
3. Have obtained third-year standing;
4. Prior to the first work term, have successfully completed GINS 3010 and GINS 3020

Students in B.G.In.S must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Report Course: GINS 3999**

**Work/Study Pattern:**

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* indicates recommended work study pattern
** student finds own employer for this work-term.

**Bachelor of Industrial Design**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to:
1. Registered as a full-time student in the Industrial Design program
2. Obtained a CGPA of 8.00 or higher in industrial design core courses and an overall CGPA of 6.50 or higher

Students in the Bachelor of Industrial Design must complete three (3) work terms to obtain the co-op designation.

**Co-op Work Term Course: IDES 3999**

**Work/Study Pattern:**

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**Legend**

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* indicates recommended work study pattern
** student finds own employer for this work-term.

**Bachelor of Information Technology**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Obtained and maintained a major CGPA of 8.0;
2. Successfully completed all required first-year courses, and
3. Registered as a full-time student in the Bachelor of Information Technology program

Students in the Bachelor of Information Technology must complete three (3) work terms to obtain the co-op designation.

**Co-op Work Term Course: BIT 3999**

**Work/Study Pattern:**

**Interactive Multimedia and Design, Information Resource management, Network Technology, Photonics and Laser Technology**

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**Bachelor of Mathematics Honours, Combined B.Math/M.Sc.**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to:

Students in any of these programs (excluding Biostatistics) must satisfy the following:
1. Completion of 5.0 or more credits (at least 2.0 in Mathematics/Statistics) at Carleton in any Honours program (excluding Biostatistics), or the Combined B.Math./M.Sc. ("Fast Track") programs, offered by the School of Mathematics and Statistics
2. A major CGPA of 8.00 or higher and an overall CGPA of 6.50 or higher

Students in the B.Math. (Combined Honours) Biostatistics program must satisfy the following:
1. Full-time student in the B.Math. Biostatistics program;
2. An overall CGPA of 8.00 or higher;
3. Successfully completed all required first year courses before beginning the first work term
4. Students must be eligible for third-year standing when they return for a study term after their first work term.

Students in these programs must successfully complete four (4) work terms to obtain the co-op designation.

**Co-op Work Term Course: MATH 3999 or STAT 3999**

**Work/Study Pattern:**

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### Bachelor of Media Production and Design

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed MPAD 2002 before beginning the first work term.

In addition to the following:

1. Registered as a full-time student in the Bachelor of Media Production and Design program;
2. Successfully completed MPAD 2002 before beginning the first work term.
3. Obtained and maintained an overall CGPA of 9.00 or higher.

Bachelor of Media Production and Design students must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Course:** MPAD 3999

### Enriched Support Program/Indigenous Enriched Support Program

**Centre for Initiatives in Education**

**Faculty of Arts and Social Sciences**

1516 Dunton Tower

Telephone: 613-520-2804

Fax: 613-520-2515

carleton.ca/esp
carleton.ca/iesp

### General Information

The Enriched Support Program (ESP) is operated by the Centre for Initiatives in Education (CIE). The ESP is a program for students whose academic potential has not been realized in high school and who do not meet university admission requirements. The program gives these students the opportunity to demonstrate their abilities within the context of university-level courses.

ESP students attend three credits with regularly admitted students and are graded according to the same standards. ESP students also enrol in mandatory, content-related workshops designed to provide the academic support these students need to make the transition to university-level work. An Indigenous Enriched Support Program (IESP) within the ESP offers personalized support to Indigenous students.

All currently registered and prospective ESP students (see Student Classification, below) should contact the CIE for application and registration information.

### Admission to the ESP

Students wishing to apply for admission to the ESP should contact the CIE directly. For details and an application form, visit: carleton.ca/esp

ESP Student Classification: ESP students fall under the Special Student designation at Carleton University. Special students are those who have not been admitted to a degree program but who are taking degree-credit courses to qualify for admission.

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### Legend

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### Bachelor of Public Affairs and Policy Management

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the B.P.A.P.M. program;
2. Obtained an overall CGPA of 9.00 or higher calculated on at least 5.0 credits.

Students in the Bachelor of Public Affairs and Policy Management must successfully complete three (3) work terms to obtain the co-op designation.

**Work Term Course:** PAPM 3999

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### Bachelor of Media Production and Design

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<td>Winter</td>
</tr>
</tbody>
</table>

### Legend

- **S:** Study
- **W:** Work
- **O:** Optional
- * indicates recommended work study pattern
- ** indicates student finds own employer for this work-term.
ESP Students
Under the Special Student designation, ESP students enrol in the same courses and meet the same course requirements as students in degree programs. ESP students choose their credits from a specific selection of ESP supported courses.

Registrarial services for ESP students are provided by the Centre for Initiatives in Education and the Registrar’s Office. ESP students are also encouraged to consult the appropriate Faculty regulations for information about degree programs they intend to apply for upon successful completion of the ESP.

Proficiency in English
Since the instructional language of the University is English, applicants to the ESP must be able to understand and be understood in English, both written and oral. See section 4, English as a Second Language Requirements (ESLR), in the General Admissions Requirements and Procedures for the statement of policy governing English language requirements for non-native speakers.

Course Load
Normally, ESP students may enrol in a maximum of 3.0 credits per academic session (fall/winter) and no more than the equivalent of 1.5 credits (e.g. three half-credit courses) in any one term. Course selection is limited to ESP-designated courses, many of which emphasize reading and writing skills. For two of these courses, students also attend regular weekly small-group workshops, where they are given extra support and guidance in dealing with the course material. The workshops are designed to develop the skills and strategies necessary for university-level critical thinking, analysis, reading and writing.

ESP-Supported Courses
ESP students wishing to be admitted eventually to a degree program are advised to note the specific Faculty requirements for course selection and the admission requirements as they are listed in this Calendar. Individuals seeking admission who need further information should inquire at Admissions Services or the ESP Student Advisory Office.

Course Change and Course Withdrawal
Students must contact an ESP Advisor for assistance with course changes and withdrawals.

Deferred Final Examinations
Please consult the Academic Regulations of the University section of this Calendar.

Financial Assistance
ESP students interested in obtaining financial assistance are advised to contact the Student Awards Office at 613-520-3600.

Admission to a Degree Program upon Completion of ESP
ESP students are subject to the same admission requirements as Special Students. These requirements are outlined in the following section of this Calendar:

General Admission Requirements and Procedures, 17. Special Studies (Non-Degree).

Glossary

Proficiency in English
Since the instructional language of the University is English, applicants to the ESP must be able to understand and be understood in English, both written and oral. See section 4, English as a Second Language Requirements (ESLR), in the General Admissions Requirements and Procedures for the statement of policy governing English language requirements for non-native speakers.

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ESP-Supported Courses
ESP students wishing to be admitted eventually to a degree program are advised to note the specific Faculty requirements for course selection and the admission requirements as they are listed in this Calendar. Individuals seeking admission who need further information should inquire at Admissions Services or the ESP Student Advisory Office.

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Students must contact an ESP Advisor for assistance with course changes and withdrawals.

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Admission to a Degree Program upon Completion of ESP
ESP students are subject to the same admission requirements as Special Students. These requirements are outlined in the following section of this Calendar:

General Admission Requirements and Procedures, 17. Special Studies (Non-Degree).
Collaborative Specialization

At the graduate level the term “collaborative specialization” refers to an Option added to a degree program that provides an experience in a discipline or intellectual area in addition to that provided in the student's home program and meets the requirements identified by the Quality Council's corresponding definition.

Concentration

A program Element recorded on the transcript and diploma constituted by at least 3.5 credits of required courses at the undergraduate level and 1.5 credits of required courses at the Master's level that concentrates on a particular area of study within the program and provides the student with specific expertise, knowledge and/or practice. At the Doctoral level, a concentration is constituted by at least three curricular academic requirements, excluding the dissertation, residency and language requirements, that form a distinctive area of study related to the concentration.

Co-operative Education

An undergraduate or graduate Option comprising work periods combined with academic study to acquire work-related experience; the co-op option is intended to complement the student's academic study.

Core

A course or group of courses that are a subset of the courses that constitute a major in an undergraduate program. These are courses of special importance to undergraduate programs and are subject to specific CGPA requirements.

Cotutelle

An Option in any Ph.D. program. Doctoral students undertake to complete the requirements of a Ph.D. program in both their home university and a partner university in another country.

Course

A course is a unit of teaching that may count as credit towards a Credential. Courses typically last one academic term and focus on one subject area with a prescribed sequence of units of study (lectures, seminars, tutorials, workshops, laboratories, assignments, essays, tests, examinations and so on). Courses are delivered by one or more instructors and have a fixed roster of students. Courses have unique eight-character alphanumeric course codes, titles and descriptions. The credit value is indicated in square brackets following the course number.

Course Numbering

The first number in a course designation (e.g. 0000, 1000, 2000, 3000, 4000) indicates the knowledge level of a course and not the year of registration or year standing one requires to enroll in it. One can enroll in any course provided one meets the prerequisites. Prerequisites come in many forms and combinations such as but not limited to year standing, completion of other courses, registration in a specific program, permission of the Department, and specific CGPA requirements. 0000-level courses are those that may be required to satisfy prerequisites. 1000-level courses are typically introductory or foundation level courses. 2000-level and 3000-level courses are typically intermediate to upper-intermediate level courses. 4000-level courses are typically advanced level courses. 5000 and 6000-level are graduate level courses.

Course Outline

Instructors are required to provide students in each course a written Course Outline (distributed in class or electronically), on or before the first teaching day for undergraduate courses, and before the last date for late registration for graduate courses. The course outline must specify all the elements that will contribute to the final grade, as well as the overall grade breakdown for the course.

Courses Set Aside

Courses that do not contribute to the fulfilment of graduation requirements within the student’s program:

1. Extra to the Degree (ETD): Passed credits that are in excess of the required credits;
2. No Credit for Degree (NCD): Passed credits that are ineligible for credit in the student’s program;
3. Forfeit: Repeated courses, course equivalencies, preclusions, and courses placed in this category by an academic standing committee or an appeal committee.

Credential

An academic qualification awarded by the University Senate upon successful completion of an academic program. All credentials are either degrees (bachelors, masters, or doctoral), diplomas, or certificates.

Credit

The academic value of a course (for example, 0.0, 0.5, 1.0, et cetera).

Credits Not in the Major

Credits Not in the Major are credits that must be taken in programs that require Credits Not in the Major from disciplines and intellectual areas other than those which constitute the discipline, disciplines or intellectual area of the major in such programs. Credits Not in the Major constitute one form of restricted electives.
Diploma Degree Academic Performance Evaluation, and graduate and undergraduate graduation requirements and distinctions. The CGPA may be used in assessments for scholarships, medals and other milestones. The CGPA is the average of grade points earned on all courses required for and counting towards graduation from the student’s current program (overall CGPA), or the average of grade points earned on a subset of such courses (for example, those constituting the Major or a Minor) at the time the CGPA is calculated.

Diploma Degree A Credential at the Bachelor, Master or Doctoral level awarded by the University Senate upon the successful completion of a prescribed set and sequence of program requirements at a specified standard of performance.

Diploma Post-baccalaureate Diploma: a stand-alone undergraduate credential for candidates already possessing a bachelor’s degree intended to: (a) qualify candidates for consideration for entry into a Master’s program; (b) bring a candidate who already possesses a bachelor’s degree up to a level of a bachelor’s degree of 20.0 credits or more in another discipline; (c) provide a candidate who already possesses a twenty-credit bachelor’s degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas; or, (d) provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Post-baccalaureate diplomas are normally constituted by at least three and a maximum of five credits of advanced undergraduate courses.

Graduate Diploma:
Type 1: Awarded when a candidate admitted to a master’s program leaves the program after completing a certain proportion of the requirements. Students are not admitted directly to a Type 1 Diploma.

Type 2: Offered concurrently with a master’s or doctoral degree, the admission to which requires that the candidate be already admitted to the master’s or doctoral degree program. A Type 2 Diploma represents an additional, usually interdisciplinary, qualification of 2 to 3 credits.

Type 3: A stand-alone, direct-entry program of 2 to 3 credits, generally developed by a unit already offering a related master’s (and sometimes doctoral) degree, and designed to meet the needs of a particular clientele or market.

Dual Degree A Dual Degree program is a joint partnership at the undergraduate or Master’s level where a co-enrolment agreement exists between Carleton and another post-secondary institution. Students simultaneously complete a program at both institutions, receiving two diplomas. Students must meet the admission criteria and must fulfill all the program requirements of both institutions within the normal time to completion.

Element Elements are: (i) Undergraduate: majors, minors, concentrations, and specializations; there are a maximum number of elements that may be taken in conjunction with a program at the undergraduate level; (ii) Graduate: concentrations. Elements are recorded on the transcript and the diploma.

Equivalency Courses that are of equal credit value and which are considered to be similar enough that they always preclude one another and may serve interchangeably for the other in terms of prerequisites, co-requisites, and program requirements. These will be identified in the calendar as ‘Also Listed As’, and are commonly referred to as ‘cross-listed courses’.

Experiential Learning is the application of theory Learning and academic content to real-world experiences within the classroom, the community, or the workplace. It may be undertaken independently or in teams. It advances learning outcomes and encourages reflection and application of skills and knowledge in contexts that prepare students for the workplace and civil society.

Field A Field occurs only at the graduate level, and is defined as an identifiable area of research activity undertaken by a group of faculty of sufficient number.

Flex Term refers to the timing of delivery of ‘asynchronous’ on-line courses that are currently restricted to special students and in which they may register at any time. Special students may engage with the material of these courses at their own pace. The delivery of ‘asynchronous’ on-line courses does not therefore conform to the usual beginning and end of Carleton University terms.

Formative assessments are those assessments done during the course that act to provide feedback and guidance to the student in addition to assessing the student's performance.

Free electives are any approved credit course normally at the 1000-level or higher – including courses from the discipline, disciplines or intellectual areas that identify the major of the degree program in question – that may be taken to make up the number of credits required for the degree program in question.
Honours
An undergraduate Bachelor's program requiring a minimum of 20.0 credits that may demand a higher academic standard than a non-honours program. Pathways to completion may be constituted by a thesis, research essay, capstone project, or other significant project.

Internship
An internship is constituted through a course or sequence of courses that provides students with work experience directly related to the subject matter of their degree program. There are two types of undergraduate internships:
1. Program Internship: an Option constituted by a structured sequence of at least 4.0 credits of courses of different levels in an honours bachelors program taken in a work environment off-campus. A program internship provides students with extensive professional work experience directly related to the subject matter of their program.
2. Course Internship: an individual course within a degree program taken in a work environment either on- or off-campus that provides students with professional work experience directly related to the subject matter of their program.

Learning
Learning outcomes are discipline-specific statements that describe the observable skills or abilities associated with the essential knowledge, behaviours, and/or values all students are expected to acquire by the end of a course or program of study.

Letter of Permission
A formal document issued by the University Registrar approving a student to register in a course at another institution in lieu of a Carleton course in the student's academic program. The Letter of Permission must be issued before the student takes the course for credit in a Carleton program at another institution.

Major
A program Element recorded on the transcript and diploma. The major is constituted by the required course credits in one or more defined disciplines or intellectual areas that define the principle focus of a student's undergraduate program and constitute the basis for the calculation of the Major CGPA.

Minor
A program Element at the undergraduate level recorded on the transcript and diploma. A minor is a structured set of credits that form a distinct subset of a program or intellectual area. Each Minor requires at least 4.0 and at most 5.0 credits. Access to minors may be restricted. A minor introduces a student to, or extends their knowledge of, a discipline or intellectual area.

Option
An optional addition to or component of a program with requirements distinct from those of an Element: (i) Undergraduate: co-operative education, study abroad, Mention Francais, program internship; (ii) Graduate: co-operative education, Cotutelle (in Ph.D. programs), Dual Master's Degree (in master's programs), collaborative specialization. Options may be taken in addition to elements and are recorded on the transcript and the diploma.

Pathway
A pathway through a program is a route to completion such as: stream, thesis, research essay, research project, or course only. Pathways may be chosen in addition to Elements and Options, and are not recorded on the diploma but are recorded on the transcript.

Practical Assessments
Practical assessments are those assessments, such as exams or term work, of a student's work where the tasks and conditions are similar to what they would experience in a work environment and are designed to complement their academic skills and competencies.

Prerequisite
A required course or courses that must be completed successfully before registering in the course that requires the prerequisite.

Preclusion
Courses that contain sufficient content in common that credit may not be earned for more than one of the courses. Courses that preclude one another are not necessarily considered equivalent and may or may not be interchangeable to fulfill program or specific element requirements.
Program

A specified combination of academic requirements in a discipline or intellectual area of study which leads to a credential (for example, B.A. in Philosophy, Ph.D. in History, M.Sc. in Chemistry, Graduate Diploma in Public Policy and Program Evaluation, Certificate in the Teaching of English as a Second Language).

There are five types of programs at the undergraduate level:

1. Single-Discipline Program: A Single-Discipline program is a program of at least 15.0 credits in which the courses that constitute the program’s major are drawn overwhelmingly from one discipline or intellectual area.

2. Thematic Program: A Thematic program is an interdisciplinary program of at least 15.0 credits that concentrates on a particular interdisciplinary intellectual area or theme, and draws on courses within its major from at least three disciplines or intellectual areas.

3. Single-Discipline Honours Program: A Single-Discipline Honours program is a program of at least 20.0 credits in which the courses that constitute the program’s major are drawn overwhelmingly from one discipline or intellectual area. Pathways to completion constituted by a thesis, research essay or significant project may demand a higher academic standard than a course-based pathway.

4. Combined Honours Program: A Combined Honours program is a program of at least 20.0 credits in which a student fulfils the requirements for combined honours majors in two such majors from two different programs. Pathways to completion constituted by a thesis, research essay or significant project may demand a higher academic standard than a course-based pathway.

5. Thematic Honours Program: A Thematic Honours program is an interdisciplinary program of at least 20.0 credits that concentrates on a particular interdisciplinary intellectual area or theme, and draws on courses within its major from at least three disciplines or intellectual areas. Pathways to completion constituted by a thesis, research essay or significant project may demand a higher academic standard than a course-based pathway.

Restricted

Elective

Restrictedelectives are courses required to fulfil elective requirements in an undergraduate program that are not free electives. The courses that may fulfil restricted elective requirements in any program are in other words prescribed by the program.

Students should refer to individual program descriptions to determine the courses that may fulfil restricted elective requirements for a program.

Specialization

At the graduate level only collaborative specializations exist. See definition for ‘collaborative specialization’.

At the undergraduate level, the term ‘specialization’ is reserved for specific areas of concentration in programs in which the courses constituting the program’s specializations are delivered overwhelmingly by academic units other than the academic unit administering the program.

Special Students not admitted to a program or a degree Studentsleading to a Credential.

Status

Full-time status for tuition fee purposes:

1. Undergraduate students are full-time when registered in a 60% course load per term as defined by the student’s academic program: for example, registered in at least 1.5 credits per term in a 2.5 credit normal term course load. Undergraduate students should consult the website of the Academic Advising Centre to determine their eligibility for various Provincial and University services according to the number of credits taken each term.

2. Graduate students are normally admitted and must stay continuously registered as full-time. Students may apply to the Dean of Graduate and Postdoctoral Affairs for exemption from full-time status in exceptional circumstances (for example, medical circumstances); exemptions are normally granted for one term.

Part-time status for tuition fee purposes:

1. Undergraduate students are part-time when registered in less than a 60% course load per term as defined by the student’s academic program (for example, registered in less than 1.5 credits per term).

2. Graduate students may be admitted as part-time students and will be required to continue and complete their program as part-time; a part-time student is not eligible to register in more than 1.25 credits per term, including audit courses.
Stream
A Pathway within an undergraduate program normally constituted by at least 1.5 credits of courses that facilitate concentration on a particular area of study within the program. Streams are not recorded on the diploma but are recorded on the transcript.

Summative Assessment
Summative assessments are those assessments of a student's work carried out at the end of a course or the end of specific components of a course whose sole purpose is to constitute a judgement on a student's performance in the course or a specific component of the course.

Transfer Credit
Academic credit granted for individual courses successfully completed at another institution, either upon admission (admitted with advanced standing from secondary school, or transfer from college or university) or while registered with a Letter of Permission or on exchange.

Transcript
The official record of a student's academic registration and accomplishments at Carleton University.

Undeclared Students
Undergraduate students admitted to a degree who have not chosen a program ('declared a major') within that degree; normally, students are required to choose a program ('declare a major') before reaching second-year standing.

Withdrawal
A formal process for discontinuing studies in a course or a program.

Undergraduate students who wish to drop all courses and terminate their registration in the academic program must follow the procedure available through the Registrar's Office. Students who have been away from the University for nine or more consecutive terms will be withdrawn and must re-apply for admission.

Graduate students who wish to drop all courses and terminate their registration in the academic program must notify their department in writing of their intention to withdraw. Students who do not register for three consecutive terms or do not register continuously in their thesis, research essay, or independent research project will be withdrawn and must re-apply for admission.

Undergraduate Programs
African Studies
American Sign Language (Minor)
Anthropology
Applied Linguistics and Discourse Studies
Archaeology (Minor)
Architectural Studies
Art and Architectural History
  Art History
  History and Theory of Architecture
Biochemistry
Biology
Biotechnology
Business
Canadian Studies
Certificate in Carillon Studies
Certificate in Multidisciplinary Studies in Mental Health and Well-Being
Certificate in Nunavut Public Service Studies (C.N.P.S.S.)
Certificate in Professional Writing
Certificate in Science and Policy
Certificate in the Teaching of English as a Second Language (CTESL)
Chemistry
Childhood and Youth Studies
Cognitive Science
Communication and Media Studies
Community Engagement (Minor)
Computer Science
Criminology and Criminal Justice
Critical Race Studies (Minor)
Digital Humanities (Minor)
Disability Studies (Minor)
Earth Sciences
Economics
Engineering
English
Environmental and Climate Humanities (Minor)
Environmental Science
Environmental Studies
European and Russian Studies
Film Studies
Food Science
French
Geography
Geomatics
German (Minor)
Global and International Studies
Global Development (B.G.In.S. Specialization and Stream)
Global Migration and Transnationalism (B.G.In.S. Specialization and Stream)
Greek and Roman Studies
Health Sciences
History
History and Theory of Architecture
Human Rights and Social Justice
Humanities
Indigenous Studies
Industrial Design
Information Technology
Interdisciplinary Science and Practice
International Business
Italian (Minor)
Japanese Language (Minor)
Journalism
Journalism and Humanities
Korean Language (Minor)
Latin American and Caribbean Studies
African Studies

B.A. Combined Honours (20.0 credits)

A. Credits included in the African Studies Major CGPA (7.0 credits)

1. 1.0 credit from: Foundations
   - AFRI 1001 [0.5] Introduction to African Studies I
   & AFRI 1002 [0.5] Introduction to African Studies II
   or FYSM 1901 [1.0] Selected Topics in African Studies

2. 1.0 credit from: African Regions
   - AFRI 2002 [0.5] The Horn of Africa
   - AFRI 2003 [0.5] The Great Lakes Region of Africa
   - AFRI 2004 [0.5] North Africa
   - AFRI 2005 [0.5] West Africa
   - AFRI 2006 [0.5] Southern Africa

3. 1.0 credit from: Intermediate African Studies
   - AFRI 3001 [0.5] Globalization and Popular Culture in Africa
   - AFRI 3002 [0.5] Regions in Africa: Cultures, Society, Politics
   - AFRI 3003 [0.5] African Social and Political Thought
   - AFRI 3004 [0.5] The African City
   - AFRI 3005 [0.5] African Migrations and Diasporas
   - AFRI 3100 [0.5] African Studies Abroad: Selected Topics

4. 0.5 credit from: History
   - HIST 2706 [0.5] Ancient and Pre-Colonial Africa
   - HIST 2707 [0.5] Modern Africa
   - HIST 3717 [0.5] Gender and Sexuality in Africa
   - HIST 3906 [0.5] Topics in World History (African topic)

5. 0.5 credit from: Politics
   - PSCI 3100 [0.5] Politics of Development in Africa
   - PSCI 3101 [0.5] Politics of War in Africa
   - PSCI 4203 [0.5] Southern Africa After Apartheid
   - PSCI 4207 [0.5] Globalization, Adjustment and Democracy in Africa
   - PSCI 4802 [0.5] International Politics of Africa

6. 0.5 credit from: Anthropology
   - ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa
   - ANTH 2660 [0.5] Ethnography of North Africa
   - ANTH 4620 [0.5] Advanced Studies in Anthropology

Note: only one of AFRI 3100 or AFRI 3900 can be used towards this requirement.
7. 0.5 credit from: Literature and Culture 0.5
   AFRI 3609/FLRS 3501 [0.5] Cinema
   ENGL 2926 [0.5] African Literatures I
   ENGL 2927 [0.5] African Literatures II
   FREN 4212 [0.5] Littératures francophones
   MUSI 4105 [0.5] Issues and Processes in African Music

8. 0.5 credit from: Context for African Studies 0.5
   AFRI 3100 [0.5] African Studies Abroad: Selected Topics
   AFRI 3900 [0.5] Placement
   AFRI 4900 [0.5] Tutorial in African Studies
   ANTH 2020/SOCI 2 Race and Ethnicity
   ANTH 2850 [0.5] Development and Underdevelopment
   ANTH 3020/SOCI 3 Studies in Race and Ethnicity
   ANTH 3025 [0.5] Anthropology and Human Rights
   ANTH 3800 [0.5] Studies in Applied and Participatory Anthropology
   ANTH 4020/SOCI 4 Advanced Studies in Race and Ethnicity
   CHST 3303 [0.5] Children’s Rights
   ECON 3508 [0.5] Introduction to Economic Development
   ECON 3509 [0.5] Development Planning and Project Evaluation
   ECON 3510 [0.5] African Economic Development
   ECON 4507 [0.5] The Economics of Development
   ECON 4508 [0.5] International Aspects of Economic Development
   ENGL 2957 [0.5] Literatures of the Americas II
   ENGL 3940 [0.5] Studies in Diaspora Lit.
   ENGL 4802 [0.5] Race, Ethnicity and Canadian Lit.
   ENGL 4975 [0.5] Issues in Postcolonial Theory
   GEOG 2200 [0.5] Global Connections
   GEOG 3209 [0.5] Sustainability and Environment in the South
   HIST 2312 [0.5] History of the Indian Ocean World
   HIST 2710 [0.5] Introduction to Caribbean History
   HIST 3111 [0.5] History of Humanitarian Aid
   HIST 3406 [0.5] African-American Women
   HIST 3710 [0.5] Themes in Caribbean History
   HUMR 3001 [0.5] Special Topics in Human Rights
   HUMR 3301 [0.5] Racialization, Racism and Human Rights
   HUMR 3303 [0.5] Children’s Rights
   HUMR 3401 [0.5] Histories of Persecution and Genocide
   LAWS 3602 [0.5] International Human Rights
   LAWS 4603 [0.5] Transitional Justice
   MUSI 2005 [0.5] Introduction to Jazz History
   MUSI 2008 [0.5] Music of the World’s Peoples
   MUSI 3106 [0.5] Popular Musics of the World
   MUSI 4005 [0.5] Issues in Jazz Studies
   PSCI 2102 [0.5] Comparative Politics of the Global South
   PSCI 3302 [0.5] Comparative Political Thought
   PSCI 3502 [0.5] Gender and Politics: Global South
   PSCI 3805 [0.5] Politics of Race
   PSCI 4104 [0.5] Development in the Global South - Theory and Practice
   PSCI 4105 [0.5] Selected Problems in Development in the Global South
   PSCI 4409 [0.5] Issues in Development Management
   PSCI 4505 [0.5] Transitions to Democracy
   RELI 2230 [0.5] Global Christianity
   SOWK 3206 [0.5] Community Development and Social Change in an International Context
   SOWK 3207 [0.5] Human Rights Practice in Civil Society
   TSES 4011 [0.5] Technology and Society: Development
   WGST 2800 [0.5] Intersectional Identities

9. 0.5 credit from: Honours Seminars 0.5
   AFRI 4003/CHST 4003 [0.5] “The African Child”
   AFRI 4050 [0.5] Selected Topics in African Studies
   ANTH 4620 [0.5] Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
   PSCI 4203 [0.5] Southern Africa After Apartheid
   PSCI 4207 [0.5] Globalization, Adjustment and Democracy in Africa
   PSCI 4802 [0.5] International Politics of Africa

10. 0.5 credit in: Capstone Honours Seminar 0.5
    AFRI 4000 [0.5] Advanced Topics in African Studies

B. Credits Not Included in the Major CGPA (13.0 credits)

11. The requirements of the other discipline must be satisfied.
12. The Institute language requirement must be met.
13. Sufficient free electives to make 20.0 credits for the degree.

Total Credits 20.0

African Studies
B.A. (15.0 credits)

A. Credits included in the African Studies Major CGPA (6.0 credits)

1. 1.0 credit in: Foundations 1.0
   AFRI 1001 [0.5] Introduction to African Studies I
   & AFRI 1002 [0.5] Introduction to African Studies II
   or FYSM 1901 [1.0] Selected Topics in African Studies

2. 1.0 credit from: African Regions 1.0
   AFRI 2002 [0.5] The Horn of Africa
   AFRI 2003 [0.5] The Great Lakes Region of Africa
   AFRI 2004 [0.5] North Africa
   AFRI 2005 [0.5] West Africa
   AFRI 2006 [0.5] Southern Africa

3. 1.0 credit from: Intermediate African Studies 1.0
   AFRI 3001 [0.5] Globalization and Popular Culture in Africa
   AFRI 3002 [0.5] Regions in Africa: Cultures, Society, Politics
   AFRI 3003 [0.5] African Social and Political Thought
   AFRI 3004 [0.5] The African City
   AFRI 3005 [0.5] African Migrations and Diasporas
AFRI 3100 [0.5] African Studies Abroad: Selected Topics  
AFRI 3900 [0.5] Placement  
Note: only one of AFRI 3100 or AFRI 3900 can be used towards this requirement.

4. 0.5 credit from: History 0.5  
HIST 2706 [0.5] Ancient and Pre-Colonial Africa  
HIST 2707 [0.5] Modern Africa  
HIST 3717 [0.5] Gender and Sexuality in Africa

5. 0.5 credit from: Politics 0.5  
PSCI 3100 [0.5] Politics of Development in Africa  
PSCI 3101 [0.5] Politics of War in Africa

6. 0.5 credit from: Anthropology 0.5  
ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa  
ANTH 2660 [0.5] Ethnography of North Africa

7. 0.5 credit from: Literature and Culture 0.5  
AFRI 3609/FILM 3609 African Cinema  
ENGL 2926 [0.5] African Literatures I  
ENGL 2927 [0.5] African Literatures II

8. 0.5 credit from: African Diaspora 0.5  
ENGL 2957 [0.5] Literatures of the Americas II  
ENGL 3940 [0.5] Studies in Diaspora Lit.  
HIST 2710 [0.5] Introduction to Caribbean History  
HIST 3406 [0.5] African-American Women  
HIST 3710 [0.5] Themes in Caribbean History  
MUSI 2005 [0.5] Introduction to Jazz History

9. 0.5 credit from: Context for African Studies 0.5  
ANTH 2850 [0.5] Development and Underdevelopment  
ANTH 3200/SCI 3320 [0.5] In Race and Ethnicity  
ANTH 3025 [0.5] Anthropology and Human Rights  
ANTH 3800 [0.5] Studies in Applied and Participatory Anthropology  
CHST 3303 [0.5] Children's Rights  
ECON 3508 [0.5] Introduction to Economic Development  
ECON 3509 [0.5] Development Planning and Project Evaluation  
ECON 3510 [0.5] African Economic Development  
GEOG 2200 [0.5] Global Connections  
GEOG 3209 [0.5] Sustainability and Environment in the South  
HIST 2312 [0.5] History of the Indian Ocean World  
HIST 3111 [0.5] History of Humanitarian Aid  
HIST 3406 [0.5] African-American Women  
HUMR 3001 [0.5] Special Topics in Human Rights  
HUMR 3301 [0.5] Racialization, Racism and Human Rights  
HUMR 3303 [0.5] Children’s Rights  
HUMR 3401 [0.5] Histories of Persecution and Genocide  
LAWS 3602 [0.5] International Human Rights  
MUSI 2008 [0.5] Music of the World's Peoples  
MUSI 3106 [0.5] Popular Musics of the World  
PSCI 2102 [0.5] Comparative Politics of the Global South  
PSCI 3302 [0.5] Comparative Political Thought  
PSCI 3502 [0.5] Gender and Politics: Global South  
PSCI 3805 [0.5] Politics of Race  
RELI 2230 [0.5] Global Christianity  
SOWK 3206 [0.5] Community Development and Social Change in an International Context  
SOWK 3207 [0.5] Human Rights Practice in Civil Society  
WGST 2800 [0.5] Intersectional Identities

Bachelor of Global and International Studies (B.G.In.S.)  
Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Africa and Globalization  
B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)  
1. 4.5 credits in: Core Courses 4.5  
GINS 1000 [0.5] Global History  
GINS 1010 [0.5] International Law and Politics  
GINS 1020 [0.5] Ethnography, Globalization and Culture  
GINS 2000 [0.5] Ethics and Globalization  
GINS 2010 [0.5] Globalization and International Economic Issues  
GINS 2020 [0.5] Global Literatures  
GINS 3010 [0.5] Global and International Theory  
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change  
GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation  
GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization  
Note: Language Requirement - Students choosing the Africa and Globalisation Specialization must fulfill their language requirement with a language relevant to Africa other than English. The Program Director will maintain a list of those languages suitable for this requirement.

a. 1.0 credit in: Foundations 1.0  
AFRI 1001 [0.5] Introduction to African Studies I  
AFRI 1002 [0.5] Introduction to African Studies II

b. 1.0 credit from: African Regions 1.0  
AFRI 2002 [0.5] The Horn of Africa  
AFRI 2003 [0.5] The Great Lakes Region of Africa  
AFRI 2004 [0.5] North Africa  
AFRI 2005 [0.5] West Africa  
AFRI 2006 [0.5] Southern Africa

c. 1.0 credit from: Intermediate African Studies 1.0  
AFRI 3001 [0.5] Globalization and Popular Culture in Africa
AFRI 3002 [0.5]Regions in Africa: Cultures, Society, Politics
AFRI 3003 [0.5]African Social and Political Thought
AFRI 3004 [0.5]The African City
AFRI 3005 [0.5]African Migrations and Diasporas
d. 0.5 credit from: African Experience 0.5
AFRI 3100 [0.5]African Studies Abroad: Selected Topics
AFRI 3900 [0.5]Placement
or 0.5 credit on an approved exchange program at an African university or research institution
e. 0.5 credit from: History 0.5
HIST 2706 [0.5]Ancient and Pre-Colonial Africa
HIST 2707 [0.5]Modern Africa
HIST 3717 [0.5]Gender and Sexuality in Africa
HIST 3906 [0.5]Topics in World History (topic on Africa)
f. 0.5 credit from: Politics 0.5
PSCI 3100 [0.5]Politics of Development in Africa
PSCI 3101 [0.5]Politics of War in Africa
g. 0.5 credit from Anthropology 0.5
ANTH 2620 [0.5]Ethnography of Sub-Saharan Africa
ANTH 2660 [0.5]Ethnography of North Africa
h. 0.5 credit from: Literature and Culture 0.5
AFRI 3609 [0.5]African Cinema
AFRI 3002 [0.5]Lightning Literature I
AFRI 3003 [0.5]Lightning Literature II
ENGL 3940 [0.5]Studies in Diaspora Lit.
FREN 3421 [0.5]Littératures francophones
MUSI 4105 [0.5]Issues and Processes in African Music
i. 0.5 credit from: African Diaspora 0.5
ENGL 2957 [0.5]Literatures of the Americas II
ENGL 3940 [0.5]Studies in Diaspora Lit.
ENGL 4975 [0.5]Issues in Postcolonial Theory
HIST 2710 [0.5]Introduction to Caribbean History
HIST 3406 [0.5]African-American Women
HIST 3710 [0.5]Themes in Caribbean History
MUSI 2005 [0.5]Introduction to Jazz History
MUSI 4005 [0.5]Issues in Jazz Studies
j. 0.5 credit in: Core Honours Seminar 0.5
AFRI 4000 [0.5]Advanced Topics in African Studies
k. 1.0 credit from: Honours Seminars and Honours Research Essay 1.0
AFRI 4003/CHST 4(History of ‘The African Child’
AFRI 4050 [0.5]Selected Topics in African Studies
ANTH 4620 [0.5]Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
GINS 4908 [1.0]Honours Research Essay
PSCI 4203 [0.5]Southern Africa After Apartheid
PSCI 4207 [0.5]Globalization, Adjustment and Democracy in Africa
PSCI 4802 [0.5]International Politics of Africa

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives 8.0
C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Stream in Africa and Globalization
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GINS 1000 [0.5]</td>
<td>Global History</td>
</tr>
<tr>
<td>GINS 1010 [0.5]</td>
<td>International Law and Politics</td>
</tr>
<tr>
<td>GINS 1020 [0.5]</td>
<td>Ethnography, Globalization and Culture</td>
</tr>
<tr>
<td>GINS 2000 [0.5]</td>
<td>Ethics and Globalization</td>
</tr>
<tr>
<td>GINS 2010 [0.5]</td>
<td>Globalization and International Economic Issues</td>
</tr>
<tr>
<td>GINS 2020 [0.5]</td>
<td>Global Literatures</td>
</tr>
<tr>
<td>GINS 3010 [0.5]</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
</tbody>
</table>

2. 4.0 credits from: the Stream 4.0

Note: Language Requirement – Students choosing the Africa and Globalisation Stream must fulfill their language requirement with a language relevant to Africa other than English. The Program Director will maintain a list of those languages suitable for this requirement.

a. Foundations

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>AFRI 1001 [0.5]</td>
<td>Introduction to African Studies I</td>
</tr>
<tr>
<td>AFRI 1002 [0.5]</td>
<td>Introduction to African Studies II</td>
</tr>
</tbody>
</table>

b. African Regions

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRI 2002 [0.5]</td>
<td>The Horn of Africa</td>
</tr>
<tr>
<td>AFRI 2003 [0.5]</td>
<td>The Great Lakes Region of Africa</td>
</tr>
<tr>
<td>AFRI 2004 [0.5]</td>
<td>North Africa</td>
</tr>
<tr>
<td>AFRI 2005 [0.5]</td>
<td>West Africa</td>
</tr>
<tr>
<td>AFRI 2006 [0.5]</td>
<td>Southern Africa</td>
</tr>
</tbody>
</table>

c. Intermediate African Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRI 3001 [0.5]</td>
<td>Globalization and Popular Culture in Africa</td>
</tr>
<tr>
<td>AFRI 3002 [0.5]</td>
<td>Regions in Africa: Cultures, Society, Politics</td>
</tr>
<tr>
<td>AFRI 3003 [0.5]</td>
<td>African Social and Political Thought</td>
</tr>
<tr>
<td>AFRI 3004 [0.5]</td>
<td>The African City</td>
</tr>
<tr>
<td>AFRI 3005 [0.5]</td>
<td>African Migrations and Diasporas</td>
</tr>
</tbody>
</table>

d. African Experience

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>AFRI 3100 [0.5]</td>
<td>African Studies Abroad: Selected Topics</td>
</tr>
<tr>
<td>AFRI 3900 [0.5]</td>
<td>Placement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 2706 [0.5]</td>
<td>Ancient and Pre-Colonial Africa</td>
</tr>
<tr>
<td>HIST 2707 [0.5]</td>
<td>Modern Africa</td>
</tr>
<tr>
<td>HIST 3717 [0.5]</td>
<td>Gender and Sexuality in Africa</td>
</tr>
<tr>
<td>HIST 3906 [0.5]</td>
<td>Topics in World History (African topic)</td>
</tr>
</tbody>
</table>

e. History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI 3100 [0.5]</td>
<td>Politics of Development in Africa</td>
</tr>
<tr>
<td>PSCI 3101 [0.5]</td>
<td>Politics of War in Africa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 2620 [0.5]</td>
<td>Ethnography of Sub-Saharan Africa</td>
</tr>
<tr>
<td>ANTH 2660 [0.5]</td>
<td>Ethnography of North Africa</td>
</tr>
</tbody>
</table>

f. Literature and Culture

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRI 3609 [0.5]</td>
<td>African Cinema</td>
</tr>
</tbody>
</table>

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<td>GINS 3010 [0.5]</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
</tbody>
</table>
Minor in African Studies (4.0 credits)

Requirements:
Open to all undergraduate students not in African Studies or in the B.G.In.S. Specialization or Stream in Africa and Globalization.

1. 1.0 credit in: Foundations
   AFRI 1001 [0.5] Introduction to African Studies I
   & AFRI 1002 [0.5] Introduction to African Studies II

2. 0.5 credit from: African Regions
   AFRI 2002 [0.5] The Horn of Africa
   AFRI 2003 [0.5] The Great Lakes Region of Africa
   AFRI 2004 [0.5] North Africa
   AFRI 2005 [0.5] West Africa
   AFRI 2006 [0.5] Southern Africa

3. 0.5 credit from: Intermediate African Studies
   AFRI 3001 [0.5] Globalization and Popular Culture in Africa
   AFRI 3002 [0.5] Regions in Africa: Cultures, Society, Politics
   AFRI 3003 [0.5] African Social and Political Thought
   AFRI 3004 [0.5] The African City
   AFRI 3005 [0.5] African Migrations and Diasporas

4. 0.5 credit from: History
   HIST 2706 [0.5] Ancient and Pre-Colonial Africa
   HIST 2707 [0.5] Modern Africa
   HIST 3717 [0.5] Gender and Sexuality in Africa
   HIST 3906 [0.5] Topics in World History (African Topic)

5. 0.5 credit from: Politics
   PSCI 3100 [0.5] Politics of Development in Africa
   PSCI 3101 [0.5] Politics of War in Africa

6. 0.5 credit from: Anthropology
   ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa
   ANTH 2660 [0.5] Ethnography of North Africa

7. 0.5 credit from: Literature, Culture and Diaspora Studies
   AFRI 3609/FILM 361/African Cinema
   ENGL 2926 [0.5] African Literatures I
   ENGL 2927 [0.5] African Literatures II
   MUSI 2005 [0.5] Introduction to Jazz History

8. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits

B.A. Regulations
The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars
B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement
Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM,
Change of Program Within the B.A. Degree

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : François requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design


Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences


Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.
Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year
*For B.A. and B.A. (Honours)*
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

African Studies (AFRI) Courses

AFRI 1001 [0.5 credit]
Introduction to African Studies I
Introduction to African studies, including history, geography, literature, and the arts.
Lecture three hours per week, or two-hour lecture and one hour discussion group per week.

AFRI 1002 [0.5 credit]
Introduction to African Studies II
Introduction to contemporary political, economic, and social dimensions of Africa.
Lecture three hours per week.

AFRI 2002 [0.5 credit]
The Horn of Africa
The economic, social and political challenges facing the Horn of Africa, placing them in historical and global context. These countries may be discussed: Djibouti, Eritrea, Ethiopia, Somalia, Sudan, South Sudan.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2003 [0.5 credit]
The Great Lakes Region of Africa
The economic, social and political challenges facing the Great Lake Regions of Africa, including the 1994 Rwanda genocide and its aftermath. These countries may be discussed: Burundi, Democratic Republic of Congo, Kenya, Rwanda, Tanzania, Uganda.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2004 [0.5 credit]
North Africa
The economic, social and political challenges facing Egypt and the Maghreb countries of North Africa, including the “Arab Spring”. These countries may be discussed: Algeria, Egypt, Libya, Morocco, Mauritania, Tunisia, Western Sahara.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2005 [0.5 credit]
West Africa
The economic, social and political challenges facing countries of West Africa, including domestic issues and regional relations. These countries may be discussed: Benin, Burkina Faso, Cape Verde, Cote d’Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.
AFRI 2006 [0.5 credit]
Southern Africa
The economic, social and political challenges facing the countries of southern Africa, including the legacies of apartheid. These countries may be discussed: Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 3001 [0.5 credit]
Globalization and Popular Culture in Africa
This course examines new popular life-worlds in Africa. Though potentially "elusive" to conceptualize, this course shows how these forms of popular culture are related to the role of youth culture and social media in an age of globalization and democratization.
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3002 [0.5 credit]
Regions in Africa: Cultures, Society, Politics
Using dominant linguistic borderlines that have shaped much of the African experience in the last century, this course will look at themes cutting across culture, geography, society and politics in francophone, anglophone, lusophone and arabophone Africa.
Prerequisites (AFRI 2001 no longer offered).
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3003 [0.5 credit]
African Social and Political Thought
The African communitarian tradition. Contemporary African social and political thought, situated in their broad historical contexts.
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3004 [0.5 credit]
The African City
Historical emergence and contemporary issues of the African city.
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3005 [0.5 credit]
African Migrations and Diasporas
Movements of African peoples, from the slave trade era to the present. African diaspora communities around the world and their relationship with Africa.
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3007 [0.5 credit]
Special Topic in African Studies
A special topic related to African Studies, through one or more disciplinary lenses. Course content will vary from year to year.
Prerequisite(s): a 2000-level AFRI course or third-year standing and 1.0 credit in AFRI.
Lectures three hours a week.

AFRI 3100 [0.5 credit]
African Studies Abroad: Selected Topics
Based at one of Carleton’s partner universities in Africa, course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in African studies, as selected by the instructor. Topic and location may change annually.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and approval by the Director of the Institute of African Studies.

AFRI 3200 [0.5 credit]
Thematic Topic
A special topic that takes a thematic approach to African Studies. Course content will vary from year to year.
Prerequisite(s): a 2000-level AFRI course or third-year standing and 1.0 credit in AFRI.
Lectures three hours a week.

AFRI 3609 [0.5 credit]
African Cinema
Major moments, debates, figures and movements in African cinema around such categories as the colonial, the anti-colonial, the postcolonial, the national, the continental, the diasporic, the global, race, Afro-futurism, and world cinema, interrogating in the process the very category of “African cinema.”
Also listed as FILM 3609.
Prerequisite(s): 1.0 credit in FILM and third year standing or permission of instructor.
Lecture and screening three hours a week, lecture one hour a week.

AFRI 3900 [0.5 credit]
Placement
Placement for one term with an African focus.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Institute of African Studies.

AFRI 3916 [0.5 credit]
Spoken Word Poetry Workshop
This intermediate-level workshop-based course explores traditions of spoken words poetry while requiring students to create and perform their own spoken word poems.
Includes: Experiential Learning Activity
Also listed as ENGL 3916.
Prerequisite(s): third-year standing or a 2000-level writing workshop and permission of the instructor.
Workshops three hours a week.
AFRI 4000 [0.5 credit]  
Advanced Topics in African Studies  
Seminar examining a specialized topic in African studies. The topic will vary from year to year.  
Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.  
Seminar three hours per week.

AFRI 4003 [0.5 credit]  
History of 'The African Child'  
Students will analyze the history of the figure of 'the African child' using a range of visual, sources from colonial officials, anthropologists, historians, advertisers, charity and development workers, and African children themselves.  
Includes: Experiential Learning Activity  
Also listed as CHST 4003.  
Precludes additional credit for CHST 4001 if taken in 2014-15.  
Prerequisite(s): fourth-year standing.  
Seminar three hours a week.

AFRI 4050 [0.5 credit]  
Selected Topics in African Studies  
Selected topics in African studies not ordinarily treated in the regular course program. The choice of topic varies from year to year. Students should check with the institute regarding the topic offered.  
Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.  
Also offered at the graduate level, with different requirements, as AFRI 5050, for which additional credit is precluded.  
Seminar three hours per week.

AFRI 4060 [0.5 credit]  
African Feminisms  
African feminisms as theoretical interventions and as political practice, and as diverse forms. Gender as a marker of power: status, hierarchy, social capability, and as a system of distribution of resources, responsibilities and solidarities.  
Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.  
Also offered at the graduate level, with different requirements, as AFRI 5060, for which additional credit is precluded.  
Seminar three hours per week.

AFRI 4900 [0.5 credit]  
Tutorial in African Studies  
A tutorial on selected topics in which seminars are not available.  
Prerequisite(s): Permission of the Institute of African Studies and agreement of an instructor.

American Sign Language (Minor)  
This section presents the requirements for programs in:  
- Minor in American Sign Language

Minor in American Sign Language (4.0 credits)  
Open to all undergraduate degree students.  
Requirements:  
1. 3.0 credits in ASLA  
2. 1.0 credit in ASLA at the 3000-level or higher  
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language  
4. The remaining requirements of the major discipline(s) and degree must be satisfied.  
Total Credits 4.0

Placement for Language Students  
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering. Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency. Students should note that they cannot go backward in a sequence of levels in language courses.  

Regulations  
In addition to the requirements listed here, students must satisfy:  
1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

American Sign Language (ASLA) Courses  
Placement for Language Students  
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering. Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency. Students should note that they cannot go backward in a sequence of levels in language courses.
ASLA 1010 [0.5 credit]
First-Year American Sign Language I
For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance. Precludes additional credit for ASLA 1110. Four hours a week.

ASLA 1020 [0.5 credit]
First-Year American Sign Language II
Continuation of first-year American Sign Language. Basic communicative competence plus anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance. Precludes additional credit for ASLA 1110. Prerequisite(s): grade of C or higher in ASLA 1010, or permission of the School. Four hours a week.

ASLA 1110 [1.0 credit]
Intensive First-Year American Sign Language
For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance. Precludes additional credit for ASLA 1110. Prerequisite(s): grade of C or higher in ASLA 1010 or ASLA 1020. Eight hours a week (one term).

ASLA 2010 [0.5 credit]
Second-Year American Sign Language I
Study of American Sign Language beyond the elementary level. Study of targeted lexical and grammatical features, as well as specific conversational skills. Further exploration of the culture of deaf people. Compulsory attendance. Precludes additional credit for ASLA 2110. Prerequisite(s): grade of C or higher in ASLA 1020, ASLA 1110, or permission of the School. Four hours a week.

ASLA 2020 [0.5 credit]
Second-Year American Sign Language II
Continuation of second-year American Sign Language. Study of targeted lexical and grammatical features, as well as specific conversational skills. Further exploration of the culture of deaf people. Compulsory attendance. Precludes additional credit for ASLA 2110. Prerequisite(s): grade of C or higher in ASLA 2010, or permission of the School. Four hours a week.

ASLA 2110 [1.0 credit]
Intensive Second-Year American Sign Language
Further study of American Sign Language to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for ASLA 2010 and ASLA 2020. Prerequisite(s): grade of C or higher in ASLA 1020 or ASLA 1110, or permission of the School. Eight hours a week (one term).

ASLA 3010 [0.5 credit]
Third-Year American Sign Language I
Receptive and expressive mastery of grammar and lexicon of American Sign Language. Advanced conversation skills across different registers. Advanced insight into the culture of the deaf community. Compulsory attendance. Prerequisite(s): grade of C or higher in ASLA 2010, ASLA 2110, or permission of the School. Three hours a week.

ASLA 3020 [0.5 credit]
Third-Year Advanced American Sign Language II
Continuation of third-year American Sign Language. Receptive and expressive mastery of grammar and lexicon of American Sign Language. Advanced conversation skills across different registers. Advanced insight into the culture of the deaf community. Compulsory attendance. Prerequisite(s): grade of C or higher in ASLA 3010, or permission of the School. Three hours a week.

ASLA 4010 [0.5 credit]
Fourth-Year American Sign Language I
Focus on the development of receptive and productive skills above what is expected in everyday conversation. Skills in specific contexts such as social services, health, business and government. Compulsory attendance. Prerequisite(s): grade of C or higher in ASLA 3020, or permission of the School. Three hours a week.

ASLA 4020 [0.5 credit]
Fourth-Year American Sign Language II
Continuation of fourth-year American Sign Language. Focus on the development of receptive and productive skills above what is expected in everyday conversation. Skills in specific contexts such as social services, health, business and government. Compulsory attendance. Prerequisite(s): grade of C or higher in ASLA 4010, or permission of the School. Three hours a week.
ASLA 4900 [1.0 credit]
Independent Study
Research in a topic in American Sign Language or deaf culture under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in American Sign Language, grade of C or higher in ASLA 4020 or equivalent, or permission of the School.

ASLA 4901 [0.5 credit]
Independent Study
Research in a topic in American Sign Language or deaf culture under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in American Sign Language, grade of C or higher in ASLA 4020 or equivalent, or permission of the School.

Anthropology
This section presents the requirements for programs in:
• Anthropology B.A. Honours
• Anthropology B.A. Combined Honours
• Anthropology B.A.
• Specialization in Globalization, Culture and Power B.G.In.S. Honours
• Stream in Globalization, Culture and Power B.G.In.S.
• Minor in Anthropology
• Minor in Community Engagement

Program Requirements
Bachelor of Arts
Anthropology
B.A. Honours (20.0 credits)
A. Credits Included in the Major CGPA (9.0 credits):
1. 0.5 credit from:
   ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
   or ANTH 1002 [0.5] Introduction to Issues in Anthropology
2. 2.0 credits in:
   ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology
   ANTH 4900 [1.0] Honours Research Paper in Anthropology (with a minimum 9.0 GPA or permission of instructor, or 1.0 credit in ANTH courses at the ANTH 3000-level or above).
3. 1.0 credit from: ANTH 2600 series
4. 1.5 credits in:
   ANTH 3005 [0.5] Ethnographic Research Methods
   ANTH 3007 [0.5] History of Anthropological Theory
   ANTH 3008 [0.5] Contemporary Theories in Anthropology
5. 1.5 credits in ANTH at the 1000 level and above
6. 1.0 credit in ANTH and/or SOCI at the 2000 or above
7. 1.5 credits in ANTH and/or SOCI at the 4000 or 5000 Level

B. Credits Not Included in the Major CGPA (11.0 credits):
7. 0.5 credit in:
   SOCI 1001 [0.5] Introduction to Sociology I
8. 8.0 credits not in SOCI or ANTH
9. 2.5 credits in free electives
Total Credits 20.0

B.A. Combined Honours (20.0 credits)
A. Credits Included in the Anthropology Major CGPA (7.0 credits):
1. 0.5 credit from:
   ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
   or ANTH 1002 [0.5] Introduction to Issues in Anthropology
2. 1.0 credit in:
   ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology
3. 1.0 credit from ANTH 2600 series
4. 1.5 credits in:
   ANTH 3005 [0.5] Ethnographic Research Methods
   ANTH 3007 [0.5] History of Anthropological Theory
   ANTH 3008 [0.5] Contemporary Theories in Anthropology
5. 0.5 credit in ANTH at the 1000-level and above
6. 0.5 credit in ANTH and/or SOCI at the 2000 or above
7. 1.0 credit in ANTH and/or SOCI at the 4000 or 5000 level
8. 1.0 credit in:
   ANTH 4900 [1.0] Honours Research Paper in Anthropology (with a minimum 9.0 GPA or permission of instructor, or 1.0 credit in ANTH courses at the ANTH 3000-level or above.)
   or
   1.0 credit in ANTH at the 1000-level or higher if an Honours Essay is completed in the other discipline
9. The requirements for the other discipline must be satisfied
10. Sufficient credits in free electives to make 20.0 credits for the degree
11. Students are required to complete an Honours Essay. In those cases where the second discipline does not require an Honours Essay, alternative arrangements may be considered by the Co-ordinator of Honours (Anthropology)
Total Credits 20.0

B.A. (15.0 credits)
A. Credits Included in the Major CGPA (6.0 credits)
1. 0.5 credit from:
   ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
   ANTH 1002 [0.5] Introduction to Issues in Anthropology
2. 1.0 credit in:
   ANTH 4900 [1.0] Honours Research Paper in Anthropology (with a minimum 9.0 GPA or permission of instructor, or 1.0 credit in ANTH courses at the ANTH 3000-level or above.)
   or
   1.0 credit in ANTH at the 1000-level or higher if an Honours Essay is completed in the other discipline
9. The requirements for the other discipline must be satisfied
10. Sufficient credits in free electives to make 20.0 credits for the degree
11. Students are required to complete an Honours Essay. In those cases where the second discipline does not require an Honours Essay, alternative arrangements may be considered by the Co-ordinator of Honours (Anthropology)
Total Credits 20.0
**B.G.In.S. Honours (20.0 credits)**

**3. 1.0 credit from ANTH 2600 series**

**4. 1.5 credits in:**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tr>
<td>ANTH 3005 [0.5]</td>
<td>Ethnographic Research Methods</td>
</tr>
<tr>
<td>ANTH 3007 [0.5]</td>
<td>History of Anthropological Theory</td>
</tr>
<tr>
<td>ANTH 3008 [0.5]</td>
<td>Contemporary Theories in Anthropology</td>
</tr>
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**5. 1.5 credits in ANTH at the 1000-level or above**

**6. 0.5 credit in ANTH and/or SOCI at the 2000-level or above**

**B. Credits Not Included in the Major CGPA (9.0 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>SOCI 1001 [0.5]</td>
<td>Introduction to Sociology I</td>
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</tbody>
</table>

**8. 6.0 credits not in ANTH or SOCI**

**9. 2.5 credits in free electives**

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**Bachelor of Global and International Studies (B.G.In.S.)**

**Note:** Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

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**Specialization in Globalization, Culture and Power**

**B.G.In.S. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (12.0 credits)**

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<tr>
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<tr>
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<td>Global History</td>
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<tr>
<td>GINS 1010 [0.5]</td>
<td>International Law and Politics</td>
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<tr>
<td>GINS 1020 [0.5]</td>
<td>Ethnography, Globalization and Culture</td>
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<tr>
<td>GINS 2000 [0.5]</td>
<td>Ethics and Globalization</td>
</tr>
<tr>
<td>GINS 2010 [0.5]</td>
<td>Globalization and International Economic Issues</td>
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<tr>
<td>GINS 2020 [0.5]</td>
<td>Global Literatures</td>
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<tr>
<td>GINS 3010 [0.5]</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
<tr>
<td>GINS 4090 [0.5]</td>
<td>Honours Seminar in Global and International Studies</td>
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**2. 0.0 credit in: International Experience Requirement Preparation**

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<tbody>
<tr>
<td>GINS 1300 [0.0]</td>
<td>International Experience Requirement Preparation</td>
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</tbody>
</table>

**3. 7.5 credits in: the Specialization**

<table>
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<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tr>
<td>ANTH 1001 [0.5]</td>
<td>Introduction to Socio-Cultural Anthropology</td>
</tr>
<tr>
<td>or ANTH 1002 [0.0]</td>
<td>Introduction to Issues in Anthropology</td>
</tr>
<tr>
<td>ANTH 2001 [1.0]</td>
<td>Foundations in Socio-Cultural Anthropology</td>
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<tr>
<td>ANTH 3005 [0.5]</td>
<td>Ethnographic Research Methods</td>
</tr>
<tr>
<td>ANTH 2850 [0.5]</td>
<td>Development and Underdevelopment</td>
</tr>
<tr>
<td>ANTH 3010 [0.5]</td>
<td>Language, Culture, and Globalization</td>
</tr>
</tbody>
</table>

**Total Credits: 15.0**

**ANTH 3027 [0.5] Studies in Globalization and Human Rights**

**ANTH 3040 [0.5] The Global Middle Class**

**ANTH 3045 [0.5] Children and Childhood in a Globalized World**

**GEOG 2300 [0.5] Space, Place and Culture**

**GEOG 3021 [0.5] Geographies of Culture and Identity**

**c. 1.0 credit from: Ethnography**

**ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research**

**ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa**

**ANTH 2630 [0.5] Studies in Asian Societies: Current Issues in Anthropological Research**

**ANTH 2635 [0.5] Tradition and Modernity in the Pacific**

**ANTH 2640 [0.5] Andean Ethnography**

**ANTH 2645 [0.5] The Postcolonial Middle East**

**ANTH 2650 [0.5] Ethnography of Mesoamerica**

**ANTH 2660 [0.5] Ethnography of North Africa**

**ANTH 2670 [0.5] Ethnography of Brazil**

**ANTH 2680 [0.5] Anthropology of "Mainstream" North America**

**ANTH 2690 [0.5] Ethnography of a Selected Area**

d. **2.0 credits from:**

**ANTH 3022 [0.5] Selected Topics in Anthropology**

**ANTH 4215 [0.5] Advanced Studies in Anthropological Theory and Methods**

**ANTH 4225 [0.5] Advanced Studies in Anthropology**

**ANTH 4300 [0.5] Advanced Studies in Culture and Symbols**

**ANTH 4350 [0.5] Anthropology of Material Culture and Museums**

**ANTH 4360 [0.5] Studies in Anthropology and Indigenous Peoples**

**ANTH 4380 [0.5] Studies in Applied and Participatory Anthropology**

**ANTH 4407 [0.5] Advanced Studies in Anthropological Theory and Methods**

**ANTH 4420 [0.5] Advanced Studies in Race and Ethnicity**

**ANTH 4430 [0.5] Selected Topics in Anthropology**

**ANTH 4500 [0.5] Advanced Studies in Visual Anthropology**

**ANTH 4550 [0.5] Advanced Studies in Visual Anthropology**

**ANTH 4570 [0.5] Political Anthropology**

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86 The Academic Year (Graduate and Undergraduate Studies)
### Stream in Globalization, Culture and Power

#### B.G.In.S. (15.0 credits)

**A. Credits Included in the Major CGPA (8.0 credits):**

1. **4.0 credits in:** Core Courses
   - ANTH 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits from:** the Stream
   - **Foundations**
     - ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
     - ANTH 1002 [0.5] Introduction to Issues in Anthropology
     - ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology
     - ANTH 3005 [0.5] Ethnographic Research Methods
   - **Culture and Globalization**
     - ANTH 2850 [0.5] Development and Underdevelopment
     - ANTH 3010 [0.5] Language, Culture, and Globalization
     - ANTH 3027 [0.5] Studies in Globalization and Human Rights
     - ANTH 3040 [0.5] The Global Middle Class
     - ANTH 3045 [0.5] Children and Childhood in a Globalized World

#### B. Credits Not Included in the Major CGPA (8.0 credits)

1. **4.0 credits in:** Free Electives
2. **8.0 credits in:** Core Honours Seminars
3. **7.0 credits in:** Free Electives

#### C. Additional Requirements

- The Language requirement must be met.
- The International Experience requirement must be met.
- The Language requirement must be met.

### Minor

#### Minor in Anthropology

Open to all undergraduate degree students in programs other than Anthropology or the B.G.In.S. Specialization or Stream in Globalization, Culture and Power. Students in any Sociology major should select courses carefully if they wish to use courses from the major in their minor Anthropology. Such students should always consult the department.
Requirements
1.  0.5 credit from: 0.5
   ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
   or ANTH 1002 [0.5] Introduction to Issues in Anthropology
2.  1.0 credit in: 1.0
   ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology
3.  2.5 credits in ANTH at the 2000-level or above 2.5
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Minor in Community Engagement (4.0 credits)
This minor is open to all undergraduate degree students in any program. Students in any Sociology or Anthropology major should select courses carefully if they wish to use courses from the major in their minor. Such students should always consult the department.

Requirements:
1.  0.5 credit from: 0.5
   ANTH 2180 [0.5] Foundations in Community Engagement
SOCI 2180 [0.5] Foundations in Community Engagement
2.  0.5 credit from: 0.5
   ANTH 4171 [0.5] Community Engagement Capstone
SOCI 4171 [0.5] Community Engagement Capstone
3.  1.0 credit from: 1.0
   Engaging the Community courses:
AFRI 3900 [0.5] Placement
ANTH 4000 [0.5] Field Placement in Anthropology
ANTH 4100 [0.5] Ethnographic Field Course
ARTH 3701 [0.5] Art and Architecture on Site
ARTH 4701 [0.5] Art and Architecture on Site
CDNS 1101 [0.5] Ottawa: Exploring National Institutions
CDNS 4800 [1.0] Internship Practicum
CRCJ 3901 [1.0] Practicum in Criminology I
CRCJ 3902 [1.0] Practicum in Criminology II
DIGH 4005 [0.5] Digital Humanities Practicum
ENST 4450 [0.5] Community-Engaged Research
GEOG 3030 [0.5] Regional Field Excursion
GEOG 4000 [0.5] Field Studies
GEOG 4450 [0.5] Community-Engaged Research
GINS 3100 [0.5] Global and International Group Project
GINS 3200 [0.5] Experiential Learning Abroad
GINS 3900 [0.5] International Placement
GINS 3901 [1.0] International Placement
GINS 3930 [0.5] Carleton International Placement
GINS 3931 [1.0] Carleton International Placement
HIST 3807 [0.5] Practicum in History
HIST 3815 [0.5] Group Practicum
HLTH 4909 [1.0] Capstone Course – Field Placement and Research Project
HUMR 4905 [0.5] Practicum Placement in Human Rights I
INDG 4001 [0.5] Indigeneity in the City

4.  2.0 credits from: 2.0
   Critically Understanding Communities courses:
AFRI 3100 [0.5] African Studies Abroad: Selected Topics
ALDS 3205 [0.5] English as a Global Language
ANTH 2020 [0.5] Race and Ethnicity
ANTH 2080 [0.5] Humans/Animals: the More-than-Human in Social Research
ANTH 2680 [0.5] Anthropology of "Mainstream" North America
ANTH 3005 [0.5] Language, Culture, and Globalization
ANTH 3010 [0.5] Language, Culture, and Globalization
ANTH 3020 [0.5] Studies in Race and Ethnicity
ANTH 3025 [0.5] Anthropology and Human Rights
ANTH 3310 [0.5] Studies in Medical Anthropology
ANTH 3355 [0.5] Anthropology and the Environment
ANTH 3580 [0.5] Anthropology of Material Culture and Museums
ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples
ANTH 3800 [0.5] Studies in Applied and Participatory Anthropology
ANTH 4006 [0.5] Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology
ANTH 4610 [0.5] Advanced Studies in Indigenous Peoples
ANTH 4730 [0.5] Colonialism and Post-Colonialism
CDNS 2210 [0.5] Introduction to the Study of Canadian Culture
CRST 2001 [0.5] Introduction to Critical Race Studies
DBST 2001 [0.5] Disabling Society
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<td>MUSI 4001</td>
<td>Music in Canada</td>
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<td>MUSI 3800</td>
<td>Music of the World's Peoples</td>
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<td>MUSI 4305</td>
<td>Music and Gender I</td>
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<td>MUSI 4311</td>
<td>Music and Gender II</td>
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<td>MUSI 4306</td>
<td>Music and Wellbeing in a Global Context</td>
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<td>Social Justice and Human Rights</td>
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Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design


Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREET, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies,
Students in a B.A. Honours program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfill the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy
Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements
COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course).
Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to
accompanied by their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**B.A. Honours Anthropology: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Anthropology Program;
2. Have a minimum overall CGPA of 7.0 and major CGPA of 8.0 in the first two years of academic study;
3. Successfully completed, by the start-date of the first work term, the required first-year courses, second-year courses, and any two of ANTH 3005, ANTH 3007 or ANTH 3008.

Students in B.A. Honours Anthropology must successfully complete three (3) work terms to obtain the Co-op designation.

**Co-op Work Term Course:** ANTH 3999

**Work/Study Pattern:**

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**Legend**

S: Study
W: Work
O: Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. The minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Admission Requirements**

**Degrees**

- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

**First Year**

*For B.A. and B.A. (Honours)*

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

**Advanced Standing**

**B.A. and B.A. (Honours) Program**

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**Direct Admission to the First Year of the Co-op Option**

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law (Business Law), Law (Law, Policy and Government), Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.
Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Anthropology (ANTH) Courses**

**ANTH 1001 [0.5 credit]**
*Introduction to Socio-Cultural Anthropology*
What does it mean to be human? Anthropologists have approached this question by using the ethnographic method to understand the diverse ways people create shared worlds of meaning. In this course students will learn how culture shapes experience, and how ethnography describes this process.
Includes: Experiential Learning Activity
Precludes additional credit for ANTH 1000 (no longer offered), HUMS 1005.
Lectures/discussions three hours a week.

**ANTH 1002 [0.5 credit]**
*Introduction to Issues in Anthropology*
This course introduces students to anthropology through in-depth consideration of selected issues facing contemporary cultures and societies. Selected issue(s) will reflect the expertise of the instructor and could include current debates related to race, gender, development, politics, economics, religion, technology, health and the environment.
Includes: Experiential Learning Activity
Precludes additional credit for ANTH 1000 (no longer offered).
Lectures/discussions three hours a week.

**ANTH 2001 [1.0 credit]**
*Foundations in Socio-Cultural Anthropology*
Exploration of basic anthropological concepts and analytical strategies through case studies. Emphasis on socio-cultural diversity as documented by ethnographic research with attention to the role of culture in articulating gender, kinship, economic and political relations.
Includes: Experiential Learning Activity
Prerequisite(s): ANTH 1001 or ANTH 1002.
Lectures and discussions three hours a week.

**ANTH 2020 [0.5 credit]**
*Race and Ethnicity*
Introduction to some of the recent theoretical literature and research on the issues of race, racism and ethnicity. Concepts, controversies and definitions dealing with race and ethnicity from the Canadian context and internationally.
Also listed as SOCI 2020.
Lectures and workshop three hours a week.

**ANTH 2040 [0.5 credit]**
*Anthropology and Gender*
The study of gender in anthropology, including its theoretical, cross-cultural and ethnographic aspects. Emphasis on gender as a sociocultural process that is at once discursive and embodied, and that varies in distinct cultural, socio-historical, geopolitical, and economic contexts.
Includes: Experiential Learning Activity
Precludes additional credit for ANTH 2408 (no longer offered).
Lectures and workshop three hours a week.

**ANTH 2060 [0.5 credit]**
*Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives*
Drawing on anthropological and sociological approaches, students will explore girls’ lives in diverse cultural, political, economic, and social contexts. Topics may include: movement and migration, education, media, imaging and humanitarianism, consumerism, agency and activism, health, and violence.
Also listed as SOCI 2060.
Prerequisite(s): second-year standing or permission of the instructor.
Two hour lecture plus one hour tutorial per week.

**ANTH 2070 [0.5 credit]**
*Psychological Anthropology*
Exploration of the relative and the universal in relations between the psychological self and the cultural environment. Topics may include anthropology of psychiatric institutions and practices, the cultural relativity of emotions, the self in everyday life and ritual.
Lecture/discussion groups three hours a week.

**ANTH 2080 [0.5 credit]**
*Humans/Animals: the More-than-Human in Social Research*
Examination of relationships between humans and animals in the sociological and broader social studies canon, including: multispecies ethnography, the role of the ‘more than human’ in Indigenous legal orders, posthumanist and STS theory, relationships between humans and animals and other non-human entities in the Anthropocene.
Also listed as SOCI 2080.
Lecture/discussion groups three hours per week.
ANTH 2180 [0.5 credit]
Foundations in Community Engagement
Study of theoretical debates and practical applications relating to community engagement with a focus on Canadian examples. Exploration of the contested and complex meanings of community engagement in and between diverse communities, public institutions, non-profit sector and private enterprise with an emphasis on social justice.
Includes: Experiential Learning Activity
Also listed as SOCI 2180.
Prerequisite(s): Second year standing or permission of instructor.
Lecture, discussion and project work three hours a week.

ANTH 2500 [0.5 credit]
Culture and Symbols
The representation and construction of culture through symbols. Topics may include material culture, rituals, archetypes, myths and mythmaking.
Includes: Experiential Learning Activity
Precludes additional credit for ANTH 3304 (no longer offered).
Lectures and workshop three hours a week.

ANTH 2510 [0.5 credit]
Theories of Human Nature
Critical, cross-cultural exploration of theories of human nature. Begins with a survey of western anthropological models of human consciousness and examines scientific, philosophical and religious perspectives with reference to ethnographic research on myth, religion and science produced by western and non-western cultures.
Lectures and discussion three hours a week.

ANTH 2550 [0.5 credit]
Religion and Society
Cross-cultural survey of religious institutions, focusing on theories and methodologies in the study of religion. Topics may include myth, totemism, cults, ritual, belief systems, altered states of consciousness, new religious and/or new age movements and the relationship of religion with other social institutions and processes.
Includes: Experiential Learning Activity
Also listed as RELI 2736.
Lectures and workshop three hours a week.

ANTH 2610 [0.5 credit]
Examination of a range of issues related to particular indigenous communities and regions of North America. Topics include political, socio-economic, and cultural transformations, Aboriginal title and rights, collaborative research, and other topics relevant to indigenous communities and indigenous - non-indigenous relations.
Precludes additional credit for ANTH 3610 (no longer offered).
Lecture/discussion groups three hours a week.

ANTH 2620 [0.5 credit]
Ethnography of Sub-Saharan Africa
Examination of selected areas of contemporary Sub-Saharan Africa through current anthropological research. Topics may include war and displacement, religion, politics, international development, history, popular culture, colonialism, witchcraft, health and kinship.
Precludes additional credit for ANTH 3620 (no longer offered).
Lecture/discussion groups three hours a week.

ANTH 2630 [0.5 credit]
Studies in Asian Societies: Current Issues in Anthropological Research
Examination of contemporary Asia through anthropological research. Topics may include cultural practices, religion, health issues, economics, politics, history, colonialism and social change. Emphasis will vary by sub-region from year to year, e.g., focusing on South, East or Southeast Asia.
Lectures and discussion three hours a week.

ANTH 2635 [0.5 credit]
Tradition and Modernity in the Pacific
Relationships between contemporary Pacific societies and the rest of the world. Topics may include colonialism and its aftermaths, cultural revival, mining, Christianity, alternative modernities, diasporas, and indigenous media.
Lecture/discussion groups three hours a week.

ANTH 2640 [0.5 credit]
Andean Ethnography
Ethnographic survey of the Andes. The formation of “indigenous” communities and their relation to urban centres and nation-states. Topics may include state formation, social movements, agrarian reform, political economy of food, class, ethnicity and racism, rural-urban migration, community.
Lectures and discussion three hours a week.

ANTH 2645 [0.5 credit]
The Postcolonial Middle East
How do people live in the Middle East? What political, historical and religious forces shape their everyday life? This class draws on essays, ethnographies, and movies to challenge the narratives of chronic violence, excessive religiosity, and prehistoric misogyny that haunt our understanding of this region.
Lecture and discussion three hours a week.

ANTH 2650 [0.5 credit]
Ethnography of Mesoamerica
Ethnographic survey of Mexico and Guatemala focusing on a variety of rural and urban communities throughout the area with emphasis on indigenous groups. Topics may include nationalism, ethnicity, social organization, gender, cosmology and material culture.
Lectures and discussion three hours a week.
ANTH 2660 [0.5 credit]  
Ethnography of North Africa  
Introduction to societies and cultures of North Africa. Topics may include: history and socio-cultural role of Islam, the relations between Arabs and Berbers, ethnography of religious institutions, ritual practices, everyday life, gender, colonialism and post-colonialism, problems of state and religion. Lectures and discussion three hours a week.

ANTH 2670 [0.5 credit]  
Ethnography of Brazil  
Examination of selected areas of contemporary Brazil through current anthropological research. Topics may include: processes of nation-formation, colonialism, gender and sexuality, race and racism, health, everyday life, urban ethnography, popular culture, social movements, and institutions such as religion, the family and the state. Lectures and discussion three hours a week.

ANTH 2680 [0.5 credit]  
Anthropology of "Mainstream" North America  
Examination of contemporary North American society. Topics may include social class, success myths, schooling, immigration, cities, the self, television, romance, youth sub cultures; how what is seen as "mainstream" is determined. Lectures/discussion groups three hours a week.

ANTH 2690 [0.5 credit]  
Ethnography of a Selected Area  
Ethnography of a selected area. Area to be announced. Lectures and discussion three hours a week.

ANTH 2815 [0.5 credit]  
Selected Topics in Anthropology  
Selected topics in anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered. Lecture/discussion groups three hours a week.

ANTH 2825 [0.5 credit]  
Selected Topics in Anthropology  
Selected topics in anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered. Lectures/discussion groups three hours a week.

ANTH 2850 [0.5 credit]  
Development and Underdevelopment  
International development and its socio-cultural practices with consequences at local, national and international levels. Topics may include modernization, dependency, globalization, and development as discourse, political ecology, gender, indigenous knowledge, social movements, and non-governmental organizations. Includes: Experiential Learning Activity. Lectures and workshop three hours a week.

ANTH 2915 [0.5 credit]  
Course-Related Tutorials in Anthropology  
Consult the Department for information.

ANTH 2925 [0.5 credit]  
Course-Related Tutorials in Anthropology  
Consult the department for information.

ANTH 3005 [0.5 credit]  
Ethnographic Research Methods  
Broad overview of methods through lectures, discussion, and hands-on activities. Research design, ethics, participant-observation, interviewing and other methods, data analysis and ethnographic writing. Prepares students to apply methodological knowledge in careers and projects undertaken for the fourth-year honours research paper and/or ethnographic field course. Includes: Experiential Learning Activity. Precludes additional credit for ANTH 2003. Prerequisite(s): ANTH 2001 [1.0]. Lectures three hours a week.

ANTH 3007 [0.5 credit]  
History of Anthropological Theory  
Analysis of the development of anthropological thought since the end of the eighteenth to the mid-twentieth century. The development of various theoretical approaches within their historical, social, intellectual and biographical contexts. The implications of these issues may be explored through ethnographies. Precludes additional credit for ANTH 2005 and ANTH 3100. Prerequisite(s): ANTH 2001 [1.0]. Lectures three hours a week.

ANTH 3008 [0.5 credit]  
Contemporary Theories in Anthropology  
Contemporary trends in anthropological analyses. Discussion of anthropological theory in its contemporary, interdisciplinary context. Precludes additional credit for ANTH 3006 (no longer offered), ANTH 3100. Prerequisite(s): ANTH 2001. Lecture/discussion groups three hours per week.

ANTH 3010 [0.5 credit]  
Language, Culture, and Globalization  
Theoretical and methodological contributions of anthropology to the study of communicative practices in a variety of social and cultural contexts. Language practices, ideologies, and globalization as they intersect with culture, power, race, ethnicity, indigeneity, gender, nationhood and political economy. Prerequisite(s): second-year standing or permission of the instructor. Lecture three hours per week.
ANTH 3020 [0.5 credit]
Studies in Race and Ethnicity
Race, racism and ethnicity in Canada and internationally. Critical perspectives on race and ethnicity as they intersect with other social relations. Racism, Eurocentrism, Orientalism, nationalism, colonialism, international migration, citizenship, and diasporic cultures. Also listed as SOCI 3020.
Prerequisite(s): second-year standing or permission of the instructor.
Lectures three hours a week.

ANTH 3025 [0.5 credit]
Anthropology and Human Rights
Examines the concepts of "cultural relativism" and "universalism." What are human rights? Who has them? How do notions of "human rights" evolve? What about other, non-Western concepts of "individual," "collectivity," "rights" and "responsibilities"? What about human rights violations and abuses?.
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3027 [0.5 credit]
Studies in Globalization and Human Rights
Examination of the various dimensions and meanings of globalization and its relationship with human rights. Main emphasis will be on the implications of the emerging global economy for economic, social, political and cultural rights.
Also listed as SOCI 3027, PSCI 3802.
Prerequisite(s): 0.5 credit 2000-level ANTH, or SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or HUMR 1001 [1.0].
Lectures three hours a week.

ANTH 3035 [0.5 credit]
Science, Culture and Society: Social Studies of Science
Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.
Also listed as SOCI 3035.
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3037 [0.5 credit]
Studies in Information Systems and Social Power
Knowledge/power relations in historical and comparative perspective, with attention to information devices, techniques, and practices.
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3040 [0.5 credit]
The Global Middle Class
The growing numbers of people who could be considered "middle class" are central to both "cultural" and "economic" globalization. This course examines what it means to be middle class theoretically, historically, and cross-culturally. Prerequisite(s): second-year standing or permission of the instructor.
Lecture/discussion groups three hours a week.

ANTH 3045 [0.5 credit]
Children and Childhood in a Globalized World
A socio-historical and cross-cultural exploration of constructions, deconstructions, and the experience of childhood in Canada and internationally. Compulsory schooling, child labour, protection and regulation in law, the commodification and equalization of childhood, children's social movements, and the emergence of children's rights discourses. Also listed as SOCI 3045.
Prerequisite(s): 0.5 credit ANTH, or SOCI 1001 and SOCI 1002, or SOCI 1003 and third-year standing.
Lecture three hours a week.

ANTH 3215 [0.5 credit]
Selected Topics in Anthropology
Topics not ordinarily treated in the regular course program. The choice of topics varies from year to year. Check with the Department regarding the topic offered.
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3225 [0.5 credit]
Selected Topics in Anthropology
Topics not ordinarily treated in the regular course program. The choice of topics varies from year to year. Check with the Department regarding the topic offered.
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3310 [0.5 credit]
Studies in Medical Anthropology
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.
ANTH 3355 [0.5 credit]
Anthropology and the Environment
Environmental concerns affect everyone, unevenly. How does anthropology illuminate the cultural, social, political and ecological differentiation resulting from and constituting environmental processes? The range of responses considered may address issues of resource access and exploitation, as well as transnational transformations in the concept of nature.
Prerequisite(s): second-year standing or permission of the instructor.
Lectures three hours a week.

ANTH 3360 [0.5 credit]
Jokes, Humor, Laughter
Anthropological inquiries into the phenomenon of humor. Psychoanalytic, semiotic and phenomenological perspectives are applied to ethnographic materials from a variety of cultural contexts.
Lecture/discussion groups three hours per week.

ANTH 3510 [0.5 credit]
Ritual
Cross-cultural study of ritual, religious and secular, its role in various social processes and relation to other activities. Exploration of variability of ritual and the range of theories that have been developed to account for what ritual does, including intellectualist, functionalist and performative.
Prerequisite(s): second-year standing or permission of the instructor.
Lectures and discussion three hours a week.

ANTH 3550 [0.5 credit]
Studies in Visual Anthropology
Examination of the anthropological experience as reflected in film/video and still photography. A number of problems are considered, including selectivity, bias, the effect of the observer’s presence, and problems in reconstructing past events in film. Issues of media-literacy will be examined.
Precludes additional credit for ANTH 3107 (no longer offered).
Prerequisite(s): second-year standing or permission of the instructor.
Lectures three hours a week.

ANTH 3570 [0.5 credit]
Studies in Art, Culture and Society
Thematic investigation of genres, forms and styles of art, culture and society. Topics may include current debates on social structure and artistic creativity; ideology, cultural memory and politics, patronage and art; cross-cultural representations, taste, social mobility and art; modernism and the avant-garde. Also listed as SOCI 3570.
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3580 [0.5 credit]
Anthropology of Material Culture and Museums
How diverse societies are materialized in a wide range of cultural materials from clothing, housing and memorials to more ephemeral materializations such as food, gardens, dance, ritual props and music-making. Emphasis on museum practices and the cultural politics of display.
Prerequisite(s): second-year standing or permission of the instructor.
Lectures and discussion three hours a week.

ANTH 3600 [0.5 credit]
Studies in Anthropology and Indigenous Peoples
Problems in the interpretation and analysis of various forms of encounters between indigenous peoples and colonizing powers will be examined. Topics may include patterns and practices of contact, cultural syncretism, conquest, domination, relations of ruling, cultural hegemony, resistance and non-compliance.
Includes: Experiential Learning Activity
Precludes additional credit for ANTH 3109 (no longer offered).
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3800 [0.5 credit]
Studies in Applied and Participatory Anthropology
History, significant approaches, and key topics of applied anthropology and participatory research. Participatory and non-participatory anthropological research on social problems within activities of intervention, which may include policy processes, development projects, evaluation exercises, impact assessments, and advocacy work.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3915 [0.5 credit]
Course-Related Tutorials in Anthropology
Consult the Department for information.

ANTH 3925 [0.5 credit]
Course-Related Tutorials in Anthropology
Consult the Department for information.

ANTH 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
ANTH 4000 [0.5 credit]
Field Placement in Anthropology
This course is intended to provide students with practical experience through a field placement equivalent to one day a week. Students are responsible to secure their field placement in a relevant organization with the approval of a Faculty member acting as Field placement coordinator.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours Anthropology standing and permission of the Department.

ANTH 4005 [0.5 credit]
Health and Globalization
An anthropological examination of the health impacts of global processes, relationships, and movements. May include topics such as economic development and disease, migration and health, medical tourism, transnational reproduction, and the global circulation of bodies, organs, medical technologies, drugs, and pathogens.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4006 [0.5 credit]
Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology
Examination of the breadth of critical literature on ‘decolonizing methodologies’ within and adjacent to anthropology in the 20th and 21st centuries. The course will equip students with an in-depth understanding of critiques of the discipline’s methods and ethics while practicing an engaged anthropology.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours per week.

ANTH 4007 [0.5 credit]
Advanced Studies in Anthropological Theory and Methods
The course examines debates in theory and methodology currently facing the discipline through a survey of leading-edge issues and approaches.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4020 [0.5 credit]
Advanced Studies in Race and Ethnicity
An advanced seminar that explores selected topics in race and ethnicity in an international context. Specific topics will vary according to instructors’ research interests.
Also listed as SOCI 4020.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4036 [0.5 credit]
Science and Technology Studies: Selected Topics
Science and Technology Studies (STS) by focusing on a relevant topic. Topics may vary from year to year. Students should check with the Department regarding the topic offered.
Precludes additional credit for SOCI 4401 (no longer offered).
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4040 [0.5 credit]
Community Engagement Capstone
Students in the capstone will reflect on their engagement experiences and advance their critical understanding of community through a series of in-class activities and readings. Students will produce a public-facing artifact (e.g., blog, podcast, video) related to their experiences, potentially in collaboration with community partners.
Includes: Experiential Learning Activity
Also listed as SOCI 4171.
Prerequisite(s): ANTH 2180 and fourth year standing or permission of instructor.
Lecture, discussion and project work three hours per week.
ANTH 4200 [0.5 credit]
War, Security and Citizenship
Critical theoretical and multidisciplinary examination of violent conflict, security and citizenship. How wars produce a variety of abject and new subjects, create and reproduce citizenship hierarchies, and expand and contract citizenship entitlements. Also listed as SOCI 4200.
Prerequisite(s): fourth year standing.
Seminar three hours a week.

ANTH 4215 [0.5 credit]
Selected Topics in Anthropology
Topics not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the department regarding the topic offered.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4225 [0.5 credit]
Selected Topics in Anthropology
Topics not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the department regarding the topic offered.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4355 [0.5 credit]
Anthropology of Natural Resources
Anthropology of natural resources. Topics may include economies, ecologies, cultural and social dynamics of fishing, forestry, lands, mining, oil, wildlife, at varying analytical scales, including a critical examination of the term "natural resource" itself.
Prerequisite(s): third-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as ANTH 5355, for which additional credit is precluded.
Lectures and discussions three hours a week.

ANTH 4500 [0.5 credit]
Advanced Studies in Culture and Symbols
Contemporary debates in theory and methods regarding analysis of the symbolic processes.
Precludes additional credit for ANTH 4705 (no longer offered).
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4550 [0.5 credit]
Advanced Studies in Visual Anthropology
Exploration of media representations of the cultural other through student projects based on contemporary anthropological analysis of cross-cultural multimedia: video, photography, mapping and the Internet. The role of media in the dissemination of anthropological research and as the subject of anthropological analysis.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4560 [0.5 credit]
Economic Anthropology
Anthropology’s holistic, comparative and critical contribution to the study of livelihood. How practices and understandings of production, circulation, consumption, and property vary cross-culturally. Relevant theoretical debates including those among formalist (neo-classical), substantivist, Marxist, and interpretive approaches over the applicability of capitalist thinking.
Prerequisite(s): third-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as ANTH 5560, for which additional credit is precluded.
Seminar three hours a week.

ANTH 4570 [0.5 credit]
Political Anthropology
Can anthropology help us understand politics? Can ethnographic encounters help us approach political theory and political action differently? This seminar will focus on concepts (power, authority, equality) and practices (resistance, subjection, solidarity) through which anthropologists invite us to rethink the way we live together.
Prerequisite(s): third-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as ANTH 5570, for which additional credit is precluded.
Seminar three hours a week.

ANTH 4590 [1.0 credit]
Capstone Seminar in Globalization, Culture, and Power
This course is dedicated to developing individual student research projects. Through seminar discussions, these student projects will benefit from an introduction to research design and methodologies, analysis and interpretation, as well as issues surrounding ethics, representation, and knowledge production.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the BGINS Globalization, Culture and Power program with a minimum 9.0 GPA or permission of the instructor.
Seminar three hours a week.
ANTH 4610 [0.5 credit]
Advanced Studies in Indigenous Peoples
This research-based seminar focuses on specific conceptual and methodological issues pertaining to contemporary anthropological research involving Indigenous peoples and communities. Topical focus may vary from year to year.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4620 [0.5 credit]
Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
Research-based seminar that explores the issues and debates related to anthropological research in contemporary sub-Saharan Africa with emphasis on theoretical, methodological, analytical, ethical, practical and applied problems in anthropological research in that area.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4730 [0.5 credit]
Colonialism and Post-Colonialism
Comparative ethnographic and historical approaches to colonialism including topics such as the formation of colonial regimes, colonial governmentality, servile labour systems, missionization, anti-colonial resistance, cultural hybridization and post-colonial memory. Exploration of debates over the relation between colonialism and the production of social scientific knowledge.
Also listed as SOCI 4730.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4750 [0.5 credit]
Advanced Studies in Globalization and Citizenship
Selected topics on the confluence of processes of globalization, development and citizenship. Examination of debates about the meaning and impact of globalization on patterns of inequality and citizenship both internationally and within Canada, and about strategies for progressive development.
Also listed as SOCI 4750.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4780 [0.5 credit]
Anthropology of Personhood
Exploration of anthropological approaches to personhood and diversity in constructions of the self in various socio-cultural and historical contexts.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4900 [1.0 credit]
Honours Research Paper in Anthropology
This course offers Honours students the opportunity to write an original research paper in their final year of study. Supported by the HRP supervisor, students develop their projects through seminar discussion addressing issues of research design, ethics, methodology, anthropological analysis, interpretation, and representation.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing.

ANTH 4915 [0.5 credit]
Tutorial in Anthropology
Consult the Department for information.

ANTH 4925 [0.5 credit]
Tutorial in Anthropology
Consult the Department for information.

Applied Linguistics and Discourse Studies
This section presents the requirements for programs in:
- Linguistics and Discourse Studies B.A. Combined Honours
- Applied Linguistics and Discourse Studies B.A. Honours
- Applied Linguistics and Discourse Studies B.A. Combined Honours
- Applied Linguistics and Discourse Studies B.A.
- Minor in Applied Linguistics and Discourse Studies
- Minor in Professional Writing
- Certificate in the Teaching of English as a Second Language (CTESL)
- Certificate in Professional Writing
- Post-Baccalaureate Diploma in Professional Writing
- Specialization in Teaching English in Global Contexts B.G.In.S. Honours
- Stream in Teaching English in Global Contexts B.G.In.S.

Linguistics and Discourse Studies B.A. Combined Honours (20.0 credits)
Honours Linguistics and Honours Applied Linguistics and Discourse Studies are combined into the Linguistics and Discourse Studies B.A. Combined Honours.

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.5 credits in:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>LING 1001</td>
<td>0.5</td>
<td>Introduction to Linguistics I</td>
</tr>
<tr>
<td>ALDS 1001</td>
<td>0.5</td>
<td>Language Matters: Introduction to ALDS</td>
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<tr>
<td>LING 1002</td>
<td>0.5</td>
<td>Introduction to Linguistics II</td>
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</tbody>
</table>

2. 1.0 credit in:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LING 2005</td>
<td>0.5</td>
<td>Linguistic Analysis</td>
</tr>
<tr>
<td>LING 2007</td>
<td>0.5</td>
<td>Phonetics</td>
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</table>

3. 2.0 credits in:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>LING 3004</td>
<td>0.5</td>
<td>Syntax I</td>
</tr>
<tr>
<td>LING 3005</td>
<td>0.5</td>
<td>Morphology I</td>
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</table>
B.A. Honours (20.0 credits)

Applied Linguistics and Discourse Studies

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
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<tbody>
<tr>
<td>1.</td>
<td>1.0 credit in LING at the 4000 level</td>
<td>1.0</td>
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<tr>
<td>2.</td>
<td>1.0 credit in LING, excluding LING 1100</td>
<td>1.0</td>
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<tr>
<td>3.</td>
<td>1.0 credit in:</td>
<td>1.0</td>
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<tr>
<td></td>
<td>ALDS 2201 [0.5]</td>
<td>Analysis of Oral Language Use</td>
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<tr>
<td></td>
<td>ALDS 2202 [0.5]</td>
<td>Analysis of Written Language Use</td>
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<tr>
<td>4.</td>
<td>1.0 credit in ALDS at the 3000 level or above</td>
<td>1.0</td>
</tr>
<tr>
<td>5.</td>
<td>1.0 credit in ALDS at the 4000 level</td>
<td>1.0</td>
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<tr>
<td>6.</td>
<td>2.5 credits in ALDS</td>
<td>2.5</td>
</tr>
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</table>

B. Additional Requirements (8.0 credits)

- 2.5 credits in ALDS which may include:
  - ALDS at the 4000-level
  - ALDS at the 3000 level or above
- 1.0 credit in LING, excluding LING at the 4000 level
- 1.0 credit in ALDS
- 1.0 credit in ALDS
- 1.0 credit in:
  - ALDS 3201 [0.5] Cross-Cultural Communication
  - ALDS 3202 [0.5] Sociolinguistics
  - ALDS 3401 [0.5] Research and Theory in Academic Writing
  - ALDS 3402 [0.5] Research and Theory in Workplace Writing
  - ALDS 3405 [0.5] Second Language Writing
  - LING 3603 [0.5] Child Language
  - ALDS 3604 [0.5] Communication Disorders II
  - ALDS 3701 [0.5] Corpus Linguistics
  - ALDS 3705 [0.5] Adult Literacy
  - ALDS 3706 [0.5] Discourse Analysis
  - ALDS 3903 [0.5] Special Topic in Applied Linguistics and Discourse Studies
- 2.0 credits in Applied Linguistics and Discourse Studies at the 4000-level
- 2.5 credits in Applied Linguistics and Discourse Studies, which may include:
  - FYSM 1204 [1.0] Language and Identity
  - FYSM 1205 [1.0] Language and Power

B. Credits Not Included in the Major CGPA (11.0 credits)

- 5.0 credits not in ALDS or LING | 5.0 |

Total Credits: 20.0

Applied Linguistics and Discourse Studies B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

- 1.0 credit in:
  - LING 1001 [0.5] Introduction to Linguistics I
  - ALDS 1001 [0.5] Language Matters: Introduction to ALDS

B. Additional Requirements (14.0 credits)

- 6.0 credits in free electives (maximum 2.5 in ALDS)
- The requirements for the other discipline must be met
- 2.0 credits in ALDS which may include:
  - FYSM 1204 [1.0] Language and Identity
  - FYSM 1205 [1.0] Language and Power

Total Credits: 20.0

Applied Linguistics and Discourse Studies B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

- 1.0 credit in:
  - LING 1001 [0.5] Introduction to Linguistics I
  - ALDS 1001 [0.5] Language Matters: Introduction to ALDS

B. Additional Requirements (14.0 credits)

- 6.0 credits in free electives (maximum 2.5 in ALDS)
- The requirements for the other discipline must be met
- 2.0 credits in ALDS which may include:
  - FYSM 1204 [1.0] Language and Identity
  - FYSM 1205 [1.0] Language and Power

Total Credits: 20.0
Minor in Applied Linguistics and Discourse Studies (4.0 credits)
Open to all undergraduate degree students in programs other than Applied Linguistics and Discourse Studies.

Requirements
1. 1.0 credit in:
   - ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   - LING 1001 [0.5] Introduction to Linguistics I
2. 1.0 credit in:
   - ALDS 2201 [0.5] Analysis of Oral Language Use
   - ALDS 2202 [0.5] Analysis of Written Language Use
3. 1.0 credit from:
   - ALDS 2203 [0.5] Linguistic Theory and Second-Language Learning
   - ALDS 2604 [0.5] Communication Disorders I
   - ALDS 2704 [0.5] Bilingualism
   - ALDS 2705 [0.5] Language and Power
   - FYSM 1204 [1.0] Language and Identity
   - FYSM 1205 [1.0] Language and Power
   - LING 2007 [0.5] Phonetics
   - LING 3603 [0.5] Child Language
4. 1.0 credit in ALDS at the 3000-level or higher.
5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Certificate in Professional Writing (5.0 credits)
Students may declare only one of the Professional Writing Certificate or the Professional Writing Minor. To be taken concurrently with an Honours degree, provided the Major CGPA in the Honours program is at least 7.5. Open to all undergraduate students not in the English BA Honours Concentration in Creative Writing or the English BA Honours Concentration in Drama Studies.

Requirements
1. 1.0 credit in:
   - ENGL 1008 [0.5] English Grammar: Fundamentals
   - ALDS 2202 [0.5] Analysis of Written Language Use
2. 1.0 credit in:
   - ALDS 3402/ENGL 3805 Research and Theory in Workplace Writing
   - ALDS 3414/ENGL 3805 Transition to Professional Writing and Editing
3. 2.0 credits in:
   - ENGL 4135 [0.5] Studies in Publishing
   - ALDS 4404/ENGL 4407 Writing and Knowledge-Making in the Professions
   - ALDS 4414/ENGL 4407 Professional Writing I
   - ALDS 4415/ENGL 4407 Professional Writing II

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 5.0

Certificate in the Teaching of English as a Second Language (CTESL) (5.0 credits)
May be taken following successful completion of any undergraduate degree or concurrently with an Honours degree, provided the Major CGPA in the Honours program is at least 7.0.

Graduation
A candidate for the CTESL must obtain a grade of C or higher in all courses taken at Carleton University under the CTESL program.

Requirements
1. 1.0 credit in:
   - LING 1001 [0.5] Introduction to Linguistics I
   - ALDS 1001 [0.5] Language Matters: Introduction to ALDS
2. 1.0 credit in:
   - ALDS 4206 [1.0] Practicum in Teaching ESL
   - ALDS 4305 [0.5] Teaching English Language: Methodology I
   - ALDS 4306 [0.5] Teaching English as a Second Language: Methodology II
   - ALDS 4602 [0.5] Second Language Acquisition
   - ALDS 4801 [0.5] Major Structures of English
3. 1.0 credit in ALDS, or in LING from the courses below, or any other course approved by the Supervisor of CTESL:
   - LING 2005 [0.5] Linguistic Analysis
   - LING 2007 [0.5] Phonetics
   - LING 3601 [0.5] Language Processing and the Brain
   - LING 3603 [0.5] Child Language

Total Credits 5.0
### B.G.In.S. Honours (20.0 credits)

#### Contexts

Specialization in Teaching English in Global Contexts

<table>
<thead>
<tr>
<th>A. Credits Included in the Major CGPS (12.0 credits)</th>
<th>4.5</th>
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<tbody>
<tr>
<td>GINS 1000 [0.5] Global History</td>
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#### Stream in Teaching English in Global Contexts B.G.In.S. (15.0 credits)

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<tr>
<th>A. Credits Included in the Major CGPS (8.0 credits)</th>
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</table>
First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada.

The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Regulations**

**Post-Baccalaureate Diploma**

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

**Definition**

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

**Program Requirements**

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.
English as a Second Language Requirement
In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation
All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation
• A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
• A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
• Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees
• Bachelor of Arts (B.A.)(Honours)
• Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements (C.T.E.S.L.)
To be eligible for admission to the 5.0 credit CTESL program students must have already obtained a degree and have extensive experience in teaching, or are registered in an Honours degree at Carleton University with an overall CGPA of 7.00 (B-) or higher. Students registered in the concurrent CTESL program who fail to complete their degree cannot receive the CTESL.

Admission Requirements
To be eligible for admission to the Certificate in Professional Writing, applicants must present:
• Second-year standing in any Honours degree, excluding the English BA Honours Concentration in Creative Writing or the English BA Honours Concentration in Drama Studies;
• A Major CGPA of 7.5 or higher;
• A statement of purpose and a sample of their academic or professional writing, and;
• Permission of the Professional Writing Program.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma
• Post-Baccalaureate Diploma in Professional Writing
To be eligible for admission to the Post-Baccalaureate Diploma in Professional Writing students must normally present an honours undergraduate degree with a GPA of 8.0 or higher.

Applied Linguistics and Discourse Studies (ALDS) Courses
**ALDS 1001 [0.5 credit]**
**Language Matters: Introduction to ALDS**
Core topics in applied linguistics and discourse studies. First and second language acquisition; sign language; language teaching and assessment; language in society; language, identity and power; discourse analysis; written language and literacy.
Lectures three hours a week.

**ALDS 2201 [0.5 credit]**
**Analysis of Oral Language Use**
Introduction to the analysis of oral language in use; distinctions between spoken and written language; theoretical and methodological approaches such as speech act theory, ethnography of communication, conversation analysis, and discourse analysis; classroom interaction; interaction in first- and second-language acquisition; analysis of spoken language corpora.
Includes: Experiential Learning Activity
Prerequisite(s): ALDS 1001 or permission of the instructor.
Lectures three hours a week.

**ALDS 2202 [0.5 credit]**
**Analysis of Written Language Use**
Introduction to the analysis of written language in use, including theoretical and methodological approaches such as rhetorical genre studies (including academic and workplace writing); adult literacy studies; text-structure analysis; discourse analysis (including critical discourse analysis); analysis of textual corpora.
Includes: Experiential Learning Activity
Prerequisite(s): ALDS 1001 or FYSM 1004 or ENGL 1000 or COMS 1000 or COMS 1001 or permission of the instructor.
Lectures three hours a week.

**ALDS 2203 [0.5 credit]**
**Linguistic Theory and Second-Language Learning**
Critical study of linguistic theory and description applied to second-language learning; a brief consideration of similarities and differences in first- and second-language development, bilingualism and types of linguistic error and their significance.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures three hours a week.

**ALDS 2604 [0.5 credit]**
**Communication Disorders I**
A survey course highlighting congenital, developmental and acquired disorders of speech, language, fluency, hearing and voice; prevalence, current research, assessment and intervention approaches for each disorder will be presented.
Also listed as LING 2604.
Prerequisite(s): second-year standing, or permission of the instructor.
Lectures three hours a week.

**ALDS 2704 [0.5 credit]**
**Bilingualism**
The linguistic nature of bilingualism. The structure of bilingual societies and the relation between societal and individual bilingualism. The role of bilingualism in language education.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures three hours a week.

**ALDS 2705 [0.5 credit]**
**Language and Power**
How social conditions engender different linguistic choices. Attention to linguistic resources for expressing ideological beliefs and for maintaining and reinforcing power structures in institutional and social sites.
Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1205.
Prerequisite(s): second-year standing.
Lectures three hours a week.
ALDS 3201 [0.5 credit]
Cross-Cultural Communication
Introduction to cross-cultural communication in social, academic and professional settings. Application of theoretical perspectives to case study analysis; pedagogical/training topics as relevant to students’ disciplines; collaborative work with other language and cultural groups as feasible.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing, and one of LING 1001 or ALDS 1001, or permission of the School.
Lectures three hours a week.

ALDS 3202 [0.5 credit]
Sociolinguistics
The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.
Also listed as LING 3702.
Precludes additional credit for ALDS 2701 (no longer offered).
Prerequisite(s): ALDS 1001 and third-year standing.
Lectures three hours a week.

ALDS 3205 [0.5 credit]
English as a Global Language
The origins, development and globalization of the English language. Establishment of Standard English; spread of English in the Inner circle and in expanding circles; world Englishes; linguistic features of English varieties. English as a global language; learning and teaching English as an international language.
Includes: Experiential Learning Activity
Prerequisite(s): ALDS 1001 and LING 1001.
Seminars three hours a week.

ALDS 3301 [0.5 credit]
Introduction to Deaf Studies
A critical introduction to Deaf community and culture as they relate to a social model of disability, to ethnicity, and to issues of diversity and inclusion. Discourse analysis of research and policy in education for Deaf students from early childhood and beyond.
Includes: Experiential Learning Activity
Also listed as DBST 3301.
Precludes additional credit for ALDS 3903A if taken in Winter term 2016 or Winter term 2018, and ALDS 4906A, if taken in Fall term 2016.
Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or enrolment in the Minor in Disability Studies.
Seminars three hours a week.

ALDS 3401 [0.5 credit]
Research and Theory in Academic Writing
Study of contemporary research and theory (1970s to present) on academic writing in elementary, secondary and post-secondary school, with emphasis on writing in university. Consideration of what academic writing entails, how writing fosters learning, and how instruction can help students develop their writing abilities.
Includes: Experiential Learning Activity
Also listed as ENGL 3908.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ALDS 3402 [0.5 credit]
Research and Theory in Workplace Writing
Study of contemporary research and theory (1980s to present) in writing in workplace settings. Consideration of how writing is used in accomplishing work, how novices learn to write effectively, and what the implications are for pedagogy.
Includes: Experiential Learning Activity
Also listed as ENGL 3909.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ALDS 3405 [0.5 credit]
Second Language Writing
Theory and practice of second language (L2) writing: how people learn to write in a second language, and how L2 writing courses for specific groups of learners can be designed.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 3604 [0.5 credit]
Communication Disorders II
In-depth evaluation of current psycholinguistic models of processes underlying communication disorders and the biomedical support for such models. Emphasis on contrasting developmental disorders with acquired disorders. Additional exploration of other modalities (sign language, reading).
Also listed as LING 3604.
Precludes additional credit for LING 3009 Section "A", if taken Winter 2013.
Prerequisite(s): ALDS 2604 or LING 2604.
Lectures three hours a week.
ALDS 3701 [0.5 credit]
Corpus Linguistics
Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language. Includes: Experiential Learning Activity
Also listed as LING 3701.
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 3705 [0.5 credit]
Adult Literacy
The extent and social contexts of restricted literacy in Canadian society; approaches to and debates surrounding the teaching and learning of adult literacy.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ALDS 3706 [0.5 credit]
Discourse Analysis
Principles of and studies in discourse analysis, including both conversational and textual/documentary analysis. The major focus is on language use in structuring social relationships.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 3900 [1.0 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Applied Linguistics and Discourse Studies.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

ALDS 3901 [0.5 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Applied Linguistics and Discourse Studies.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

ALDS 3903 [0.5 credit]
Special Topic in Applied Linguistics and Discourse Studies
Selected topics in Applied Linguistics and Discourse Studies not ordinarily treated in the regular course program.
Lectures three hours per week.

ALDS 4201 [0.5 credit]
Language Testing
The principles of test construction as applied to testing language proficiency, achievement and aptitude. Structural, notional, discrete point and integrative tests. Diagnostic assessment of language development, language disorders, and literacy. Students are expected to create, analyze and evaluate language tests.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 4203 [0.5 credit]
Methods and Practice in Language Pedagogy
Integrates theory and description of language learning and teaching with practical work in one of the languages offered by the School. Requires observation in a language classroom, along with practical work facilitating in-class or language lab activities, or developing teaching materials.
Includes: Experiential Learning Activity
Precludes additional credit for ALDS 3803 (no longer offered).
Prerequisite(s): permission of the language instructor for the language class in which practical work will be conducted; proficiency in the language in question, as determined by either completion of the prerequisites for 4010 of that language, or assessment by the language instructor; or permission of the School.
Seminars and in-class practicum.

ALDS 4206 [1.0 credit]
Practicum in Teaching ESL
Investigates the processes of classroom learning with observation and some teaching experience in ESL classes. Normally taken concurrently with ALDS 4305 and ALDS 4306.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the concurrent CTESL program, or enrolment in the post-graduate CTESL program.

ALDS 4207 [0.5 credit]
ESL Literacy
The nature of everyday literacy and literacy skills. Analyzing the structure of everyday literacy texts and demands. Issues in literacy for second-language learners.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.
ALDS 4208 [0.5 credit]  
Languages for Specific Purposes  
An introduction to Languages for Specific Purposes - language instruction tailored to specific groups of learners, e.g., English for Science, for Business, for the Workplace, for Academic Purposes. Research and teaching methodology. Emphasis on EAP/ESP research and instruction at Carleton.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.  
Also offered at the graduate level, with different requirements, as ALDS 5208, for which additional credit is precluded.  
Lectures three hours a week.

ALDS 4209 [0.5 credit]  
Teaching English as a Foreign Language: Methodology for Global Contexts  
An introduction to the principles of teaching language in a foreign-language context; review of teaching approaches; practical examination, development and evaluation of instructional materials.  
Includes: Experiential Learning Activity  
Prerequisite(s): ALDS 4305 and fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, the BGInS Specialization in Teaching English in Global Contexts, or permission of the instructor.  
Lectures three hours a week.

ALDS 4305 [0.5 credit]  
Teaching English Language: Methodology I  
Classification of classroom teaching methods and materials; adaptation of teaching materials for particular situations; creation of teaching materials; teaching techniques and strategies.  
Includes: Experiential Learning Activity  
Precludes additional credit for ALDS 4205.  
Prerequisite(s): fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, or the BGInS Specialization in Teaching English in Global Contexts, or permission of the instructor.  
Seminars four hours a week.

ALDS 4306 [0.5 credit]  
Teaching English as a Second Language: Methodology II  
Classification of classroom teaching methods and materials used in an international context; adaptation of teaching materials for particular situations; creation of teaching materials for global English language education; teaching techniques and strategies.  
Includes: Experiential Learning Activity  
Precludes additional credit for ALDS 4205.  
Prerequisite(s): ALDS 4305 and fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, or permission of the instructor.  
Seminars four hours a week.

ALDS 4308 [0.5 credit]  
English for Specific Purposes  
An introduction to English for Specific Purposes – English language instruction tailored to specific groups of learners (e.g., English for Academic Purposes, and English for a range of specific occupational and professional purposes). This course explores effective practices in course and materials design.  
Prerequisite(s): third-year standing in the BGInS Honours Specialization in Teaching English in Global Contexts, or enrolment in the CTESL program, or permission of the instructor.  
Seminars three hours a week.

ALDS 4403 [0.5 credit]  
Writing and Knowledge-Making in the Disciplines  
The role of writing in constructing knowledge in academic disciplines, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different disciplines shape their writing in distinctive ways and what implications this holds for pedagogy.  
Includes: Experiential Learning Activity  
Also listed as ENGL 4909.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

ALDS 4404 [0.5 credit]  
Writing and Knowledge-Making in the Professions  
The role of writing in constructing knowledge in the professions, as viewed from contemporary socio-cultural perspectives. How the goals, values, and assumptions of different professions shape their writing in distinctive ways and the implications for theory, research, and practice.  
Includes: Experiential Learning Activity  
Also listed as ENGL 4004.  
Prerequisite(s): third-year standing or permission of the instructor.  
Seminars three hours a week.

ALDS 4405 [0.5 credit]  
Teaching Writing in School and the Workplace  
Introduction to approaches for teaching writing in elementary and secondary school, in university, and in the workplace, with a focus on socio-cultural theories of language and learning. Discussion of applications of these approaches to classroom and workplace teaching.  
Includes: Experiential Learning Activity  
Also listed as ENGL 4515.  
Prerequisite(s): third-year standing, or permission of the instructor.  
Lectures three hours a week.
ALDS 4414 [0.5 credit]
Professional Writing I
The role of writing in government and NGOs.
Consideration of various genres, practices and styles of
government and NGO writing, including, grant proposals,
administrative reports, press releases, briefing notes,
recommendation reports.
Includes: Experiential Learning Activity
Also listed as ENGL 4414.
Prerequisite(s): third-year standing or permission of the
instructor.
Seminars three hours a week. May include a work
placement.

ALDS 4415 [0.5 credit]
Professional Writing II
The role of writing in science-related fields and in the
health professions. Consideration of various genres,
practices and styles of scientific and health-related writing,
including, research reports, grant proposals, case reports,
popularizations of science, press releases.
Includes: Experiential Learning Activity
Also listed as ENGL 4415.
Prerequisite(s): third-year standing or permission of the
instructor.
Seminars three hours a week. May include a work
placement.

ALDS 4602 [0.5 credit]
Second Language Acquisition
Current issues in second language acquisition; factors
influencing success in acquiring a second or additional
language, discourse and culture. Emphasis on theoretical
concepts, empirical research, and practical implications for
language teaching.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics
and Discourse Studies, or in Linguistics, or enrolment in
the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 4606 [0.5 credit]
Statistics for Language Research
Application of statistical procedures to analysis of
language data and to problems of measurement
in experimental linguistics, applied linguistics,
psycholinguistics, and related fields.
Includes: Experiential Learning Activity
Also listed as LING 4606.
Precludes additional credit for ALDS 4906/LING 4009
Section "B" if taken Winter 2015 or Winter 2016.
Prerequisite(s): third-year standing in Linguistics or
Applied Linguistics and Discourse Studies or Cognitive
Science, or permission of the instructor.
Also offered at the graduate level, with different
requirements, as ALDS 5604 and LING 5606, for which
additional credit is precluded.
Seminars three hours a week.

ALDS 4709 [0.5 credit]
Systemic-Functional Linguistics
Functions of language in the exchange of meanings
between people in a wide variety of communicative
situations. Semantic and syntactic resources at risk in
these different contexts. Interactions between language
and the social context.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics
and Discourse Studies, or Linguistics, or Journalism, or
Communication Studies, or permission of the instructor.
Also offered at the graduate level, with different
requirements, as ALDS 5102, for which additional credit is
precluded.
Lectures three hours a week.

ALDS 4801 [0.5 credit]
Major Structures of English
This course is intended to familiarize students with the
structure of the English language, highlighting important
contrasts between English and other languages as well as
grammatical difficulties for ESL learners.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics
and Discourse Studies, or in Linguistics, or enrolment in
the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 4900 [1.0 credit]
Independent Study
Permits fourth-year Honours students to pursue their
interests in a selected area of applied linguistics and
discourse studies.
Prerequisite(s): permission of the instructor.

ALDS 4901 [0.5 credit]
Independent Study
Permits fourth-year Honours students to pursue their
interests in a selected area of applied linguistics and
discourse studies.
Prerequisite(s): permission of the instructor.

ALDS 4906 [0.5 credit]
Special Topic in Applied Linguistics and Discourse
Studies
Selected topics in applied linguistics and discourse
studies. Contents of this course vary from year to year.
Lectures three hours a week.
ALDS 4908 [1.0 credit]  
Honours Project in Applied Linguistics and Discourse Studies  
Individually designed intensive practicum or research experience. May involve (a) practicum or work study placement in writing or literacy studies, language syllabus design or test development; (b) intensive research activity in an area of Applied Linguistics and Discourse Studies. All projects include substantial written work. Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in Applied Linguistics and Discourse Studies, a CGPA of 9.00 or better, or permission of the School.  
Tutorial hours arranged.

Archaeology (Minor)  
This section presents the requirements for programs in:  
• Minor In Archaeology  

Minor In Archaeology (4.0 credits)  
This minor is available to all undergraduate degree students.  
Requirements:  
1. 1.0 credit in:  
   - ARCY 1008 [0.5] Introduction to Archaeology I  
   - ARCY 1009 [0.5] Introduction to Archaeology II  
   Or  
   - CLCV 1008 [0.5] Introduction to Archaeology I  
   - CLCV 1009 [0.5] Introduction to Archaeology II  
2. 1.0 credit in ARCY or approved electives at the 2000 level  
3. 1.0 credit in ARCY or approved electives at the 3000 level  
4. 1.0 credit in ARCY or approved electives at any level  
5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0  

Approved Archaeology Electives  
Other courses may be substituted for those specified below, when material on archaeology is central to the course. Such substitutions must be individually approved by the Greek and Roman Studies Program Coordinator.

Note: "R" designates that the course is repeatable.

Anthropology  
ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology  
ANTH 3580 [0.5] Anthropology of Material Culture and Museums  

Art History  
ARTH 1100 [0.5] Art and Society: Prehistory to the Renaissance  
ARTH 1101 [0.5] Art and Society: Renaissance to the Present  
ARTH 1200 [0.5] History and Theory of Architecture: Prehistory to 1500  
ARTH 1201 [0.5] History and Theory of Architecture: 1500 to Present  
ARTH 2102 [0.5] Greek Art and Archaeology  
ARTH 2105 [0.5] Roman Art and Archaeology  
ARTH 2202 [0.5] Medieval Architecture and Art  
ARTH 2310 [0.5] Architecture of the Early Modern World [1400-1750]  
ARTH 2510 [0.5] Architecture of the 18th and 19th Centuries  
ARTH 3102 [0.5] Studies in Greek Art  
ARTH 3105 [0.5] Studies in Roman Art  

Biology  
BIOL 2001 [0.5] Animals: Form and Function  
BIOL 2005 [0.5] Human Biology  

Chemistry  
CHEM 1007 [0.5] Chemistry of Art and Artifacts  

Digital Humanities  
DIGH 2035 [0.5] Technology, Culture and Society  

Greek and Roman Studies  
CLCV 2303/ARTH 2Greek Art and Archaeology  
CLCV 2304/ARTH 2Greek Art and Archaeology  
CLCV 2305/TSES 2Ancient Science and Technology  
CLCV 3301 [0.5] Field Work I: Greek and Roman World (R)  
CLCV 3306/ARTH 3Studies in Greek Art (R)  
CLCV 3307/ARTH 3Studies in Greek Art (R)  
CLCV 3400 [0.5] Greek and Roman Studies Abroad (R)  
CLCV 4000 [0.5] Field Work II: Greek and Roman World (R)  

Earth Sciences  
ERTH 2312 [0.5] Paleontology  
ERTH 2401 [0.5] Dinosaurs  
ERTH 2415 [0.5] Natural Disasters  
ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds  
ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians  
ERTH 3113 [0.5] Geology of Human Origins  

Geography  
GEOG 1010 [0.5] Global Environmental Systems  
GEOG 2014 [0.5] The Earth's Surface  
GEOG 3102 [0.5] Geomorphology  
GEOG 3108 [0.5] Soil Properties  

Geomatics  
GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution  
GEOM 2007 [0.5] Points, Lines and Polygons  
GEOM 3002 [0.5] Introduction to Remote Sensing  

Religion  
RELI 3732 [0.5] Studies in Greek Art  
RELI 3733 [0.5] Studies in Roman Art  

Sociology  
SOCI 2035 [0.5] Technology, Culture and Society  

Technology, Society, Environment Studies  
TSES 2305/CLCV 2Ancient Science and Technology  

Regulations  
In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students, including the process of
Academic Performance Evaluation. See the Academic Regulations of the University section of this Calendar.

Archaeology (ARCY) Courses

**ARCY 1008 [0.5 credit]**
Introduction to Archaeology I
Introduction to the history, theory and practice of field archaeology. Excavations from all time periods and global regions will be discussed. Focus will be placed on excavation methods and technology, including dating, that enhance understanding of sites both on land and underwater.
Also listed as CLCV 1008.
Precludes additional credit for CLCV 2300 (no longer offered).
Lecture three hours a week

**ARCY 1009 [0.5 credit]**
Introduction to Archaeology II
Continues the examination of various aspects of field archaeology begun in ARCY 1008 (also CLCV 1008). This course places greater focus on recent approaches to the interpretation of remains. These include environmental, cognitive and bioarchaeological approaches.
Also listed as CLCV 1009.
Precludes additional credit for CLCV 2300 (no longer offered).
Lecture three hours a week.

**ARCY 3000 [0.5 credit]**
Archaeological Field Work I
Students will participate for a minimum of three weeks on an archaeological field project (ie. excavation or survey). They will learn archaeological documentation and the analysis, recording, and processing of finds. The field project may be anywhere in the world and any time period.
Includes: Experiential Learning Activity
Prerequisite(s): ARCY 1008 and ARCY 1009 or CLCV 1008 and CLCV 1009 or CLCV 2300 (no longer offered) and permission of the unit. Permission of the unit is required to repeat this course.
Field work

**ARCY 3301 [0.5 credit]**
Field Work I: Greek and Roman World
Students will participate for a minimum of three weeks on an archaeological field project (ie. excavation or survey) relevant to the Greek and Roman world. They will learn archaeological documentation and the analysis, recording, and processing of finds.
Includes: Experiential Learning Activity
Also listed as CLCV 3301.
Prerequisite(s): ARCY 1008 and ARCY 1009 or CLCV 1008 and CLCV 1009 or CLCV 2300 (no longer offered) and permission of the unit. Permission of the unit is required to repeat this course.
Field work

**ARCY 4000 [0.5 credit]**
Field Work II: Greek and Roman World
Students participate for a minimum of three weeks in a position of responsibility (for example, as a trench supervisor or lab assistant) on an archaeological field project relevant to the Greek and Roman world.
Includes: Experiential Learning Activity
Also listed as CLCV 4000.
Prerequisite(s): 0.5 credit in fieldwork at third year level and permission of the unit. Permission of the unit is required to repeat this course.
Field work

**ARCY 4100 [0.5 credit]**
Archaeological Field Work II
Students participate for a minimum of three weeks in a position of responsibility on an archaeological field project (eg. trench supervisor or lab assistant). The field project may be anywhere in the world and any time period.
Includes: Experiential Learning Activity
Prerequisite(s): 0.5 credit in fieldwork at third year level and permission of the unit. Permission of the unit is required to repeat this course.
Field work

Architectural Studies

This section presents the requirements for programs in:

- Design B.A.S.
- Urbanism B.A.S. Honours
- Conservation and Sustainability B.A.S. Honours

The Azrieli School of Architecture and Urbanism cooperates with the School for Studies in Art and Culture in offering the History and Theory of Architecture B.A. and B.A. Honours programs (see the Art History program section of this Calendar for details).

Course Categories

**Urbanism Core Electives**

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<td>Recycling Architecture in Canada and Abroad</td>
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<td>Twentieth-Century Architecture</td>
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**Conservation and Sustainability Core Electives**

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**Design Core Electives**

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<td>ARCH 4505 [0.5]</td>
<td>Seminar in Theory and History</td>
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<td>ARTH 2202 [0.5]</td>
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Category 2: Complementary Studies

**ARCC 3004 [0.5]** Workshop: Energy and Form
**ARCC 3305 [0.5]** Materials Application
**ARCC 3902 [0.5]** Architectural Technology
**ARCC 4100 [0.5]** Lighting for Architecture
**ARCC 4103 [0.5]** Energy and Form
**ARCC 4207 [0.5]** Advanced Building Assessment

**ARCC 4300 [0.5]** Building Materials
**ARCC 4400 [0.5]** Design for Construction
**ARCC 4801 [0.5]** Architectural Technology
**ARCH 2006 [0.5]** Theory and History of Design
**ARCH 2101 [0.5]** Industrial Design Analysis
**ARCH 3208 [0.5]** Urban Space Architecture
**ARCH 4205 [0.5]** User-Building Synopsis
**ARCH 4206 [0.5]** Recycling Architecture in Canada and Abroad

**ARCH 4801 [0.5]** Special Topics
**ARCH 5003 [0.5]** Design and Culture Workshop
**ARCN 3003 [0.5]** Theatre Production
**ARCN 3206 [0.5]** Computer Applications
**ARCN 3302 [0.5]** The Anatomy of Architecture
**ARCN 3303 [0.5]** Architecture as Painting
**ARCN 3400 [0.5]** Visual Design
**ARCN 3401 [0.5]** Photography
**ARCN 4103 [0.5]** Digital Fabrication and Theory
**ARCU 3203 [0.5]** Landscape Architecture
**ARCU 3405 [0.5]** Urban Design
**ARCU 3409 [0.5]** City Organization and Planning Processes
**ARCU 3902 [0.5]** Urban Studies
**ARCU 4400 [0.5]** City Organization and Planning
**ARCU 4808 [0.5]** Independent Study
**ARCU 4901 [0.5]** Topics in Applied Urbanism
**ARTH 1100 [0.5]** Art and Society: Prehistory to the Renaissance
**ARTH 1101 [0.5]** Art and Society: Renaissance to the Present
**ARTH 1105 [0.5]** Art as Visual Communication
**ARTH 2002 [0.5]** Canadian Historical Art
**ARTH 2003 [0.5]** Canadian Twentieth-Century and Contemporary Art
**ARTH 2005 [0.5]** Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
**ARTH 2006 [0.5]** Arts of the First Peoples: The Southwest, the West Coast and the Arctic
**ARTH 2007 [0.5]** Asian Art
**ARTH 2008 [0.5]** Inuit Art
**ARTH 2009 [0.5]** Art Live: Art History Workshop
**ARTH 2106 [0.5]** Chinese Art and Visual Culture
**ARTH 2108 [0.5]** Art Worlds
**ARTH 2300 [0.5]** Italian Renaissance Art
**ARTH 2404 [0.5]** Art of the 17th and 18th Centuries
**ARTH 2502 [0.5]** Art of the 19th Century
**ARTH 2600 [0.5]** Modern European Art 1900-1945
**ARTH 2601 [0.5]** History and Theory of Photography
**ARTH 2710 [0.5]** Experiencing Architecture
**ARTH 2807 [0.5]** Philosophy of Art
**ARTH 3809 [0.5]** A Closer Look at Art and Visual Culture
**ARTH 3810 [0.5]** A Closer Look at the Designed Environment
**ARTH 4202 [0.5]** Topics in Medieval Architecture and Art
### Program Requirements

#### Design

**B.A.S. (20.0 credits)**

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**Total Credits** 20.0

#### Urbanism

**B.A.S. Honours (20.0 credits)**

**A. Credits Included in the Major (15.0 credits)**

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<td>ARCS 3304 [1.0]</td>
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<td>ARCS 4105 [1.5]</td>
<td>Comprehensive Studio</td>
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<td>ARCS 4304 [1.0]</td>
<td>Urbanism Studio 5: Global Perspectives</td>
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<td>ARCU 3100 [0.5]</td>
<td>The Morphology of the City</td>
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<tr>
<td>ARCU 4103 [0.5]</td>
<td>Cities</td>
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<td>ARCU 4300 [0.5]</td>
<td>History of Theories of Urbanism</td>
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<td>ARCU 4700 [0.5]</td>
<td>Urban Utopias</td>
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<td>ARCU 4801 [0.5]</td>
<td>Topics in Urbanism</td>
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<tr>
<th>Requirements</th>
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<td><strong>3. 2.5 credits in:</strong></td>
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<tr>
<td>GEG 4323 [0.5]</td>
<td>Urban and Regional Planning</td>
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<tr>
<td>GEG 2023 [0.5]</td>
<td>Cities, Inequality and Urban Change</td>
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<tr>
<td>GEG 2200 [0.5]</td>
<td>Global Connections</td>
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<tr>
<td>ARCN 2105</td>
<td>Conservation and Sustainability: Digital Practice and Theory</td>
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<tr>
<td>ARCS 1105</td>
<td>Conservation and Sustainability: Drawing</td>
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<td>ARCS 1106</td>
<td>Conservation and Sustainability: Studio 1</td>
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<td>CIVE 2200</td>
<td>Conservation and Sustainability: Conservation Studio 1</td>
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<td>CIVE 2005</td>
<td>Conservation and Sustainability: Conservation Studio 2</td>
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<td>CDNS 2400</td>
<td>Conservation and Sustainability: Heritage Conservation in Canada</td>
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<td>ENVE 4105</td>
<td>Conservation and Sustainability: Green Building Design</td>
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<tr>
<td>ENVE 1001</td>
<td>Conservation and Sustainability: Architecture and the Environment</td>
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**Total Credits:** 20.0

### Regulations (B.Architectural Studies)

In addition to the specific program requirements, students must satisfy the academic regulations of the university, and the faculty regulations for the degree, below. Students should consult the School when planning their program and selecting courses.

### Residency Requirement

**B.A.S. Hons.**
- Conservation and Sustainability
- Urbanism

To be eligible to graduate, students in these programs must present a minimum of 5.0 residency credits in their degree program.

**B.A.S. Hons.**
- Design

To be eligible to graduate, students in this program must present a minimum of half the total number of credits required in their program as residency credits.

For more information, consult section 2.2.2/3.4.1 Minimum Number of Residency Credits (Residency and Advanced Credits) in the Academic Regulations of the University section of this Calendar.

### Retention of Work

Keeping a good portfolio is a most important part of architectural education. A portfolio represents a record of the student's progress and design experience over the years, and is an indispensable requirement for any future job application. A portfolio is started in first year and continues to expand until graduation. The School, therefore, requires that each student produce reductions (normally 8 1/2 x 11 inch reproductions, colour or black and white, slides, and/or digital format CD) of his or her work at the end of each term. One copy of the work should be put in the student's portfolio and the other turned in to the instructor for retention in the School's archives. (This facilitates retrospective exhibitions of work, accreditation, publications and any future references for pedagogic purposes.) Original work is the property of the students, but the School retains the right to keep work of merit for up to two years after the date of submission. The School will make every effort to preserve the work in good condition, and will give authorship credit and take care of its proper use.

### Academic Performance Evaluation

**Bachelor of Architectural Studies**

**B.A.S. Conservation and Sustainability, B.A.S. Urbanism**

These programs follow the academic performance evaluation regulations governing Honours programs as described within sections 3.2.1 to 3.2.6 of the Academic Regulations of the University.
All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

**Undergraduate Co-operative Education Policy**

**Admission Requirements**

Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

**Employment**

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The
summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**Bachelor of Architectural Studies: Co-op Admission and Continuation Requirements**
• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the B.A.S. program;
2. Obtained and maintained an overall CGPA of 9.00 or higher.
Students in the Bachelor of Architectural Studies must successfully complete three (3) work terms to obtain the co-op designation.

**Work Term Report Course:** ARCN 3999 [0.0]

**Work/Study Pattern:**

<table>
<thead>
<tr>
<th>Year 1</th>
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<tbody>
<tr>
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<td>Winter</td>
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</tbody>
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**Legend**
- S: Study
- W: Work
- O: Optional
* indicates recommended work study pattern
** indicates student finds own employer for this work-term.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degree**
- Bachelor of Architectural Studies (B.A.S.)

**Admission Requirements**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English, Physics and Advanced Functions. Calculus and Vectors is strongly recommended.

Note: a portfolio is required.

**Advanced Standing**

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate. Students will not receive credit for courses graded below C-.

**Co-op Option**

Direct Admission to the First Year of the Co-op Option

Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the B.A.S. program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Architecture - Studio (ARCS) Courses**

**ARCS 1005 [0.5 credit]**

**Drawing**
Free-hand drawing as a way of observing and understanding the world. Various media and techniques introduced through a wide range of studio and outdoor exercises. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): registration in the B.A.S. program.
Six hours a week.

**ARCS 1105 [1.0 credit]**

**Studio 1**

Students from all BAS majors are introduced to the fundamentals of designing for the built environment using the conventions of varied modes of analog representation and physical making. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): registration in the B.A.S. program.
Studio eight hours per week.

**ARCS 2105 [1.5 credit]**

**Studio 2**

Supported by the core curriculum, focuses on small-scale building in a local context. Using analog methods, projects introduce the integration of basic structure and building systems while furthering fundamental concepts such as space, inhabitation, and materiality. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCS 1005 and ARCS 1105.
Twelve hours studio, plus one hour lecture per week.

**ARCS 2106 [1.5 credit]**

**Studio 3**

With a focus on small to medium scale building projects, projects consider analog and digital methods to advance consideration of site, program, and the materials as the means for shaping the built environment. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCS 1005 and ARCS 1105.
Twelve hours studio, plus one hour lecture per week.
ARCS 2302 [1.0 credit]  
Conservation Studio 1  
Conservation methodologies will be tested and studied through design exercises and historical research on existing architectures, cities and landscapes. The emphasis on the understanding and the relation with the setting will be essential. 
Includes: Experiential Learning Activity  
Prerequisite(s): ARCC 3502, ARCS 1005, ARCS 1105 and second-year standing in B.A.S. major Conservation and Sustainability or permission of the School.  
Eight hours studio per week.

ARCS 2303 [1.0 credit]  
Urbanism Studio 1: Fundamentals of Urbanism  
Through readings, discussions and projects, students will examine a number of the forces that produce the built environment and explore a variety of approaches to documenting, representing, analyzing, organizing and controlling the growth, shape, density, and mix of uses associated with cities.  
Includes: Experiential Learning Activity  
Precludes additional credit for ARCU 2303 (no longer offered), ARCU 3501 (no longer offered).  
Prerequisite(s): ARCS 1005 and ARCS 1105, or permission of instructor.  
Eight hours studio, plus one hour lecture per week.

ARCS 3105 [1.5 credit]  
Studio 4  
Supported by the core curriculum, focuses on a medium-scale building within a regional context. May include a small design-build. Projects further analog and digital methods. May introduce concepts like adaptive re-use while furthering the understanding of structure and building systems in a complex building. (Core Course).  
Includes: Experiential Learning Activity  
Prerequisite(s): ARCS 2105 and ARCS 2106.  
Twelve hours studio, plus one hour lecture per week.

ARCS 3107 [1.0 credit]  
Studio 5  
The Directed Studies Abroad (DSA) studio considers large-scale, mixed-use buildings in an international context. Design projects advance analog and digital methods to explore broader cultural and social conditions within a complex site often in conjunction with a site visit abroad. (Core Course).  
Includes: Experiential Learning Activity  
Precludes additional credit for ARCS 3106 (no longer offered).  
Prerequisite(s): ARCS 2105 and ARCS 2106.  
Eight hours studio, plus one hour lecture per week.

ARCS 3301 [1.0 credit]  
Conservation Studio 2  
Historical building projects exploring architecture as a form of cultural expression. Consideration of site, program and materials. Introduction of conservation, sustainability and adaptive re-use principles, development standards, architectural codes, using case studies in Ottawa and elsewhere. Physical, digital drawings and models to explore designs. (Core).  
Includes: Experiential Learning Activity  
Precludes additional credit for ARCC 3301 (no longer offered).  
Prerequisite(s): ARCC 3502, ARCS 2302 and third-year standing in B.A.S. Conservation and Sustainability major or permission of the School.  
Studio eight hours per week.

ARCS 3302 [1.0 credit]  
Conservation Studio 3  
The role of architecture in culture, stressing site and program with respect to their historic, social and ecological implications. Synthesis of issues, methods and techniques of the conservation and sustainability curriculum. (Core Course).  
Includes: Experiential Learning Activity  
Precludes additional credit for ARCC 3302 (no longer offered).  
Prerequisite(s): ARCS 3301 and third-year standing in B.A.S. Conservation and Sustainability major or permission of the School.  
Studio eight hours per week.

ARCS 3303 [1.0 credit]  
Urbanism Studio 2: Urbanism in the Core  
Intensification, revitalization, gentrification, brownfield redevelopment, sustainability, development standards, form-based codes, and the larger impact of migration on urban density. Through design, students explore the ramifications of practices, policies, pressures, processes and cultural preferences on the evolving form and function of the urban core.  
Includes: Experiential Learning Activity  
Precludes additional credit for ARCU 3303 (no longer offered).  
Prerequisite(s): ARCN 2105 and ARCS 2302, and third-year standing in B.A.S. Urbanism major or permission of the School.  
Eight hours studio, plus one hour lecture per week.
ARCS 3304 [1.0 credit]
Urbanism Studio 3: Urbanism on the Periphery
Urbanization, sprawl, growth models, land consumption, containment strategies (smart growth, greenbelts, growth boundaries), edge cities, the Just City, Ecological Urbanism, and informal suburbanization in developed and developing countries. Through design, students explore the impact of practices, pressures, processes and cultural preferences on the expanding city.
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 3304 (no longer offered).
Prerequisite(s): ARCN 2105, ARCS 2303 and third-year standing in B.A.S. Urbanism major or permission of the School.
Eight hours studio, plus one hour lecture per week.

ARCS 4105 [1.5 credit]
Comprehensive Studio
Focussing on multi-unit housing, students from BAS majors collaborate to develop strategies for redevelopment of large urban sites. Engages urban design, site planning, programming, adaptive reuse, and community consultation. Students produce detailed designs for buildings, emphasizing building systems and envelope design. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCS 3105 and ARCS 3107, or ARCS 3303 and ARCS 3304.
Twelve hours studio, plus one hour lecture per week.

ARCS 4107 [1.0 credit]
Option Studio
Offers a range of topics for exploration. Students use analog and digital methods and techniques to culminate the undergraduate studio sequence while offering focused research-led investigation into key social, political, spatial issues. (Core Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCS 4106 (no longer offered).
Prerequisite(s): ARCS 3105 and ARCS 3107.
Eight hours studio, plus one hour lecture per week.

ARCS 4301 [1.5 credit]
Conservation Studio 4
Issues of program and site as the culturally defining aspects of sustainable architectural practice within complex urban and social situations, using difficult sites, historically significant buildings and/or locations and hybrid programs. projects brought to a high degree of formal and graphic resolution. (Core Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 4301 (no longer offered).
Prerequisite(s): ARCS 3302 and fourth-year standing in B.A.S. Conservation and Sustainability major or permission of the School.
Twelve hours studio and one hour of lecture per week.

ARCS 4302 [1.0 credit]
Conservation Studio 5
Conservation decision-making process and contemporary conservation concepts in the development of a design for the adaptive reuse, in Ottawa and elsewhere.
Consideration of sustainability aspects, site, program, and materials.
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 4302 (no longer offered).
Prerequisite(s): ARCS 4301 and fourth-year standing in B.A.S. Conservation and Sustainability major or permission of the School.
Studio eight hours per week.

ARCS 4303 [1.5 credit]
Urbanism Studio 4: Housing
Housing as it affects urban form. The design of multi-unit housing in a variety of forms and for a range of demographic groups. After thorough research of applicable codes and bylaws, students engage the design of housing at the site, building and detail level.
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 4303 (no longer offered).
Prerequisite(s): ARCS 3303 and ARCS 3304 and fourth-year standing in B.A.S. Urbanism major or permission of the School.
Studio twelve hours per week and one hour lecture.

ARCS 4304 [1.0 credit]
Urbanism Studio 5: Global Perspectives
Urbanization as a global phenomenon. Study of various forms of urbanization and de-urbanization in relation to economic, political and cultural forces. Through design, students explore the (trans)formation of settlements and communities outside of the North American context.
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 4304 (no longer offered).
Prerequisite(s): ARCS 3303 and ARCS 3304 and fourth-year standing in B.A.S. Urbanism major or permission of the School.
Eight hours studio, plus one hour lecture per week.

Architecture - Technical (ARCC) Courses

ARCC 1202 [0.5 credit]
History of Structures
A survey of the history, theory, and science of structures pertaining to buildings and civic works. Structural systems, construction techniques, materials and details, and the cultural factors involved in the synthesis of traditional structural design.
Includes: Experiential Learning Activity
Prerequisite(s): registration in B.A.S.
Lectures three hours a week, laboratory is block scheduled.
ARCC 2001 [0.5 credit]
Structures in Architecture
Survey of structural planning, including a historical survey of structural systems, details and the study of the factors involved in the synthesis of a suitable structural scheme. The course is intended as a survey of the science and the structural properties of materials. (Elective Course). Includes: Experiential Learning Activity
Precludes additional credit for ARCC 1103.
Lectures three hours a week, laboratory is block scheduled.

ARCC 2202 [0.5 credit]
Architectural Technology 1
General introduction to materials and methods of construction with focus on wood and timber frame construction. Site conditions, foundations, structure and envelope design in terms of their response to local climate: sun (light and heat) wind, moisture. (Core course). Prerequisite(s): permission of the School.
Lectures three hours a week.

ARCC 2203 [0.5 credit]
Architectural Technology 3
Wood frame, post and beam, steel and concrete systems and construction techniques. Structural systems and building envelope principles and practise are explored in conjunction with mechanical and electrical systems in smaller buildings. Emphasis on precedent, tradition and methodology of architectural detailing for construction. Includes: Experiential Learning Activity
Prerequisite(s): ARCC 2202 and third-year standing for B.A.S. students and third-year standing for students in B.Eng. Architectural Conservation and Sustainability.
Lectures three hours a week.

ARCC 3004 [0.5 credit]
Workshop: Energy and Form
Relationship between environmental factors, energy and architectural form. Ways in which buildings and building elements can be planned and designed to take advantage of natural cycles in order to minimize the need for supportive energy inputs. (Workshop). Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCC 3202 [0.5 credit]
Architectural Technology 4
Medium scale steel, concrete, and wood frame buildings as case studies to explore approaches to building science principles, building envelope design, advanced construction methods and materials, acoustics and sound control, and fire protection. Focus on sustainable design strategies and environment impact. (Core course). Prerequisite(s): ARCC 2203 and third-year standing for B.A.S. students or ARCC 2203 and third-year standing for students in B.Eng. Architectural Conservation.
Lectures three hours a week.

ARCC 3305 [0.5 credit]
Materials Application
Application of building materials, including the forming of building parts and the design of joints for performance and assembly. Practical constructions using new technology are emphasized. (Workshop). Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCC 3502 [0.5 credit]
Introduction to Architectural Conservation
Introduces conservation concepts to understand the values associated with existing buildings and landscapes. Through the analysis of sites and case studies, students will discuss the potentials and limitations of architectural conservation, as well as, testing its possibilities for sustainable retrofitting practices. Includes: Experiential Learning Activity
Precludes additional credit for ARCC 3501 (no longer offered).
Lectures three hours per week

ARCC 3902 [0.5 credit]
Architectural Technology
A specific aspect of architecture in the area of architectural technology. Offerings vary from year to year. (Workshop). Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, workshop or field work six hours a week.

ARCC 4100 [0.5 credit]
Lighting for Architecture
A study of daylighting and/or lighting design techniques, with a focus on project-based learning. (Workshop). Includes: Experiential Learning Activity
Prerequisite(s): ARCC 2203 or permission of the School.
Lecture, seminar, workshop or field work six hours a week.

ARCC 4102 [0.5 credit]
Acoustics in Architecture
Sound in enclosures, including interior design of auditoria and special applications. Sound reproduction and reinforcement systems. Acoustic privacy and protection, sound control in buildings, materials for noise control, community noise, industrial noise. Acoustic measurements and instrumentation. (Elective Course).
Includes: Experiential Learning Activity
Prerequisites: ARCC 3002.
Lectures two hours, laboratory two hours a week.

ARCC 4103 [0.5 credit]
Energy and Form
Energy as a criterion in decision-making for architectural design. Conventional energy resources and state-of-the-art alternative energy resource systems with respect to building shape, size, materials, openings, orientation, siting, and use. (Elective Course).
Precludes additional credit for ARCC 3003.
Lectures three hours a week.
ARCC 4200 [0.5 credit]
Structural Morphology
Interdisciplinary study of structural and developmental morphology focusing on dynamic generative design processes, integrative systems, spatial modulations and fundamental generative principles of spatial form and structure as it relates to architecture. (Workshop).
Includes: Experiential Learning Activity
Lectures, seminar, workshop or field work six hours a week.

ARCC 4202 [0.5 credit]
Wood Engineering
Also listed as CIVE 4202.
Prerequisite(s): CIVE 2200, CIVE 2700.
Lectures three hours a week, problem analysis three hours alternate weeks.

ARCC 4207 [0.5 credit]
Advanced Building Assessment
In-depth study of the conventions, methods, and tools used in the assessment of buildings and their sites including traditional field survey, photogrammetry, laser scanning technologies, and hybrid representations.
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 4900 (no longer offered).
Prerequisite(s): enrolment in the BAS Conservation and Sustainability program and fourth-year standing.
Laboratories, lectures, field trips, six hours a week.

ARCC 4300 [0.5 credit]
Building Materials
Contemporary and traditional construction techniques and materiality are discussed within the framework of current practices, with emphasis on the analysis of material properties, structure and sustained performance, as well as their contribution to the adaptive reuse of existing and/or historical building. (Elective Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 3300.
Laboratories, lectures, field trips four hours a week.

ARCC 4400 [0.5 credit]
Design for Construction
Design in relation to materials and building construction including the effects of building codes, zoning bylaws, approvals, processes and legislation, the organization of the building industry, and cost estimating control. (Elective Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCC 3300 or permission of the School.
Lectures, seminars, field work three hours a week.

ARCC 4500 [0.5 credit]
Design Economics
Precludes additional credit for ARCC 3500.
Prerequisite(s): fourth-year standing in the B.A.S. program or permission of the School.
Three hours a week.

ARCC 4801 [0.5 credit]
Architectural Technology
A specific aspect of architecture in the area of architectural technology. Topics vary from year to year. (Elective Course).
Prerequisite(s): permission of the School.

ARCC 4808 [0.5 credit]
Independent Study
( Elective Course).

ARCC 4909 [1.0 credit]
Honours Project
Students propose a topic of study in Conservation & Sustainability for approval and produce a substantial research project, supervised by BAS faculty. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in BAS Conservation and Sustainability.

Architecture - Techniques (ARCN) Courses

ARCN 1005 [0.5 credit]
Introduction to Drawing: Seeing Through the Hand
Fundamental concepts of line and line weight, light and shadow, perspective, contrast and composition. Exercises will include some mixed media and will introduce students to drawing as a way of translating ideas into images.
Includes: Experiential Learning Activity
One hour lecture and two hours drawing/discussion.

ARCN 2105 [0.5 credit]
Digital Practice and Theory
Computer modeling as a medium of architectural analysis, documentation, and presentation. Principles and techniques of 2D drawing and 3D modeling. Extensive practical work using appropriate applications. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): second-year B.A.S. standing or permission of the School.
Lectures three hours a week.
ARCN 2106 [0.5 credit]
Introduction to Multimedia
Analogue and digital systems and graphic processes used in the making of images. Fundamentals of still photography and videography combined with current computer technologies in the application of visual communication techniques.
Includes: Experiential Learning Activity
Precludes additional credit for IDES 2106.
Lectures three hours a week, laboratory three hours a week.

ARCN 3003 [0.5 credit]
Theatre Production
Design and fabrication of theatre productions, one of which is staged on campus. Visiting directors, designers, technical consultants and others. Visits to theatres and production facilities. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3206 [0.5 credit]
Computer Applications
Application of existing software and programming techniques to various architectural problems. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3302 [0.5 credit]
The Anatomy of Architecture
The architectural anatomy of selected contemporary buildings. Use of graphic techniques of analysis to develop an understanding of their basic compositional principles and language. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3303 [0.5 credit]
Architecture as Painting
Analysis of architecture for its elemental, formal and narrative properties. These relationships through the medium of painting. Architecture as analogy to painting. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3400 [0.5 credit]
Visual Design
Development of the capacity to visualize and communicate in several graphic media. Development of sensitivity to form, structure, space, texture and colour. May involve historical investigation. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3401 [0.5 credit]
Photography
Traditional and alternative techniques for image making and manipulation. Basic image formation techniques, advanced darkroom manipulations, past-darkroom imaging, and digital imaging within a theoretical overview of current photographic processes and techniques. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ARCN 4100 [0.5 credit]
Historic Site Recording and Assessment
Methods of heritage building documentation including hand recording, photography, rectified photography, total station, gps, photogrammetry, and laser scanning. Non-destructive testing techniques; environmental assessment tools for determining air quality and energy efficiency. Multidisciplinary teams for all project work.
Includes: Experiential Learning Activity
Also listed as CIVE 3207.
Precludes additional credit for ARCN 3100 (no longer offered).
Prerequisite(s): second-year standing in B.A.S. Conservation and Sustainability.
Lectures three hours a week, lab or field work two hours a week.

ARCN 4102 [0.5 credit]
Problems in Computing
Various types of non-numeric data, their representation within primary and secondary storage, and the manipulation of various representations. Comparative evaluation of languages for non-numeric problems. (Elective Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCN 3102.
Prerequisite(s): permission of the School.
Lectures two hours a week, laboratory two hours a week.

ARCN 4103 [0.5 credit]
Digital Fabrication and Theory
The changing relationship of architectural design and digital technology with a focus on 1:1 constructions using emerging computational software and fabrication techniques. (Workshop/ Elective Course).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lectures two hours a week, laboratory two hours a week.
ARCN 4200 [0.5 credit]
Building Pathology and Rehabilitation
Deterioration mechanisms for concrete, timber, steel and masonry structures. Identification of design deficiencies; criteria for selection and design of rehabilitation systems. Design techniques to reduce deterioration in new construction and historical structures.
Includes: Experiential Learning Activity
Also listed as CIVE 4601.
Prerequisite(s): ARCN 4100 and third-year standing in B.A.S. Conservation and Sustainability.
Lectures three hours a week, lab/field work two hours a week.

ARCH 4808 [0.5 credit]
Independent Study
(Elective Course).
Includes: Experiential Learning Activity

Architecture - Theory/History (ARCH) Courses
ARCH 1000 [0.5 credit]
Introduction to Architecture
Architecture in the matrix of human conditions: linkages among architecture, fine arts, humanities, social sciences, physical sciences, mathematics and philosophy. Architectural ideas will be introduced through a discussion of cities, buildings and landscapes. (Core Course).
Lectures three hours a week.

ARCH 1005 [0.5 credit]
Contemporary Society
The relationship of architecture, architectural thought and the architectural profession to the societies in which they exist (and which they must serve). Topics are selected to emphasize key issues. (Elective Course).
Lectures and seminars, three hours a week.

ARCH 2006 [0.5 credit]
Theory and History of Design
The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes. (Elective course).
Also listed as IDES 1000.
Lectures three hours a week.

ARCH 2101 [0.5 credit]
Industrial Design Analysis
Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment. (Elective course).
Includes: Experiential Learning Activity
Also listed as IDES 1001.
Prerequisite(s): ARCH 2006 or IDES 1000.
Lectures three hours a week.

ARCH 2300 [0.5 credit]
Introduction to Modern Architecture
Architectural and urban ideals of modernism with emphasis upon the development of the avant-garde in the early twentieth century. The phenomenon of modern architecture within the broader framework of the development of western thought. (Core Course).
Precludes additional credit for ARCH 3009.
Prerequisite(s): B.A.S. students require ARTH 1100 or ARTH 1200 and ARTH 1101 or ARTH 1201.
Lectures three hours a week.

ARCH 3208 [0.5 credit]
Urban Space Architecture
Design explorations that are directed towards the search for aesthetic form and meaning in urban space, with particular application to the Canadian context. Project-oriented. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCH 3902 [0.5 credit]
Theory of Architecture
Workshop focuses on one specific aspect of architecture in the area of theory and history. Workshop offerings change from year to year. (Workshop).
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCH 4002 [0.5 credit]
Canadian Architecture
Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques. (Theory/History Elective).
Includes: Experiential Learning Activity
Also listed as ARTH 3002.
Precludes additional credit for ARCH 3002.
Prerequisite(s): ARCH 2300 or permission of the School.
Lectures, seminars three hours a week.

ARCH 4004 [0.5 credit]
Architectural Theory
An exploration of architectural intentions in the early period of Western history, with special emphasis on Renaissance treatises and ideas. Architectural intentions in relation to shifting world-views as a basis of historical interpretation. (Theory/History Elective).
Precludes additional credit for ARCH 3007.
Lectures three hours a week.

ARCH 4006 [0.5 credit]
Origins of Modernism
Exploration of architectural theories with special emphasis on the European context from the seventeenth century to the late nineteenth century. (Theory/History Elective).
Precludes additional credit for ARCH 3008.
Prerequisite(s): ARCH 2300 or permission of the School.
Lectures three hours a week.
ARCH 4008 [0.5 credit]  
Foundations of Modernism  
Major critical perspectives as applied to architecture as a fine art. The debate between classicism and romanticism with consideration of its cultural roots. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4009 [0.5 credit]  
Theory of the Avant-Garde  
Exploration of architectural theories with special emphasis on the development of the avant-garde in the early twentieth century, looking at the avant-garde within the larger framework of modernism. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4105 [0.5 credit]  
Theories of Landscape Design  
Introduction to landscape architecture as the organization of outdoor space. Historical, cultural, economic and political factors as a basis for interpreting spatial organization in urban and rural areas of human settlement. Emphasis on the period from the fifteenth to the nineteenth century. (Theory/History Elective).  
Prerequisite(s): second-year standing or above.  
Lectures three hours a week.

ARCH 4200 [0.5 credit]  
Architectural Conservation Philosophy and Ethics  
Analysis of philosophical theories and related approaches to the material transformation of buildings. Micro-histories in architectural conservation theory and practice; overview of historical and contemporary concepts in architectural conservation. Preservation, restoration, rehabilitation, reconstruction, adaptive re-use, conservation anamnesis, diagnosis.  
Prerequisites additional credit for ARCH 3100 (no longer offered).  
Prerequisite(s): third-year standing B.A.S. or third-year status in B.Eng. (Architectural Conservation and Sustainability).  
Lectures three hours a week.

ARCH 4201 [0.5 credit]  
History of Modern Housing  
Study of housing as a function of social organization, demographics, market demand and public policy. Topics include the evolution of housing form, the role of the state, and the participation of architects in the housing marketplace in the 19th and 20th century. (Theory/History Elective).  
Prerequisite(s): third-year standing in the B.A.S. program or permission of the School.  
Lectures three hours a week.

ARCH 4204 [0.5 credit]  
The Design Professions  
Architecture and design professions in relation to traditional professions and to occupations in art and design. Professions in the development of culture and society; education, career and work; knowledge in the design professions; and the nature of design practice. (Elective Course).  
Also listed as SOCI 4204.  
Prerequisite(s): third-year standing in the B.A.S. program; fourth-year standing in Sociology; fourth-year standing in the B.A. Honours Architecture/Art History program; or permission of the School.  
Seminar three hours a week.

ARCH 4205 [0.5 credit]  
User-Building Synopsis  
Includes: Experiential Learning Activity  
Prerequisite(s): permission of the School.  
Lecture, seminar, lab or field work six hours a week.

ARCH 4206 [0.5 credit]  
Recycling Architecture in Canada and Abroad  
Concepts of mediating old and new architecture at the scale of the city through to the detail of the construction joint. Issues in sustainability and cultural identity illuminated by recycled architecture and adaptive reuse are explored through readings, drawings and case studies. (Theory/History Elective).  
Prerequisite(s): third-year standing in the B.A.S. program or by permission of the instructor; fourth-year standing in the B.Eng. Architectural Conservation and Sustainability program.  
Lectures three hours a week.

ARCH 4300 [0.5 credit]  
Neo-Classical Architecture  
18th - and 19th- century architecture and urban form in Western Europe. Emphasis on the cultural and philosophical framework of rising modernity to illuminate architectural production and theory as well as the development of urban form. (Theory/History Elective).  
Prerequisites additional credit for ARCH 1201 and ARCH 2200.  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4301 [0.5 credit]  
Post-War Architecture  
Theoretical, ideological and artistic debates that have influenced the development of world architecture since 1950. (Theory/History Elective).  
Also listed as ARTH 4604.  
Prerequisite(s): ARCH 2300 or ARTH 3609 or permission of the instructor.  
Lecture or seminar three hours per week.
ARCH 4302 [0.5 credit]  
Pre-Columbian Architecture  
Monumental temples of the ancient Mesoamericans are compared with other world traditions at similar levels of cultural development. Selected examples considered in terms of morphology, technology, iconography, social/political context, world view and general architectural theory. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4303 [0.5 credit]  
Greek Architecture  
Architecture of Greek antiquity and its relationship to its philosophical, artistic, and mythical contexts. The development of the idea of the city; the presence of architecture within its symbolic landscape. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4304 [0.5 credit]  
The Architecture of Rome  
Rome in its classical to late-antique periods. Its founding mythologies and landscape. In-depth analysis of Rome, with special attention to its public buildings. Early Christian architecture within the Roman context. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4305 [0.5 credit]  
Medieval Architecture  
Gothic architecture and its relation to its philosophic and artistic predecessors. Special attention to the coexistence of the monastic tradition, late Romanesque building, and new experiments in gothic during this period, marked by intellectual and political ferment. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4306 [0.5 credit]  
Renaissance Theory  
The rise of architectural theory within the context of the Italian Renaissance. Canonic texts explored and compared in the context of the architectural developments of the period. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4307 [0.5 credit]  
Muslim Architecture  
Historical and theoretical discussions about the architecture of Muslim cultures. Selected sites and monuments from eighth to eighteenth century, covering the vast geography from North Africa to Southeast Asia. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4308 [0.5 credit]  
Asian Architecture  
Anthropological history of the architecture of the Near and Far East. The architecture and urban form of Ancient Egypt, Anatolia, Sumer and Persia; ancient China and India. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4309 [0.5 credit]  
Mesoamerican Architecture  
Selected works of Mesoamerican architecture in terms of iconography, morphology, technology, function, historical development, and concept. Mesoamerican architectural features compared with other world traditions. Emphasis on design. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4400 [0.5 credit]  
Theory  
A survey of the architectural and urban history of a specific culture. These discussions address the present reality of a country, region or city being visited by the fourth year of the program. (Elective Course).  
Prerequisite(s): clear standing to fourth year and permission of the School.  
Lectures three hours a week.

ARCH 4502 [0.5 credit]  
Research and Criticism  
Preparation for the independent research and design work. Work related to the nature of research and criticism in architecture, with emphasis on current issues. (Theory/History Elective).  
Includes: Experiential Learning Activity  
Lectures and seminars three hours a week.

ARCH 4505 [0.5 credit]  
Seminar in Theory and History  
History and theory of architecture. Topics will vary from year to year. Limited enrolment. (Elective Course).  
Prerequisite(s): fourth-year standing in the B.A.S. or B.A. (Honours) Architecture/Art History programs, or permission of the School.  
Lectures three hours a week.

ARCH 4801 [0.5 credit]  
Special Topics  
An aspect of architecture in the area of theory and history. Topics vary from year to year. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School.  
Lectures three hours a week.

ARCH 4808 [0.5 credit]  
Independent Study  
( Elective Course).
ARCH 4900 [0.5 credit]
Directed Reading
Supervised readings and research projects. Guidelines must be obtained from BAS Academic Advisors prior to registration. (Core course).
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.A.S (Philosophy and Criticism).

ARCH 4909 [1.0 credit]
Honours Project
Students propose a topic of study in Philosophy and Criticism for approval and produce a substantial research project, supervised by BAS faculty. (Core course).
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.A.S (Philosophy and Criticism).

Architecture - Urban (ARCU) Courses

ARCU 2100 [0.5 credit]
Special Topics in Urbanism
Seminar in selected topics related to Urbanism at an introductory level.
Lecture and discussion three hours per week.

ARCU 3100 [0.5 credit]
The Morphology of the City
Primary structural, spatial and formal organization and elements that characterize the morphology of cities; historical and contemporary significance for architecture and urban design. (Core).
Prerequisite(s): First-year standing in the B.A.S. Urbanism major, second or third-year standing in other B.A.S. majors, or permission of the School.
Lecture two hours a week and tutorial one hour a week.

ARCU 3203 [0.5 credit]
Landscape Architecture
Practical significance of landscape elements as they relate to built-form by integrating structure and site. (Workshop).
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCU 3405 [0.5 credit]
Urban Design
Project-based workshop investigating current design attitudes and solutions affecting the physical morphology of cities. Formally sophisticated urban design projects. Various procedures and basic urban design ideas.
(Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCU 3409 [0.5 credit]
City Organization and Planning Processes
Interdisciplinary investigation, analysis and synthesis of the institutions, processes, environments and demography of Canadian cities. Guest lecturers. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCU 3902 [0.5 credit]
Urban Studies
A specific aspect of architecture in the area of urban studies. Topics vary from year to year. (Workshop).
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 4103.
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCU 4103 [0.5 credit]
Cities
Course addresses cities such as Istanbul, Mexico City, Venice, Paris, Ottawa, Mumbai, and New Orleans. Topics presented by the instructor and guests include environmental resilience and climate change; social justice and informal settlement; smart cities and data privacy; and urban design, memory, and imagination.
Precludes additional credit for ARCU 3902.
Prerequisite(s): Second-year standing or permission of the Instructor.
Lecture two hours per week and tutorial one hour per week.

ARCU 4300 [0.5 credit]
History of Theories of Urbanism
Theories of urbanism throughout history; emphasis on schools of post-WWII academic thought. The impact of Marxist theory, location and systems theory; the expanding array of models, tools and techniques that have contributed to various theorizations of urbanism.
Prerequisite(s): ARCU 3100.

ARCU 4400 [0.5 credit]
City Organization and Planning
Structure, form and functioning of cities. Infra-structure, facilities and networks, ecosystems, demographic and social organization, government, quality of life, goals and perceptions, urban management, development, regulation and codes, design, planning and policy-making. (Elective Course).
Precludes additional credit for ARCU 3400.
Three hours a week.

ARCU 4500 [0.5 credit]
Human Shelter
Background factors pertaining to housing in both industrial and developing countries; traditional and contemporary housing approaches; social housing; and people's right to adequate housing. Guest lecturers. (Elective Course).
Precludes additional credit for ARCU 3500.
Three hours a week.
ARCU 4600 [0.5 credit]
Post-WWII Urbanism
Urban renewal in the post-war period in response to housing shortages, suburbanization, transportation infrastructure and other factors. Gentrification and the emerging form of the post-industrial city, including new urbanism and sustainable communities. Case studies from Canada, Europe and the U.S. (Theory/History Elective). Prerequisite(s): ARCU 3100 and third or fourth-year standing in the B.A.S. Urbanism program or permission of the School.
Lectures three hours a week.

ARCU 4700 [0.5 credit]
Urban Utopias
Urban utopias throughout history, with emphasis on the 20th century. Garden Cities, anti-urbanism and radical decentralization, the city in the region, Italian Rationalist cities, Le Corbusier and CIAM, post-WWII New Towns (England, Scandinavia and the US), Sustainable Urbanism. Prerequisite(s): third or fourth-year standing in B.A.S. Urbanism program or permission of the School.
Lectures three hours a week.

ARCU 4801 [0.5 credit]
Topics in Urbanism
Advanced seminar in selected topics related to urbanism. Topics may include histories and theories related to urban systems, design, and planning. (Core course). Prerequisite(s): third-year standing in B.A.S. (Urbanism) or permission of the Instructor.
Seminar three hours per week.

ARCU 4808 [0.5 credit]
Independent Study
( Elective Course).
Includes: Experiential Learning Activity

ARCU 4901 [0.5 credit]
Topics in Applied Urbanism
Advanced investigation into issues related to urbanism and urban form. Topics will vary from year to year. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.A.S. (Urbanism) or permission of Instructor.
Lecture three hours per week.

Art History
This section presents the requirements for programs in:

- Minor in History and Theory of Architecture
- Post-Baccalaureate Diploma in History and Theory of Architecture

Program Requirements
Art History
B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 3.0 credits in:
   ARTH 1100 [0.5] Art and Society: Prehistory to the Renaissance
   ARTH 1101 [0.5] Art and Society: Renaissance to the Present
   ARTH 1201 [0.5] History and Theory of Architecture: 1500 to Present
   ARTH 2009 [0.5] Art Live: Art History Workshop
   ARTH 3100 [0.5] History and Methods of Art and Architectural History
   ARTH 3108 [0.5] History and Methods of Art History

2. 1.0 credit from:
   ARTH 2102 [0.5] Greek Art and Archaeology
   ARTH 2105 [0.5] Roman Art and Archaeology
   ARTH 2107 [0.5] Islamic Architecture and Art
   ARTH 2202 [0.5] Medieval Architecture and Art
   ARTH 2300 [0.5] Italian Renaissance Art

3. 1.0 credit from:
   ARTH 2502 [0.5] Art of the 19th Century
   ARTH 2600 [0.5] Modern European Art 1900-1945
   ARTH 2601 [0.5] History and Theory of Photography

4. 0.5 credit from:
   ARTH 2002 [0.5] Canadian Historical Art
   ARTH 2003 [0.5] Canadian Twentieth-Century and Contemporary Art

5. 0.5 credit from:
   ARTH 2005 [0.5] Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
   ARTH 2006 [0.5] Arts of the First Peoples: The Southwest, the West Coast and the Arctic
   ARTH 2007 [0.5] Asian Art
   ARTH 2008 [0.5] Inuit Art
   ARTH 2106 [0.5] Chinese Art and Visual Culture

6. 1.0 credit in ARTH at the 3000 level
7. 2.0 credits in ARTH at the 4000 level
8. 1.0 credit in ARTH at the 2000 level or higher

B. Credits Not Included in the Major CGPA (10.0 credits)

9. 8.0 credits in electives not in ARTH
10. 2.0 credits in free electives

Total Credits 20.0

Note:
- Art History majors may take up to 1.0 credit in studio art courses from an accredited university as an elective. Courses taken at another institution must be approved in a letter of permission from the Carleton University Registrar.
• No more than 1.0 credit may be taken as ARTH 4900 Directed Readings and Research or ARTH 4909 [1.0] Honours Research Essay.

Art History
B.A. Combined Honours (20.0 credits)
A. Credits Included in the Major CGPA (6.5 credits)
1. 2.5 credits in: 2.5
   ARTH 1100 [0.5] Art and Society: Prehistory to the Renaissance
   ARTH 1101 [0.5] Art and Society: Prehistory to the Present
   ARTH 2009 [0.5] Art Live: Art History Workshop
   ARTH 3100 [0.5] History and Methods of Art and Architectural History
   ARTH 3108 [0.5] History and Methods of Art History
2. 0.5 credit from: 0.5
   ARTH 2102 [0.5] Greek Art and Archaeology
   ARTH 2105 [0.5] Roman Art and Archaeology
   ARTH 2107 [0.5] Islamic Architecture and Art
   ARTH 2202 [0.5] Medieval Architecture and Art
   ARTH 2300 [0.5] Italian Renaissance Art
3. 0.5 credit from: 0.5
   ARTH 2502 [0.5] Art of the 19th Century
   ARTH 2600 [0.5] Modern European Art 1900-1945
   ARTH 2601 [0.5] History and Theory of Photography
4. 0.5 credit from: 0.5
   ARTH 2002 [0.5] Canadian Historical Art
   ARTH 2003 [0.5] Canadian Twentieth-Century and Contemporary Art
5. 0.5 credit from: 0.5
   ARTH 2005 [0.5] Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
   ARTH 2006 [0.5] Arts of the First Peoples: The Southwest, the West Coast and the Arctic
   ARTH 2007 [0.5] Asian Art
   ARTH 2008 [0.5] Inuit Art
   ARTH 2106 [0.5] Chinese Art and Visual Culture
6. 0.5 credit in ARTH at the 3000 level or above 0.5
7. 1.5 credits in ARTH at the 4000 level collectively 1.5
   a. 0.5 credit in ARTH (excluding ARTH 4900, ARTH 4909)
   b. 1.0 credit in ARTH at the 4000 level
B. Additional Requirements (13.5 credits) 13.5
8. The requirements of the other discipline must be satisfied
9. Sufficient free electives to make 20.0 credits in total for the program.

Total Credits 20.0

Note:
• Art History majors may take up to 1.0 credit in studio art courses from an accredited university as an elective. Courses taken at another institution must be approved in a letter of permission from the Carleton University Registrar.

...
**Post-Baccalaureate Diploma in Art History (4.0 credits)**

Admission to this program requires the permission of the Art History undergraduate supervisor, 0.5 credit may be taken outside the department. With the approval of the Art History undergraduate supervisor, 0.5 credit may be taken outside the department. Admission to this program requires the permission of the program. Normally, students would be required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

**Requirements:**

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<th>1. 1.0 credit in:</th>
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<tr>
<td>ARTH 3100 [0.5] History and Methods of Art and Architectural History</td>
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<td>ARTH 3108 [0.5] History and Methods of Art History</td>
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<thead>
<tr>
<th>2. 2.0 credits in ARTH at the 2000-level or above (excluding ARTH 2009)</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. 1.0 credit in ARTH at the 4000-level</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Total Credits** 4.0

With the approval of the Art History undergraduate supervisor, 0.5 credit may be taken outside the department.

**History and Theory of Architecture**

**B.A. Honours (20.0 credits)**

<table>
<thead>
<tr>
<th>A. Credits Included in the Major CGPA (10.0 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 3.0 credits in:</td>
</tr>
<tr>
<td>ARTH 1101 [0.5] Art and Society: Renaissance to the Present</td>
</tr>
<tr>
<td>ARTH 1200 [0.5] History and Theory of Architecture: Prehistory to 1500</td>
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<tr>
<td>ARTH 2710 [0.5] Experiencing Architecture</td>
</tr>
<tr>
<td>ARTH 3100 [0.5] History and Methods of Art and Architectural History</td>
</tr>
<tr>
<td>ARTH 3107 [0.5] History and Methods of Architectural History</td>
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</tbody>
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<thead>
<tr>
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<tbody>
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<tr>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
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<td>ARTH 2510 [0.5] Architecture of the 18th and 19th Centuries</td>
<td></td>
</tr>
<tr>
<td>ARTH 2610 [0.5] Twentieth-Century Architecture</td>
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<table>
<thead>
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<th>3. 1.0 credit from:</th>
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<tbody>
<tr>
<td>ARTH 3002/ARCH Canadian Architecture</td>
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</tbody>
</table>

| ARTH 3810 [0.5] A Closer Look at the Designed Environment |
|----------------|-----|
| ARTH 4107 [0.5] Topics in Islamic Architecture and Art |
| ARTH 4202 [0.5] Topics in Medieval Architecture and Art |
| ARTH 4610 [0.5] Topics in Modern Architecture or Design |
| ARTH 4800 [0.5] Topics in Architectural History |

<table>
<thead>
<tr>
<th>6. 1.5 credits in ARTH or ARCH at the 4000-level</th>
<th>1.5</th>
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<tbody>
<tr>
<td>7. 1.0 credit from:</td>
<td>1.0</td>
</tr>
<tr>
<td>ARCH 4200 [0.5] Architectural Conservation Philosophy and Ethics</td>
<td></td>
</tr>
<tr>
<td>ARCN 4100 [0.5] Historic Site Recording and Assessment</td>
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<tr>
<td>CDNS 2400 [0.5] Heritage Conservation in Canada</td>
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<tr>
<td>CDNS 4400 [0.5] Cultural Landscape and Cultural Identity in Canada</td>
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<tr>
<td>GEG 1020 [0.5] People, Places and Environments</td>
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<tr>
<td>GEG 2300 [0.5] Space, Place and Culture</td>
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<tr>
<td>GEG 3021 [0.5] Geographies of Culture and Identity</td>
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<tr>
<td>HIST at the 1000-level or higher</td>
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<tr>
<td>IDES 1000 [0.5] Theory and History of Design</td>
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</table>

<table>
<thead>
<tr>
<th>B. Credits Not Included in the Major CGPA (10.0 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. 8.0 credits in electives not in ARTH or Architecture</td>
</tr>
<tr>
<td>9. 2.0 credits in free electives.</td>
</tr>
</tbody>
</table>

**Total Credits** 20.0

**Notes for programs in History and Theory of Architecture:**

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

**History and Theory of Architecture**

**B.A. Combined Honours (20.0 credits)**

<table>
<thead>
<tr>
<th>A. Credits included in the major CGPA (6.5 Credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 2.5 credits in:</td>
</tr>
<tr>
<td>ARTH 1200 [0.5] History and Theory of Architecture: Prehistory to 1500</td>
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<tr>
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<td></td>
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<tr>
<td>ARTH 2202 [0.5] Medieval Architecture and Art</td>
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</tbody>
</table>
### History and Theory of Architecture

**B.A. (15.0 credits)**

#### A. Credits Included in the Major CGPA

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<thead>
<tr>
<th>Course</th>
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<tr>
<td>ARTH 1101 [0.5]</td>
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#### 1.5 credits from:

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<td>ARTH 2102 [0.5]</td>
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<tr>
<td>ARTH 3002/ARCH 4002 [0.5]</td>
<td>Architecture</td>
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<td>ARTH 3003 [0.5]</td>
<td>Architecture and Representation</td>
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<tr>
<td>ARTH 3005 [0.5]</td>
<td>American Architecture</td>
</tr>
<tr>
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<tr>
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<td>American Architecture</td>
</tr>
<tr>
<td>ARTH 3107 [0.5]</td>
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<td>American Architecture</td>
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<td>ARTH 3107 [0.5]</td>
<td>History and Methods of Architectural History</td>
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</tbody>
</table>

#### 0.5 credit in ARTH or ARCH at the 2000-level or higher

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>ARTH 4002 [0.5]</td>
<td>Topics in Modern Architecture or Art</td>
</tr>
<tr>
<td>ARTH 4107 [0.5]</td>
<td>Topics in Medieval Architecture and Art</td>
</tr>
<tr>
<td>ARTH 4610 [0.5]</td>
<td>Topics in Islamic Architecture and Art</td>
</tr>
<tr>
<td>ARTH 4800 [0.5]</td>
<td>Topics in Architectural History</td>
</tr>
</tbody>
</table>

#### 1.0 credits in ARTH or ARCH or ARCN at the 4000-level

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ARTH 1101 [0.5]</td>
<td>History and Theory of Architecture: Prehistory to 1500</td>
</tr>
<tr>
<td>ARTH 1200 [0.5]</td>
<td>History and Theory of Architecture: 1500 to Present</td>
</tr>
<tr>
<td>ARTH 2710 [0.5]</td>
<td>Experiencing Architecture</td>
</tr>
<tr>
<td>ARTH 3100 [0.5]</td>
<td>History and Methods of Art and Architectural History</td>
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</table>

#### 0.5 credit from:

<table>
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<tr>
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<tbody>
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<td>ARTH 1200 [0.5]</td>
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<td>History and Theory of Architecture: 1500 to Present</td>
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<td>ARTH 3100 [0.5]</td>
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#### Notes for programs in History and Theory of Architecture:

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

#### Minor in History and Theory of Architecture (4.0 credits)

Open to all undergraduate degree students not in History and Theory of Architecture programs.

**Requirements**

1. 1.0 credit in:

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ARTH 1200 [0.5]</td>
<td>History and Theory of Architecture: Prehistory to 1500</td>
</tr>
<tr>
<td>ARTH 1201 [0.5]</td>
<td>History and Theory of Architecture: 1500 to Present</td>
</tr>
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</table>

2. 1.5 credits from:

<table>
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<tbody>
<tr>
<td>ARTH 2102 [0.5]</td>
<td>Greek Art and Archaeology</td>
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3. 1.5 credits from:

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<td>ARTH 3002/ARCH 4002 [0.5]</td>
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4. 0.5 credit in ARTH or ARCH at the 2000-level or higher

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<tr>
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<tbody>
<tr>
<td>ARTH 3701 [0.5]</td>
<td>Art and Architecture on Site</td>
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<tr>
<td>ARTH 3710 [0.5]</td>
<td>Architecture and Empire</td>
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<tr>
<td>ARTH 3810 [0.5]</td>
<td>A Closer Look at the Designed Environment</td>
</tr>
</tbody>
</table>

5. 1.5 credits in ARTH or ARCH at the 3000-level

6. 6.0 credits in electives not in ARTH or Architecture

7. 2.0 credit in free electives.

**Total Credits**

15.0

---

**Notes for programs in History and Theory of Architecture:**

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

**Minor in History and Theory of Architecture (4.0 credits)**

Open to all undergraduate degree students not in History and Theory of Architecture programs.

**Requirements**

1. 1.0 credit in:

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<td>ARTH 1200 [0.5]</td>
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5. 1.5 credits in ARTH or ARCH at the 3000-level

6. 6.0 credits in electives not in ARTH or Architecture

7. 2.0 credit in free electives.

**Total Credits**

15.0

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**Notes for programs in History and Theory of Architecture:**

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

<table>
<thead>
<tr>
<th>Total Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
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</table>

**Post-Baccalaureate Diploma in History and Theory of Architecture (4.0 credits)**

Admission to this program requires the permission of the History and Theory of Architecture program. Normally, students would be required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

**Requirements:**

1. **1.0 credit in:**
   - ARTH 3100 [0.5] History and Methods of Art and Architectural History
   - ARTH 3107 [0.5] History and Methods of Architectural History

2. **2.0 credit in ARTH at the 2000-level or above** (excluding ARTH 2710)
3. **1.0 credit in ARTH at the 4000-level**

**Total Credits:** 4.0

With the approval of the History and Theory of Architecture undergraduate supervisor, 0.5 credit may be taken outside the department.

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement:

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ENSL, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**


**Subject codes:** AFRI, ALDS, ARCY, CANC, CLS, CLOC, CRST, DBST, DIST, EACH, EURL, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**


**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOL, BIT, CHEM, CIVE, CMP, COMP, ECOR, ELEC, ENSC, ENSVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITMEC, MAEE, MATH, MEC, NET, NEUR, NSCI, OSS, PHYS, PLT, SREEE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public
Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GOPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.
Graduation

• A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
• A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
• Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

• Bachelor of Arts (B.A.)(Honours)
• Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Art and Architectural History (ARTH) Courses

ARTH 1100 [0.5 credit]
Art and Society: Prehistory to the Renaissance
A survey of art, architecture and artifacts from prehistory to the Renaissance. Ways of understanding visual culture through this span of history.
Precludes additional credit for ARTH 1000.
Lectures two hours a week, tutorial one hour a week.

ARTH 1101 [0.5 credit]
Art and Society: Renaissance to the Present
A survey of art, architecture and related visual forms in their expanding contexts from the Renaissance to the present. Ways of understanding visual culture through this span of history.
Precludes additional credit for ARTH 1000.
Lectures two hours a week, tutorial one hour a week.

ARTH 1105 [0.5 credit]
Art as Visual Communication
A variety of visual material is organized topically to examine the elements of art (line, shape, value, colour, texture, space), the principles of pictorial organization, the materials and techniques of art, and recurrent tendencies in artistic styles and outlooks.
Lectures three hours a week.

ARTH 1200 [0.5 credit]
History and Theory of Architecture: Prehistory to 1500
An introduction to the history of architecture from prehistory to ca. 1500, considering technological, formal, intellectual and social developments that informed the built environment through a range of building types.
Lectures two hours a week, tutorial one hour a week.

ARTH 1201 [0.5 credit]
History and Theory of Architecture: 1500 to Present
An introduction to the history of architecture from ca. 1500 to the present, considering technological, formal, intellectual, and social developments that informed the built environment through a range of building types. Precludes additional credit for ARTH 2608 (no longer offered).
Lectures two hours a week, tutorial one hour a week.
ARTH 2002 [0.5 credit]
Canadian Historical Art
A survey of historical Canadian art, from the period of European settlement to the early twentieth century, examining craft and fine art, amateur and professional artists, art institutions, gender, nationalism, regionalism and ethnicity. Students will be exposed to works in the National Capital region.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2003 [0.5 credit]
Canadian Twentieth-Century and Contemporary Art
A survey of twentieth-century and contemporary Canadian art in a variety of media within social, political and cultural contexts. Regionalism, multiculturalism, nationalism, gender, race and identity will be considered in relation to local and national collections in Ottawa.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2005 [0.5 credit]
Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
Introduction to the visual arts of Indigenous peoples of the eastern and central regions of North America. A post-colonial perspective will be used to consider selected examples of creative production from time immemorial to the present.
Prerequisite(s): second-year standing or permission of the discipline.
Lectures three hours a week.

ARTH 2006 [0.5 credit]
Arts of the First Peoples: The Southwest, the West Coast and the Arctic
Introduction to the visual arts of Indigenous peoples of the western and northern regions of North America. A post-colonial perspective will be used to consider selected examples of visual materials from time immemorial to the present.
Prerequisite(s): second-year standing or permission of the discipline.
Lectures three hours a week.

ARTH 2007 [0.5 credit]
Asian Art
Surveys Asian art from second-century China to post-war Japan. Representational strategies of court artists and artists from the capital are compared with artists on the periphery. Articulation of power in tombs, palaces and war propaganda is examined, as is the individual and the eccentric.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2008 [0.5 credit]
Inuit Art
Survey of visual art produced by Canadian Inuit from the circumpolar area.
Precludes additional credit for ARTH 3104.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2009 [0.5 credit]
Art Live: Art History Workshop
Examination of techniques, materials and institutions of art history; lectures and workshops on art historical research and writing, the materials of art, professional skills; site visits to art institutions.
Includes: Experiential Learning Activity
Prerequisite(s): ARTH 1100 and ARTH 1101, or permission of the discipline. Restricted to students enrolled in the Art History B.A. or B.A. Honours.
Lecture three hours a week.

ARTH 2102 [0.5 credit]
Greek Art and Archaeology
The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts are studied.
Also listed as CLCV 2303.
Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).
Prerequisite(s): second-year standing or permission of the Department.
Lecture three hours a week.

ARTH 2105 [0.5 credit]
Roman Art and Archaeology
The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied.
Also listed as CLCV 2304.
Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).
Prerequisite(s): second-year standing or permission of the Department.
Lecture three hours a week.

ARTH 2106 [0.5 credit]
Chinese Art and Visual Culture
A survey of Chinese art from the pre-modern era to reinventions of traditions in modern and contemporary art. Artworks in various media (ink painting, calligraphy, Buddhist sculpture, ceramics, lacquer and garden architecture) will be studied in their historical, cultural and socio-political contexts.
Prerequisite(s): second-year standing or permission of the Department.
Lecture three hours a week.
ARTH 2107 [0.5 credit]
Islamic Architecture and Art
Survey of artistic movements in Islamic art and architecture in the Mediterranean, the Near East, and Central and South Asia, from the seventh century to ca. 1450. Commonalities and differences between major dynastic visual cultures will be explored.
Prerequisite(s): second-year standing or permission of the Discipline.
Lecture three hours a week.

ARTH 2108 [0.5 credit]
Art Worlds
Survey of an area of global art history. Topics may vary from year to year, and will be posted on the School for Studies in Art and Culture website.
Prerequisite(s): second-year standing or permission of the Department.
Lecture three hours a week.

ARTH 2202 [0.5 credit]
Medieval Architecture and Art
A survey of architecture and art in Europe from ca. 313-1500 C.E. Sacred, secular, and domestic works will be discussed with reference to cultural meaning, social function, structure, and form.
Precludes additional credit for ARTH 2200 and ARTH 2201.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2300 [0.5 credit]
Italian Renaissance Art
An examination of major works of art and architecture, issues and themes in the Italian Renaissance; emphasis on the fifteenth and sixteenth centuries, with a look at roots in the fourteenth.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2310 [0.5 credit]
Architecture of the Early Modern World [1400-1750]
An examination of architecture from the late medieval period to the 18th century with particular attention paid to architecture and design cultures within the European and Islamic worlds and their cross-cultural interactions.
Precludes additional credit for ARTH 3305 (no longer offered).
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2404 [0.5 credit]
Art of the 17th and 18th Centuries
Tracing developments in 17th- and 18th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and society.
Precludes additional credit for ARTH 2403 (no longer offered), ARTH 2405 (no longer offered) and ARTH 2406 (no longer offered).
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2502 [0.5 credit]
Art of the 19th Century
Tracing developments in 19th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and modernity.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2510 [0.5 credit]
Architecture of the 18th and 19th Centuries
A survey of key monuments, theories, forms and technological developments of eighteenth- and nineteenth-century architecture.
Precludes additional credit for ARTH 3809 Section "B" taken in 2014.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2600 [0.5 credit]
Modern European Art 1900-1945
Major artistic movements in Europe from about 1900 to 1945.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2601 [0.5 credit]
History and Theory of Photography
Issues, themes, movements in photography and individual photographers from the origins of the medium to the present.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2610 [0.5 credit]
Twentieth-Century Architecture
Developments in architectural form and culture through the course of the twentieth century, with emphasis on the formation and subsequent critique of the Modern Movement.
Precludes additional credit for ARTH 3609 and ARCH 3009.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.
ARTh 2710 [0.5 credit]
Experiencing Architecture
Development of critical thinking, writing, and looking skills in connection to architecture, through a combination of site visits, workshops and classroom exercises.
Includes: Experiential Learning Activity
Prerequisite(s): ARTH 1200 and ARTH 1201 or permission of the discipline. Restricted to students in the History and Theory of Architecture B.A. or B.A. Honours program.
Lecture three hours a week.

ARTh 2807 [0.5 credit]
Philosophy of Art
Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences.
Also listed as PHIL 2807.
Lectures three hours a week.

ARTh 3000 [0.5 credit]
Themes in Canadian Art
Selected aspects of Canadian art in a variety of media. Students will be exposed to works in the National Capital region.
Prerequisite(s): ARTH 2002 or ARTH 2003 or (for a photography topic) ARTH 2601 and second-year standing or higher, or permission of the Discipline.
Lectures three hours a week.

ARTh 3002 [0.5 credit]
Canadian Architecture
Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques.
Includes: Experiential Learning Activity
Also listed as ARCH 4002.
Prerequisite(s): ARTH 1100 and ARTH 1101, or ARTH 1200 and ARTH 1201, or ARCH 1002 and ARCH 1201, and second-year standing or higher, or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTh 3003 [0.5 credit]
Architecture and Representation
Examination of the intersections between architecture, representations, and cultures.
Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing, or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTh 3005 [0.5 credit]
American Architecture
The cultural history of the United States as expressed through its architectural heritage. Selected buildings and complexes from the earliest settlements through the early twentieth century are examined.
Prerequisite(s): ARTH 1201 and second-year standing or higher, or permission of the Discipline.
Lectures three hours a week.

ARTh 3007 [0.5 credit]
Modern Asian Art
Modern and contemporary art in East Asia, beginning in Japan with the 1868 Meiji revolution and the 1911 revolution in China.
Prerequisite(s): second-year standing or higher, or permission of the Discipline.

ARTh 3008 [0.5 credit]
Contemporary Chinese Art and Art History
Modern and contemporary art in China and beyond from the reform period in 1979 until today. Artworks will be examined in terms of their (art-)historical, discursive, socio-political, infrastructural and transcultural conditions of production and reception.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 3100 [0.5 credit]
History and Methods of Art and Architectural History
The study of the history of art and architectural history and the methodologies and research tools employed.
Precludes additional credit for ARTH 3106 (no longer offered).
Prerequisite(s): third-year or higher standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 3102 [0.5 credit]
Studies in Greek Art
A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year. This course is repeatable for credit when the topic changes.
Also listed as CLCV 3306, RELI 3732.
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.
Lecture three hours a week.

ARTh 3105 [0.5 credit]
Studies in Roman Art
A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.
Also listed as CLCV 3307, RELI 3733.
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.
Lecture three hours a week.
ARTH 3107 [0.5 credit]
History and Methods of Architectural History
The study of the methodologies and research approaches employed by architectural historians.
Prerequisite(s): ARTH 3100 and third-year standing or higher in History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 3108 [0.5 credit]
History and Methods of Art History
The study of current methodologies and research tools employed by art historians.
Precludes additional credit for ARTH 3106 (no longer offered).
Prerequisite(s): ARTH 3100 and third-year standing or higher in Art History, or permission of the Discipline.
Seminar three hours a week.

ARTH 3400 [0.5 credit]
History of Printmaking
Exploration of printmaking techniques from the 16th century to the present focusing on the work of famous and lesser-known printmakers. Topics may include: printmaking genres (from fine art prints to caricature), originality versus reproduction, book illustration, the art market, posters and propaganda.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing or higher, or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTH 3507 [0.5 credit]
The Artist in Context
An examination of one artist's or group of artists' life and work. Relevant artistic, intellectual, social, political and theoretical contexts are considered.
Prerequisite(s): ARTH 1101 or ARTH 2502 and second-year standing or higher, or permission of the Discipline.
Lectures three hours a week.

ARTH 3600 [0.5 credit]
Art Since 1945
Contemporary art in the global context from 1945 to the present, including Abstract Expressionism, Pop Art, Postmodernism, object art, performance art and installations.
Prerequisite(s): second-year standing or higher, or permission of the Discipline.
Lecture three hours a week.

ARTH 3701 [0.5 credit]
Art and Architecture on Site
The study of art and/or architecture on site outside the National Capital Region, in Canada or internationally. May include a combination of study in Ottawa and on site. Locations vary. Students are expected to bear all travel and other costs arising from site visits.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Discipline. Applicants will normally have third-year standing with a minimum of 1.0 credit in Art History or History and Theory of Architecture and a GPA of 8.0 or above.
Hours to be arranged. Locations will vary.

ARTH 3705 [0.5 credit]
Selected Museum Exhibition
This seminar complements a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing or higher or permission of the Discipline.
Seminar and/or lectures three hours a week.

ARTH 3710 [0.5 credit]
Architecture and Empire
The impact of imperial power and aspiration on the built environment, from the Ancient world to the present day, taking 'empire' in its broadest political, social and economic sense.
Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.
Seminar and/or lectures three hours a week.

ARTH 3809 [0.5 credit]
A Closer Look at Art and Visual Culture
Selected aspects of art history and visual culture from ancient times to the present.
Prerequisite(s): third-year standing or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTH 3810 [0.5 credit]
A Closer Look at the Designed Environment
Selected aspects of the history of the designed environment, from ancient times to the present.
Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.
Lectures and/or seminars three hours a week.
ARTH 3900 [0.5 credit]
Practicum in Art and Architectural History
Practical experience gained by working on specific projects under the supervision of the staff of a museum, cultural institution, public- or private-sector organization associated with art, architecture, design, or heritage. A maximum of 1.0 credit in practicum courses may be used to fulfill program requirements.
Includes: Experiential Learning Activity
Prerequisite(s): B.A. or B.A. (Honours) in Art History or History and Theory of Architecture with third-year standing or higher and a CGPA of 9.00 or better in ARTH courses, and permission of the Discipline.

ARTH 4000 [0.5 credit]
Topics in Canadian Art
Selected topics in Canadian art. Students will be exposed to works in the collections of the National Capital region.
Prerequisite(s): one of ARTH 2002, ARTH 2003, ARTH 3000 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminars three hours a week.

ARTH 4003 [0.5 credit]
Topics in Contemporary Chinese Art
Critical examination of contemporary Chinese art. Topics include socially engaged art, historiographies of Chinese contemporary art, re-inventions of traditions, gender and politics of the body, exhibition histories and infrastructures of contemporary art in China.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4005 [0.5 credit]
Topics in Contemporary Indigenous Art
This course will use critical theory to examine aspects of contemporary visual art created by the Inuit and First Peoples in North America.
Prerequisite(s): ARTH 2005 or ARTH 2006 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4007 [0.5 credit]
Topics in Asian Art
A selected topic in East Asian Art, which may include 19th century Ukiyo-e woodblock prints, The Gutai Group, performance art in China and Japan, and contemporary Chinese art.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4008 [0.5 credit]
Transnational Theory
Critical examination of transnational theories of cultural analysis, including Orientalism, Post-Colonial theory, translation theory and theories of cultural hybridity.
Precludes additional credit for ARTH 3103.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4107 [0.5 credit]
Topics in Islamic Architecture and Art
Selected aspects of Islamic Architecture and Art.
Prerequisite(s): ARTH 2107 or ARTH 2310 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4202 [0.5 credit]
Topics in Medieval Architecture and Art
Selected aspects of Medieval or Medievalist Architecture and Art.
Prerequisite(s): ARTH 2202 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4305 [0.5 credit]
Topics in Renaissance Art
Selected aspects of Renaissance art and society.
Prerequisite(s): ARTH 2300 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4402 [0.5 credit]
Topics in Art of the 18th and 19th Centuries
Selected aspects of 18th-century and/or 19th-century art. Precludes additional credit for ARTH 4406 (no longer offered), ARTH 4505 (no longer offered).
Prerequisite(s): ARTH 2404 or ARTH 2405 or ARTH 2406 or ARTH 2502 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4600 [0.5 credit]
Art, Architecture, and Gender
Art and/or architectural creation, reception and/or historiography through the lens of gender identities.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.
ARTH 4602 [0.5 credit]  
Issues in the Theory and History of Photography  
Relates the themes of selected theoretical texts on  
photography to specific examples of photographic  
practice.  
Prerequisite(s): ARTH 2601 and fourth-year standing  
in Art History or History and Theory of Architecture, or  
permission of the Discipline.  
Seminar three hours a week.

ARTH 4610 [0.5 credit]  
Topics in Modern Architecture or Design  
Selected topics in architecture and design of the Modern  
era.  
Prerequisite(s): ARTH 2610 and fourth-year standing  
in Art History or History and Theory of Architecture, or  
permission of the Discipline.  
Seminar three hours a week.

ARTH 4701 [0.5 credit]  
Art and Architecture on Site  
Intensive study of art and/or architecture on site outside  
the National Capital region, in Canada or internationally.  
May include a combination of study in Ottawa and on site.  
Students are expected to bear all travel and other costs  
arising from site visits.  
Includes: Experiential Learning Activity  
Prerequisite(s): Permission of the Discipline. Applicants  
will normally have fourth-year standing in Art History  
or History and Theory of Architecture and a CGPA of 8.0  
or above.  
Hours to be arranged. Locations vary.

ARTH 4705 [0.5 credit]  
Seminar: Selected Museum Exhibition  
Studies a major exhibition held at a specific museum.  
Students enrolled in this course are expected to bear all  
travel and other costs arising from required visits to the  
museum.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing in Art History  
or History and Theory of Architecture and permission of  
the Discipline.  
Lectures and/or seminar three hours a week.

ARTH 4800 [0.5 credit]  
Topics in Architectural History  
Selected aspects of architectural history from ancient  
times to the present.  
Prerequisite(s): fourth-year standing in Art History or  
History and Theory of Architecture, or permission of the  
Discipline.  
Seminar three hours a week.

ARTH 4809 [0.5 credit]  
Topics in Art History and Criticism  
Selected aspects of art history and/or criticism from  
ancient times to the present.  
Prerequisite(s): fourth-year standing in Art History or  
History and Theory of Architecture, or permission of the  
Discipline.  
Seminar three hours a week.

ARTH 4900 [0.5 credit]  
Directed Readings and Research  
Supervised readings and research projects. Guidelines  
must be obtained from the Undergraduate Supervisor  
prior to registration. A written project outline, approved  
by the supervising Art History or History and Theory of  
Architecture faculty member, must be submitted by the last  
day for course changes.  
Prerequisite(s): fourth-year Honours standing in Art History  
or History and Theory of Architecture and permission of  
the Discipline.

ARTH 4909 [1.0 credit]  
Honours Research Essay  
An essay of approximately 10,000 words, resulting from  
independent research, supervised by Art History or History  
and Theory of Architecture faculty.  
Prerequisite(s): fourth-year Honours standing in Art History  
or History and Theory of Architecture with a minimum  
CGPA of 9.00 and permission of the Discipline.

Biochemistry  
This section presents the requirements for programs in:  
• Biochemistry B.Sc. Honours  
• Biochemistry and Biotechnology B.Sc. Honours  
• Computational Biochemistry B.Sc. Honours  
• Biochemistry B.Sc. Major  
Requirements for the program Biochemistry and  
Biotechnology are presented in the Biotechnology  
program section of this Calendar.  

Program Requirements  
Course Categories for Biochemistry  
The program descriptions below make use of the following  
course categories that are defined in the Regulations for  
the B.Sc.  
• Approved Courses Outside the Faculties of Science  
  and Engineering and Design  
• Free Electives  

Biochemistry  
B.Sc. Honours (20.0 credits)  
A. Credits included in the Major CGPA (13.5 credits)  
1. 2.0 credits in:  
   BIOL 1103 [0.5] Foundations of Biology I  
   BIOL 1104 [0.5] Foundations of Biology II  
   BIOL 2104 [0.5] Introductory Genetics  
   BIOL 3104 [0.5] Molecular Genetics  
2. 0.5 credit from:  
   BIOL 2001 [0.5] Animals: Form and Function  
   BIOL 2002 [0.5] Plants: Form and Function  
3. 0.5 credit from:  
   BIOL 3205 [0.5] Plant Biochemistry and Physiology  
   BIOL 3305 [0.5] Human and Comparative  
   Physiology  
   BIOL 3307 [0.5] Advanced Human Anatomy and  
   Physiology
4. 1.0 credit from:  
BIOL 3102 [0.5] Mycology  
BIOL 3201 [0.5] Cell Biology  
BIOL 3202 [0.5] Principles of Developmental Biology  
BIOL 3205 [0.5] Plant Biochemistry and Physiology  
BIOL 3301 [0.5] Biotechnology II  
BIOL 3303 [0.5] Experimental Microbiology  
BIOL 3305 [0.5] Human and Comparative Physiology  
BIOL 3306 [0.5] Human Anatomy and Physiology  
BIOL 3307 [0.5] Advanced Human Anatomy and Physiology  
BIOL 3501 [0.5] Biomechanics  
BIOL 4008 [0.5] Molecular Plant Development  
BIOL 4103 [0.5] Population Genetics  
BIOL 4106 [0.5] Advances in Molecular Biology  
BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics  
BIOL 4200 [0.5] Immunology  
BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering  
BIOL 4202 [0.5] Mutagenesis and DNA Repair  
BIOL 4206 [0.5] Human Genetics  
BIOL 4207 [0.5] Advanced Embryology & Developmental Biology  
BIOL 4209 [0.5] Advanced Plant Physiology  
BIOL 4300 [0.5] Applied Microbiology  
BIOL 4301 [0.5] Current Topics in Biotechnology  
BIOL 4306 [0.5] Animal Neurophysiology  
BIOL 4309 [0.5] Studies in Human Performance  
BIOL 4317 [0.5] Neuroethology: The Neural Basis of Animal Behaviour  
BIOL 4318 [0.5] Adaptations to Extreme Environments  
BIOL 4319 [0.5] Studies in Exercise Physiology  

5. 4.0 credits in:  
CHEM 1001 [0.5] General Chemistry I  
& CHEM 1002 [0.5] General Chemistry II  
CHEM 2103 [0.5] Physical Chemistry I  
or BIOL 2300 [0.5] Physical Biochemistry  
CHEM 2203 [0.5] Organic Chemistry I  
CHEM 2204 [0.5] Organic Chemistry II  
CHEM 2303 [0.5] Analytical Chemistry II  
CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry  
CHEM 3201 [0.5] Advanced Organic Chemistry I  

6. 0.5 credit from:  
CHEM 3202 [0.5] Advanced Organic Chemistry II  
CHEM 3205 [0.5] Experimental Organic Chemistry  

7. 3.5 credits in:  
BIOL 2200 [0.5] Cellular Biochemistry  
BIOL 3101 [0.5] General Biochemistry I  
BIOL 3102 [0.5] General Biochemistry II  
BIOL 3103 [0.5] Practical Biochemistry I  
BIOL 3104 [0.5] Practical Biochemistry II  
BIOL 3202 [0.5] Biophysical Techniques and Applications  

8. 0.5 credit from:  
BIOL 3008 [0.5] Bioinformatics  
BIOL 3203 [0.5] Biochemical Pharmacology  
BIOL 4004 [0.5] Industrial Biochemistry  
BIOL 4005 [0.5] Biochemical Regulation  
BIOL 4007 [0.5] Membrane Biochemistry  
BIOL 4008 [0.5] Computational Systems Biology  
BIOL 4009 [0.5] Biochemistry of Disease  
BIOL 4200 [0.5] Immunology  
BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering  
BIOL 4202 [0.5] Mutagenesis and DNA Repair  
BIOL 4203 [0.5] Advanced Metabolism  
BIOL 4204 [0.5] Protein Biotechnology  
BIOL 4708 [0.5] Principles of Toxicology  

9. 1.0 credit from:  
BIOL 4906 [1.0] Interdisciplinary Research Project  
BIOL 4907 [1.0] Honours Essay and Research Proposal  
BIOL 4908 [1.0] Research Project  

B. Credits Not Included in the Major CGPA (6.5 credits)  
10. 1.0 credit from:  
PHYS 1007 [0.5] Elementary University Physics I  
& PHYS 1008 [0.5] Elementary University Physics II  
or  
PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics  
& PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion  

11. 1.5 credits in:  
MATH 1007 [0.5] Elementary Calculus I  
MATH 1107 [0.5] Linear Algebra I  
STAT 2507 [0.5] Introduction to Statistical Modeling I  

12. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)  

13. 1.5 credits from:  
BIOL courses listed in but not used to fulfill Item 8 above, one of:  
BIOL 2400 [0.5] Independent Research I  
BIOL 3400 [0.5] Independent Research II  
BIOL 4901 [0.5] Selected Topics in Biochemistry  
BIOL 4008 [0.5] Computational Systems Biology  
BIOL courses listed in but not used to fulfill Item 4 above  
BIOL 2001 [0.5] Animals: Form and Function  
BIOL 2002 [0.5] Plants: Form and Function  
BIOL 2301 [0.5] Biotechnology I  
BIOL 2303 [0.5] Microbiology  

CHEM courses listed in but not used to fulfill Item 6 above:  
CHEM 3100 [0.5] Physical Chemistry II  
CHEM 3101 [0.5] Quantum Chemistry  
CHEM 3102 [0.5] Methods of Computational Chemistry  
CHEM 3106 [0.5] Computational Chemistry Methods Laboratory
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<td>COMP 2401</td>
<td>Introduction to Systems Programming</td>
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**Total Credits:** 20.0

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**Biochemistry and Biotechnology B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (15.0 credits)**

1. **4.0 credits in:**
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - BIOL 2104 [0.5] Introductory Genetics
   - BIOL 2301 [0.5] Biotechnology I
   - BIOL 2303 [0.5] Microbiology
   - BIOL 3104 [0.5] Molecular Genetics
   - BIOL 3301 [0.5] Biotechnology II
   - BIOL 4301 [0.5] Current Topics in Biotechnology

2. **0.5 credit from:**
   - BIOL 2001 [0.5] Animals: Form and Function
   - BIOL 2002 [0.5] Plants: Form and Function

3. **0.5 credit from:**
   - BIOL 3201 [0.5] Cell Biology
   - BIOL 3205 [0.5] Plant Biochemistry and Physiology
   - BIOL 3303 [0.5] Experimental Microbiology
   - BIOL 3305 [0.5] Human and Comparative Physiology
   - BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics

4. **0.5 credit from:**
   - BIOL 3201 [0.5] Cell Biology
   - BIOL 3303 [0.5] Experimental Microbiology
   - BIOL 4106 [0.5] Advances in Molecular Biology
   - BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics
   - BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering
   - BIOL 4300 [0.5] Applied Microbiology
   - BIOL 4303 [0.5] Advances in Microbiology

**Total Credits:** 14.0

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**B. Credits Included in the Major CGPA (3.0 credits)**

5. **3.0 credits in:**
   - BIOL 2200 [0.5] Cellular Biochemistry
   - BIOL 3101 [0.5] General Biochemistry I
   - BIOL 3102 [0.5] General Biochemistry II
   - BIOL 3103 [0.5] Practical Biochemistry I
   - BIOL 3104 [0.5] Practical Biochemistry II
   - BIOL 3202 [0.5] Biophysical Techniques and Applications

6. **1.0 credit from:**
   - BIOL 4907 [1.0] Honours Essay and Research Proposal
   - BIOL 4908 [1.0] Research Project

7. **1.0 credit from:**
   - BIOL 3008 [0.5] Bioinformatics
   - or BIOL 3203 [0.5] Biochemical Pharmacology
   - BIOL 4004 [0.5] Industrial Biochemistry
   - BIOL 4005 [0.5] Biochemical Regulation
   - BIOL 4007 [0.5] Membrane Biochemistry
   - BIOL 4008 [0.5] Computational Systems Biology
   - BIOL 4009 [0.5] Biochemistry of Disease
   - BIOL 4200 [0.5] Immunology
   - BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering
   - BIOL 4202 [0.5] Mutagenesis and DNA Repair
   - BIOL 4203 [0.5] Advanced Metabolism
   - BIOL 4204 [0.5] Protein Biotechnology
   - BIOL 4708 [0.5] Principles of Toxicology

8. **4.0 credits in:**
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - CHEM 2103 [0.5] Physical Chemistry I
   - or BIOL 2300 [0.5] Physical Biochemistry
   - CHEM 2203 [0.5] Organic Chemistry I
   - CHEM 2204 [0.5] Organic Chemistry II
   - CHEM 2303 [0.5] Analytical Chemistry II
   - CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry
   - CHEM 3201 [0.5] Advanced Organic Chemistry I

9. **0.5 credit from:**
   - BIOL courses listed in, but not used to fulfill, Item 7 above
   - BIOL 2400 [0.5] Independent Research I
   - BIOL 3400 [0.5] Independent Research II
   - BIOL 4001 [0.5] Methods in Biochemistry
   - BIOL 4901 [0.5] Selected Topics in Biochemistry
   - BIOL courses listed in, but not used to fulfill, Item 3 or 4
   - BIOL 2001 [0.5] Animals: Form and Function
   - BIOL 2002 [0.5] Plants: Form and Function
   - BIOL 3102 [0.5] Mycology
   - BIOL 3202 [0.5] Principles of Developmental Biology
   - BIOL 3306 [0.5] Human Anatomy and Physiology
   - BIOL 3307 [0.5] Advanced Human Anatomy and Physiology
   - BIOL 3501 [0.5] Biomechanics
   - BIOL 4104 [0.5] Evolutionary Genetics
   - BIOL 4206 [0.5] Human Genetics
Computational Biochemistry

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major (13.5 credits)

1. 2.0 credits in:
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - BIOL 2104 [0.5] Introductory Genetics
   - BIOL 3104 [0.5] Molecular Genetics

2. 3.0 credits in:
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - CHEM 2103 [0.5] Physical Chemistry I
   - CHEM 3104 [0.5] Physical Biochemistry
   - CHEM 2203 [0.5] Organic Chemistry I
   - CHEM 2303 [0.5] Analytical Chemistry II
   - CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry

3. 0.5 credit in:
   - CHEM 2204 [0.5] Organic Chemistry II

4. 4.0 credits in:
   - BIOC 2200 [0.5] Cellular Biochemistry

B. Credits Not Included in the Major (6.5 credits)

7. 1.0 credit in:
   - BIOC 4906 [1.0] Interdisciplinary Research Project
   - or BIOC 4908 [1.0] Research Project

8. 1.0 credit from:
   - PHYS 1007 [0.5] Elementary University Physics I
   - PHYS 1008 [0.5] Elementary University Physics II
   - PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

9. 2.0 credits in:
   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1107 [0.5] Linear Algebra I
   - STAT 2507 [0.5] Introduction to Statistical Modeling I

10. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

11. 1.0 credit in:
    - COMP 2402 [0.5] Abstract Data Types and Algorithms
    - or COMP at the 2000-level or above

12. 0.5 credit in free electives.

Total Credits 20.0

Biochemistry

B.Sc. Major (20.0 credits)

A. Credits included in the Major CGPA (12.0 credits)

1. 2.0 credits in:
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - BIOL 2104 [0.5] Introductory Genetics
   - BIOL 3104 [0.5] Molecular Genetics

2. 0.5 credit in:
   - BIOL 3101 [0.5] General Biochemistry I
   - BIOL 3102 [0.5] General Biochemistry II
   - BIOL 3103 [0.5] Practical Biochemistry I
   - BIOL 3104 [0.5] Practical Biochemistry II
   - BIOC 3202 [0.5] Biophysical Techniques and Applications
   - BIOC 3008 [0.5] Bioinformatics
   - BIOC 4008 [0.5] Computational Systems Biology

3. 1.5 credits in:
   - COMP 1005 [0.5] Introduction to Computer Science I
   - COMP 1006 [0.5] Introduction to Computer Science II
   - COMP 2401 [0.5] Introduction to Systems Programming

4. 1.5 credits from:
   - MATH 1805 [0.5] Discrete Structures I
   - MATH 2107 [0.5] Linear Algebra II
   - STAT 2509 [0.5] Introduction to Statistical Modeling II

5. 2.0 credits in:
   - BIOCHEM [0.5] Advanced Biochemistry
   - BIOCHEM [0.5] Advanced Biochemistry II
   - BIOCHEM [0.5] Advanced Biochemistry III
   - BIOCHEM [0.5] Advanced Biochemistry IV

6. 1.0 credit from:
   - PHYS 1007 [0.5] Elementary University Physics I
   - PHYS 1008 [0.5] Elementary University Physics II
   - PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

Total Credits 20.0

The Academic Year (Graduate and Undergraduate Studies)
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<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2501 [0.5]</td>
<td>Introduction to Inorganic and Bioinorganic Chemistry</td>
</tr>
<tr>
<td></td>
<td>CHEM 3201 [0.5]</td>
<td>Advanced Organic Chemistry I</td>
</tr>
<tr>
<td>8.</td>
<td>0.5 credit from:</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>CHEM 3202 [0.5]</td>
<td>Advanced Organic Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 3205 [0.5]</td>
<td>Experimental Organic Chemistry</td>
</tr>
<tr>
<td>B. Credits Not Included in the Major CGPA (8.0 credits)</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>1.0 credit from:</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td></td>
<td>&amp; PHYS 1008 [0.5]</td>
<td>Elementary University Physics II</td>
</tr>
<tr>
<td></td>
<td>PHYS 1003 [0.5]</td>
<td>Introductory Mechanics and</td>
</tr>
<tr>
<td></td>
<td>&amp; PHYS 1004 [0.5]</td>
<td>Thermodynamics</td>
</tr>
<tr>
<td></td>
<td>Introductory Electromagnetism and Wave Motion</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>1.5 credits in:</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>MATH 1007 [0.5]</td>
<td>Elementary Calculus I</td>
</tr>
<tr>
<td></td>
<td>MATH 1107 [0.5]</td>
<td>Linear Algebra I</td>
</tr>
<tr>
<td></td>
<td>STAT 2507 [0.5]</td>
<td>Introduction to Statistical Modeling I</td>
</tr>
<tr>
<td>11.</td>
<td>2.0 credits in:</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>3.0 credits from:</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>Biochemistry courses listed in but not used to fulfill Item 6 above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOC 4901 [0.5]</td>
<td>Selected Topics in Biochemistry</td>
</tr>
<tr>
<td></td>
<td>Biology courses listed in, but not used to fulfill, Item 4 above</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOC 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td></td>
<td>BIOC 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td></td>
<td>BIOC 2301 [0.5]</td>
<td>Biotechnology I</td>
</tr>
<tr>
<td></td>
<td>BIOC 2303 [0.5]</td>
<td>Microbiology</td>
</tr>
<tr>
<td></td>
<td>CHEM 3100 [0.5]</td>
<td>Physical Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 3101 [0.5]</td>
<td>Quantum Chemistry</td>
</tr>
<tr>
<td></td>
<td>CHEM 3102 [0.5]</td>
<td>Methods of Computational Chemistry</td>
</tr>
<tr>
<td></td>
<td>CHEM 3106 [0.5]</td>
<td>Computational Chemistry Methods Laboratory</td>
</tr>
<tr>
<td></td>
<td>CHEM 3107 [0.5]</td>
<td>Experimental Methods in Nanoscience</td>
</tr>
<tr>
<td></td>
<td>CHEM 3202 [0.5]</td>
<td>Advanced Organic Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 3205 [0.5]</td>
<td>Experimental Organic Chemistry</td>
</tr>
<tr>
<td></td>
<td>CHEM 3504 [0.5]</td>
<td>Inorganic Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 3600 [0.5]</td>
<td>Introduction to Nanotechnology</td>
</tr>
<tr>
<td></td>
<td>CHEM 3700 [0.5]</td>
<td>Industrial Applications of Chemistry</td>
</tr>
<tr>
<td></td>
<td>CHEM 3800 [0.5]</td>
<td>The Chemistry of Environmental Pollutants</td>
</tr>
<tr>
<td></td>
<td>CHEM 4201 [0.5]</td>
<td>Macromolecular Nanotechnology</td>
</tr>
<tr>
<td></td>
<td>CHEM 4202 [0.5]</td>
<td>Advanced Topics in Organic Chemistry I</td>
</tr>
</tbody>
</table>

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Students. The recommended course pattern for students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

**Change of Program within the B.Sc. Degree**

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

**Experimental Science Requirement**

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

<table>
<thead>
<tr>
<th>Approved Experimental Science Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biochemistry</strong></td>
<td></td>
</tr>
<tr>
<td>BIOC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOC 4001 [0.5]</td>
<td>Methods in Biochemistry</td>
</tr>
<tr>
<td>BIOC 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
</tr>
<tr>
<td><strong>Biology</strong></td>
<td></td>
</tr>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td></td>
</tr>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
</tr>
</tbody>
</table>

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**B.Sc. Regulations**

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

**Breadth Requirement for the B.Sc.**

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

**Declared and Undeclared Students**

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 4203 [0.5]</td>
<td>Synthetic Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 4206 [0.5]</td>
<td>Natural Products Chemistry</td>
<td></td>
</tr>
<tr>
<td>PHYS 2202 [0.5]</td>
<td>Wave Motion and Optics</td>
<td></td>
</tr>
<tr>
<td>PHYS 2604 [0.5]</td>
<td>Modern Physics I</td>
<td></td>
</tr>
<tr>
<td>MATH 2007 [0.5]</td>
<td>Elementary Calculus</td>
<td></td>
</tr>
<tr>
<td>MATH 2008 [0.5]</td>
<td>Intermediate Calculus</td>
<td></td>
</tr>
<tr>
<td>MATH 2107 [0.5]</td>
<td>Linear Algebra II</td>
<td></td>
</tr>
<tr>
<td>COMP 1005 [0.5]</td>
<td>Introduction to Computer Science I</td>
<td></td>
</tr>
<tr>
<td>COMP 1006 [0.5]</td>
<td>Introduction to Computer Science II</td>
<td></td>
</tr>
<tr>
<td>COMP 2401 [0.5]</td>
<td>Introduction to Systems Programming</td>
<td></td>
</tr>
</tbody>
</table>

13. 0.5 credit in free electives. 0.5

Total Credits 20.0
### Course Categories for B.Sc. Programs

#### Science Geography Courses
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth's Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography
- GEOG 3102 [0.5] Geomorphology
- GEOG 3103 [0.5] Watershed Hydrology
- GEOG 3104 [0.5] Principles of Biogeography
- GEOG 3105 [0.5] Climate and Atmospheric Change
- GEOG 3106 [0.5] Aquatic Science and Management
- GEOG 3108 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 3109 [0.5] Field Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Microclimatology
- GEOG 4108 [0.5] Permafrost
- GEOG 3107 [0.5] Climate and Atmospheric Change
- GEOG 3108 [0.5] Aquatic Science and Management
- GEOG 3109 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 4009 [0.5] Directed Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Microclimatology
- GEOG 4108 [0.5] Permafrost

#### Science Psychology Courses
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 3207 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II

#### Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:
- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
- ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 2903
- Science Geography Courses (see list above)
- Science Psychology Courses (see list above)
- STAT (Statistics)
Free Electives and Engineering and Design (may include Approved Courses Outside the Faculties of Science Electives list above. The 2000-4000 level chosen from: Science Faculty Electives are courses at the 1000-4000 level chosen from:

- BIOL (Biochemistry)
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering
- ENSC 2001
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)
All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above), NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives
Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 4810 [0.5]</td>
<td>Education Research in Biology</td>
</tr>
<tr>
<td>CHEM 1003 [0.5]</td>
<td>The Chemistry of Food, Health and Drugs</td>
</tr>
<tr>
<td>CHEM 1004 [0.5]</td>
<td>Drugs and the Human Body</td>
</tr>
<tr>
<td>CHEM 1007 [0.5]</td>
<td>Chemistry of Art and Artifacts</td>
</tr>
<tr>
<td>ERTH 1010 [0.5]</td>
<td>Our Dynamic Planet Earth</td>
</tr>
<tr>
<td>ERTH 1011 [0.5]</td>
<td>Evolution of the Earth</td>
</tr>
<tr>
<td>ERTH 2415 [0.5]</td>
<td>Natural Disasters</td>
</tr>
<tr>
<td>ISCI 1001 [0.5]</td>
<td>Introduction to the Environment</td>
</tr>
<tr>
<td>ISCI 2000 [0.5]</td>
<td>Natural Laws</td>
</tr>
<tr>
<td>ISCI 2002 [0.5]</td>
<td>Human Impacts on the Environment</td>
</tr>
<tr>
<td>MATH 0107 [0.5]</td>
<td>Algebra and Geometry</td>
</tr>
<tr>
<td>PHYS 1901 [0.5]</td>
<td>Planetary Astronomy</td>
</tr>
<tr>
<td>PHYS 1902 [0.5]</td>
<td>From our Star to the Cosmos</td>
</tr>
<tr>
<td>PHYS 1905 [0.5]</td>
<td>Physics Behind Everyday Life</td>
</tr>
<tr>
<td>PHYS 2903 [0.5]</td>
<td>Physics Towards the Future</td>
</tr>
</tbody>
</table>

Prohibited Courses
The following courses are not acceptable for credit in any B.Sc. program:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1001 [0.5]</td>
<td>Introduction to Computational Thinking for Arts and Social Science Students</td>
</tr>
<tr>
<td>MATH 0005 [0.5]</td>
<td>Precalculus: Functions and Graphs</td>
</tr>
<tr>
<td>MATH 0006 [0.5]</td>
<td>Precalculus: Trigonometric Functions and Complex Numbers</td>
</tr>
<tr>
<td>MATH 1009 [0.5]</td>
<td>Mathematics for Business</td>
</tr>
<tr>
<td>MATH 1119 [0.5]</td>
<td>Linear Algebra: with Applications to Business</td>
</tr>
<tr>
<td>MATH 1401 [0.5]</td>
<td>Elementary Mathematics for Economics I</td>
</tr>
<tr>
<td>MATH 1402 [0.5]</td>
<td>Elementary Mathematics for Economics II</td>
</tr>
</tbody>
</table>

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements
Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for
Students must have:

To obtain a Satisfactory grade for the co-op work term

Work Term Assessment and Evaluation

Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.
Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Biochemistry, Computational Biochemistry: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biochemistry and Computational Biochemistry students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: BIOC 3999

Work/Study Pattern:

<table>
<thead>
<tr>
<th>Year 1 Pattern</th>
<th>Year 2 Term</th>
<th>Year 3 Pattern</th>
<th>Year 4 Pattern</th>
<th>Year 5 Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Fall S</td>
<td>Pattern Term</td>
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<td>Winter S</td>
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<td>Summer S</td>
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<tr>
<td>Summer O/W</td>
<td>W</td>
<td>Summer O/W</td>
<td>Summer O/W</td>
<td>Summer O/W</td>
</tr>
</tbody>
</table>

Legend:

- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours Program

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA
of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

B.Sc. Major Program

B.Sc. Program

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing
For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Biochemistry (BIOC) Courses

BIOC 2200 [0.5 credit]
Cellular Biochemistry
Cellular functions and their interrelationships. Introduction to thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.
Includes: Experiential Learning Activity
Also listed as BIOL 2200.
Precludes additional credit for BIOL 2201.
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), (CHEM 1006 or CHEM 1002) or permission of the Institute. It is strongly recommended that students in Biochemistry programs take this course in their second year of study.
Lectures three hours a week, laboratory or tutorial four hours a week.

BIOC 2300 [0.5 credit]
Physical Biochemistry
Energy of biological systems, molecular interactions, diffusion principles, introduction to protein folding, structure and thermodynamics, ligand binding and nucleic acid structures; experimental design and data management.
Precludes additional credit for CHEM 2103.
Prerequisite(s): BIOC 2200 (can be taken concurrently with BIOC 2300) and MATH 1007 and MATH 1107, and (PHYS 1007 and PHYS 1107) or (PHYS 1103 and PHYS 1104).
Lectures three hours a week, tutorials three hours a week.

BIOC 2400 [0.5 credit]
Independent Research I
Students carry out a laboratory research project under the supervision of a faculty member from the Institute of Biochemistry. A research report must be submitted by the last day of classes for evaluation by the Director and Faculty supervisor.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to Honours students of second-year standing in a Biochemistry program with a GPA of 10.0 or higher in first year, and approval of the Director and a Faculty supervisor.
Laboratory research for at least three hours a week over two terms.
BIOC 3008 [0.5 credit]
Bioinformatics
A practical exploration in the application of information technology to biochemistry and molecular biology. Insight into biological knowledge discovery via molecular structure and function prediction, comparative genomics and biological information management.
Includes: Experiential Learning Activity
Also listed as BIOL 3008 and COMP 3308.
Prerequisite(s): BIOC 2200 or BIOL 2200; or permission of the Institute.
Lecture two hours a week, computer workshop three hours a week.

BIOC 3101 [0.5 credit]
General Biochemistry I
Chemistry, structure and function of proteins, lipids, carbohydrates and nucleic acids. Monomers, linkages and types of biochemical polymers that are formed. Mechanism of action of enzymes, regulatory control mechanisms of proteins and integration of biochemical pathways.
Precludes additional credit for CHEM 3401.
Prerequisite(s): (BIOC 2200 or BIOL 2200), and (CHEM 2203 and CHEM 2204) or (CHEM 2207 and CHEM 2208) or permission of the Institute.
Lectures three hours a week.

BIOC 3102 [0.5 credit]
General Biochemistry II
Prerequisite(s): BIOC 3101 and BIOL 2104.
Lectures three hours a week.

BIOC 3103 [0.5 credit]
Practical Biochemistry I
Introduction to experimental biochemistry and the theory and concepts dealt with in BIOC 3101, and BIOC 3202.
Includes: Experiential Learning Activity
Precludes additional credit for BIOC 3006 (no longer offered).
Prerequisite(s): (BIOC 2200 or BIOL 2200) and CHEM 2203 or permission of the Institute. CHEM 2204 and (BIOC 2300 or CHEM 2103) are also recommended.
It is highly recommended that BIOC 3101 and BIOC 3202 be taken concurrently.
Laboratory four hours a week, tutorial one hour per week.

BIOC 3104 [0.5 credit]
Practical Biochemistry II
Introduction to experimental biochemistry and the theory and concepts dealt with in BIOC 3101, BIOC 3102, and BIOC 3202.
Includes: Experiential Learning Activity
Precludes additional credit for BIOC 3006 (no longer offered).
Prerequisite(s): BIOC 3103. It is highly recommended that BIOC 3102 be taken concurrently.
Laboratory four hours a week, tutorial one hour a week.

BIOC 3202 [0.5 credit]
Biophysical Techniques and Applications
Theory and applications of current biochemical/biophysical instrumentation and techniques including biophysical spectroscopy, molecular structure determination, calorimetry, and mass spectrometry.
Precludes additional credit for BIOC 4002.
Prerequisite(s): BIOC 2200 or permission of the Institute.
Lectures three hours a week.

BIOC 3203 [0.5 credit]
Biochemical Pharmacology
Biochemical principles of pharmacology, including receptor mechanisms, signal transduction, pharmacokinetics, and pharmacodynamics. Genome-wide association studies, pharmacogenomics, and personalized medicine will also be included.
Prerequisite(s): BIOC 2200 or BIOL 2200, or permission of the Institute.
Lectures three hours a week.

BIOC 3400 [0.5 credit]
Independent Research II
Students carry out a laboratory research project under the supervision of faculty member from the Institute of Biochemistry. A research report must be submitted by the last day of classes for evaluation by the Director and Faculty supervisor.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to Honours students of third-year standing in a Biochemistry program with a GPA of 10.0 or higher in second year, and approval of the Director and Faculty supervisor.
Laboratory research for at least three hours a week over two terms.

BIOC 3999 [0.0 credit]
Co-operative Work Term
Practical experience for students enrolled in the co-operative option. Students must receive a satisfactory evaluation from their work term employer; and present a written report describing their work term project. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Biochemistry co-operative option and permission of the Institute.
BIOC 4001 [0.5 credit]  
Methods in Biochemistry  
Principles and applications of modern biochemical methodology, including ultracentrifugation, electrophoresis, ELISA, EMSA, experimental planning, ligand binding kinetics, fluorescence spectroscopy, affinity purification, and in vitro translation.  
Includes: Experiential Learning Activity  
Prerequisite(s): BIOC 3103 and BIOC 3104 or permission of the Institute.  
Lectures and discussion two hours, laboratory four hours a week.

BIOC 4004 [0.5 credit]  
Industrial Biochemistry  
The application of biochemistry to the production of biological compounds useful in nutrition, medicine, and the food and chemical industries. General strategies for efficient production of these compounds by controlling the activities of living cells or enzymes.  
Prerequisite(s): BIOC 3101 and BIOC 3102 (BIOC 3102 may be taken concurrently), or permission of the Institute.  
Lecture three hours a week.

BIOC 4005 [0.5 credit]  
Biochemical Regulation  
Regulation at the transcriptional, translational and metabolic level; regulation of cell and subcellular organelle function and other timely topics may be included.  
Prerequisite(s): BIOC 3101 and BIOC 3102.  
Lectures three hours a week.

BIOC 4007 [0.5 credit]  
Membrane Biochemistry  
Biochemical and biophysical aspects of biomembrane structure and function. Topics may include: membrane lipids and proteins, lipid polymorphism, model membranes, liposomes, membrane biogenesis, the membrane cytoskeleton, membrane trafficking, membrane fusion, exocytosis and signal transduction across membranes.  
Prerequisite(s): BIOL 2200 or BIOC 2200, or BIOC 3101 (which may be taken concurrently with BIOC 4007), or permission of the Institute.  
Lectures two hours a week and workshop two hours a week.

BIOC 4008 [0.5 credit]  
Computational Systems Biology  
Modeling and simulation of metabolic and regulatory networks towards understanding complex and highly dynamic cellular systems. Biotechnological applications include metabolic engineering, synthetic biology, and drug discovery.  
Includes: Experiential Learning Activity  
Also listed as COMP 4308.  
Prerequisite(s): BIOC 3101 or permission of the Institute.  
Lecture one and a half hours per week, workshop one and a half hours per week.

BIOC 4009 [0.5 credit]  
Biochemistry of Disease  
The biochemical basis of disease including genetic and metabolic disorders such as cancer, neurological degenerative conditions, diabetes, stroke and microbial infections.  
Prerequisite(s): BIOC 3101 and BIOC 3102, or permission of the Institute.  
Lectures three hours a week.

BIOC 4200 [0.5 credit]  
Immunology  
The organization and function of the immune system, including the anatomy of the immune system, the properties and behaviour of cells of the immune system, and the molecular and genetic bases of the immune response.  
Also listed as BIOL 4200.  
Prerequisite(s): BIOL 3201 or permission of the Institute.  
Lectures three hours a week.

BIOC 4201 [0.5 credit]  
Advanced Cell Culture and Tissue Engineering  
Theory and application of current techniques and developments in cell culture as applied to research questions in the field of stem cells and tissue engineering.  
Includes: Experiential Learning Activity  
Also listed as BIOL 4201.  
Prerequisite(s): BIOL 3201 or permission of the Institute.  
Laboratory four hours per week, tutorial one hour a week.

BIOC 4202 [0.5 credit]  
Mutagenesis and DNA Repair  
A mechanistic study of mutagenesis and DNA repair. Topics include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the development of genetic disease and cancer.  
Also listed as BIOL 4202.  
Prerequisite(s): BIOL 3104 and BIOL 2200/BIOC 2200, or permission of the Institute.  
Lectures and tutorial three hours a week.

BIOC 4203 [0.5 credit]  
Advanced Metabolism  
Structure, biochemical derivation and function of secondary metabolites such as toxins and antibiotics. Examples from plant, fungal and animal systems.  
Prerequisite(s): BIOC 3101 and BIOC 3102, or permission of the Institute.  
Lectures three hours a week.
BIOC 4204 [0.5 credit]
Protein Biotechnology
An advanced lecture, discussion and seminar course covering the theory, development and current techniques of protein and enzyme engineering. Topics to be discussed may also include applications in biotechnology, nanotechnology and new frontiers in basic and applied research. Precludes additional credit for BIOC 4002. Prerequisite(s): BIOC 3101 and BIOC 3202 (may be taken concurrently), or permission of the Institute. Lectures two hours a week, workshop two hours a week.

BIOC 4708 [0.5 credit]
Principles of Toxicology
Basic theorems of toxicology with examples of current research problems. Toxic risk is defined as the product of intensive hazard and extensive exposure. Each factor is assessed in scientific and social contexts and illustrated with many types of experimental material. Prerequisite(s): BIOC 3101 and fourth-year standing or permission of the Institute. Also offered at the graduate level, with different requirements, as BIOL 6402, CHEM 5708, for which additional credit is precluded. Lectures three hours a week.

BIOC 4901 [0.5 credit]
Selected Topics in Biochemistry
Selected topics of current interest in biochemistry are offered upon approval by the Director in consultation with members of the Institute.

BIOC 4906 [1.0 credit]
Interdisciplinary Research Project
Collaborative, interdisciplinary research project approved by the Director. Requires co-supervision, with at least one faculty member from the Institute of Biochemistry. Evaluation is based on a written thesis and poster presentation. Includes: Experiential Learning Activity Precludes additional credit for BIOC 4907 and BIOC 4908. Prerequisite(s): (BIOC 3103 and BIOC 3104) and (BIOC 3101 and BIOC 3102) or equivalent, eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology, permission of the Institute.

BIOC 4907 [1.0 credit]
Honours Essay and Research Proposal
An independent research study using library or computational resources. The candidate will prepare a critical review of a topic approved by a faculty adviser. Evaluation will be based on a written report and a poster presentation of the project. Includes: Experiential Learning Activity Precludes additional credit for BIOC 4906 [1.0] and BIOC 4908 [1.0]. Prerequisite(s): fourth-year standing in an Honours Biochemistry program and permission of the Institute.

BIOC 4908 [1.0 credit]
Research Project
Students carry out a research project approved by the Director, under the supervision of a faculty member of the Institute, in either the Biology or Chemistry departments. Evaluation is based on a written thesis and poster presentation. Includes: Experiential Learning Activity Precludes additional credit for BIOC 4906 and BIOC 4907. Prerequisite(s): (BIOC 3103 and BIOC 3104) and (BIOC 3101 and BIOC 3102) or equivalent, and eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology.

Biology
This section presents the requirements for programs in:
- Bioinformatics B.Sc. Honours
- Biology B.Sc. Honours
- Biology with Concentration in Biodiversity, Natural History, and Conservation Science B.Sc. Honours
- Biology with Concentration in Ecology, Evolution and Behaviour B.Sc. Honours
- Biology with Concentration in Health Science B.Sc. Honours
- Biology with Concentration in Molecular and Cellular Biology B.Sc. Honours
- Biology with Concentration in Physiology B.Sc. Honours
- Biology B.Sc. Major
- Biology B.Sc.
- Biology and Biotechnology B.Sc. Honours
- Biology and Earth Sciences B.Sc. Combined Honours
- Biology and Physics B.Sc. Combined Honours
- Neuroscience and Biology B.Sc. Combined Honours
- Biology B.A. Honours
- Biology B.A.
- Biology B.A. Combined Honours
- Minor in Biology

Program Requirements
Course Categories for Biology Programs
The program descriptions below make use of the following course categories that are defined in the Bachelor of Science Regulations in this Calendar.
- Science Faculty Electives
- Advanced Science Faculty Electives
- Science Continuation
- Science Geography
- Science Psychology
- Approved Courses Outside the Faculties of Science and Engineering and Design
- Free Electives
- Restricted Courses: Students in the Biology B.Sc., Biology B.Sc. Major, and Biology B.Sc. Honours programs (except students in the Biology B.A. Biology
B.Sc. Honours (20.0 credits)

**Bioinformatics**

**B.Sc. Honours (20.0 credits)**

A. Credits included in the Major CGPA (12.5 credits)

<table>
<thead>
<tr>
<th>1. 4.0 credits in:</th>
<th>4.0</th>
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<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOL 3104 [0.5]</td>
<td>Molecular Genetics</td>
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<tr>
<td>BIOL 4106 [0.5]</td>
<td>Advances in Molecular Biology</td>
</tr>
<tr>
<td>BIOL 4905 [1.0]</td>
<td>Honours Workshop</td>
</tr>
<tr>
<td>or BIOL 4906 [1.0]</td>
<td>Interdisciplinary Research Project</td>
</tr>
<tr>
<td>or BIOL 4907 [1.0]</td>
<td>Honours Essay and Research Proposal</td>
</tr>
<tr>
<td>or BIOL 4908 [1.0]</td>
<td>Honours Research Thesis</td>
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2. 0.5 credit from:

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<tbody>
<tr>
<td>BIOL 2001 [0.5] Animals: Form and Function</td>
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<tr>
<td>BIOL 2002 [0.5] Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2303 [0.5] Microbiology</td>
</tr>
<tr>
<td>BIOL 3102 [0.5] Mycology</td>
</tr>
<tr>
<td>BIOL 3305 [0.5] Human and Comparative Physiology</td>
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<tr>
<td>BIOL 3306 [0.5] Human Anatomy and Physiology</td>
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3. 3.5 credits from:

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<tbody>
<tr>
<td>BIOC 2300 [0.5] Physical Biochemistry</td>
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<tr>
<td>BIOC 3008 [0.5] Bioinformatics</td>
</tr>
<tr>
<td>BIOC 3101 [0.5] General Biochemistry I</td>
</tr>
<tr>
<td>BIOC 3102 [0.5] General Biochemistry II</td>
</tr>
<tr>
<td>BIOC 3202 [0.5] Biophysical Techniques and Applications</td>
</tr>
<tr>
<td>BIOC 4008 [0.5] Computational Systems Biology</td>
</tr>
<tr>
<td>BIOC 4104 [0.5] Evolutionary Genetics</td>
</tr>
<tr>
<td>BIOC 4202 [0.5] Mutagenesis and DNA Repair</td>
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</table>

4. 1.0 credit in BIOL or BIOC or COMP or MATH or STAT at the 3000-level or higher

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BIOL 3901 [0.5] Research Proposal</td>
</tr>
<tr>
<td>BIOL 4901 [0.5] Directed Special Studies</td>
</tr>
<tr>
<td>or 4000-level BIOL</td>
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5. 0.5 credit from:

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<tbody>
<tr>
<td>COM 1005 [0.5] Introduction to Computer Science I</td>
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<tr>
<td>COM 1006 [0.5] Introduction to Computer Science II</td>
</tr>
<tr>
<td>COM 2401 [0.5] Introduction to Systems Programming</td>
</tr>
<tr>
<td>COM 2402 [0.5] Abstract Data Types and Algorithms</td>
</tr>
<tr>
<td>COM 2404 [0.5] Introduction to Software Engineering</td>
</tr>
<tr>
<td>COM 2406 [0.5] Fundamentals of Web Applications</td>
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6. 3.0 credits in

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<tbody>
<tr>
<td>CHEM 2203 [0.5] Organic Chemistry I</td>
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<tr>
<td>&amp; CHEM 2204 [0.5] Organic Chemistry II</td>
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</table>

7. 2.0 credits in

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<tbody>
<tr>
<td>BIOL 1103 [0.5] Foundations of Biology I</td>
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<tr>
<td>&amp; CHEM 1002 [0.5] General Chemistry II</td>
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8. 1.0 credit from

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<tbody>
<tr>
<td>PHYS 1007 [0.5] Elementary University Physics I</td>
</tr>
<tr>
<td>&amp; PHYS 1008 [0.5] Elementary University Physics II</td>
</tr>
<tr>
<td>PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td>&amp; PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion</td>
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</table>

9. 2.0 credits in

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<tbody>
<tr>
<td>MATH 1007 [0.5] Elementary Calculus I</td>
</tr>
<tr>
<td>MATH 1107 [0.5] Linear Algebra I</td>
</tr>
<tr>
<td>STAT 2507 [0.5] Introduction to Statistical Modeling I</td>
</tr>
<tr>
<td>STAT 2509 [0.5] Introduction to Statistical Modeling II</td>
</tr>
</tbody>
</table>

10. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

11. 0.5 credit in free electives

Total Credits 20.0

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**Biology**

**B.Sc. Honours (20.0 credits)**

A. Credits included in the Major CGPA (11.5 credits)

<table>
<thead>
<tr>
<th>1. 2.5 credits in:</th>
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<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
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<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 1105 [0.5]</td>
<td>Biological Methods, Analysis and Interpretation</td>
</tr>
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</table>

2. 2.5 credits from:

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<tbody>
<tr>
<td>BIOL 2001 [0.5] Animals: Form and Function</td>
</tr>
<tr>
<td>BIOL 2002 [0.5] Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2104 [0.5] Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2200 [0.5] Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOL 2303 [0.5] Microbiology</td>
</tr>
<tr>
<td>BIOL 2600 [0.5] Ecology</td>
</tr>
</tbody>
</table>

3. 0.5 credit from:

<table>
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</thead>
<tbody>
<tr>
<td>BIOL 3201 [0.5] Cell Biology</td>
</tr>
<tr>
<td>BIOL 3205 [0.5] Plant Biochemistry and Physiology</td>
</tr>
<tr>
<td>BIOL 3303 [0.5] Experimental Microbiology</td>
</tr>
<tr>
<td>BIOL 3305 [0.5] Human and Comparative Physiology</td>
</tr>
</tbody>
</table>

4. 1.0 credit in BIOL at the 2000-level or higher

<table>
<thead>
<tr>
<th>1.0</th>
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<tbody>
<tr>
<td>BIOL 3901 [0.5] Research Proposal</td>
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<tr>
<td>BIOL 4901 [0.5] Directed Special Studies</td>
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<td>or 4000-level BIOL</td>
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</tbody>
</table>

5. 3.5 credits in BIOL or BIOL at the 3000-level or higher

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BIOL 3901 [0.5] Research Proposal</td>
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<tr>
<td>BIOL 4901 [0.5] Directed Special Studies</td>
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6. 0.5 credit from:

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<tr>
<td>BIOL 3901 [0.5] Research Proposal</td>
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<tr>
<td>BIOL 4901 [0.5] Directed Special Studies</td>
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<tr>
<td>or 4000-level BIOL</td>
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7. 1.0 credit in Advanced Science Faculty Electives

8. Credits not included in the Major CGPA (8.5 credits)

9. 1.0 credit in

<table>
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<tbody>
<tr>
<td>CHEM 1001 [0.5] General Chemistry I</td>
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<tr>
<td>&amp; CHEM 1002 [0.5] General Chemistry II</td>
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10. 0.5 credit in:

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<tbody>
<tr>
<td>MATH 1007 [0.5] Elementary Calculus I</td>
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</tbody>
</table>

11. 1.0 credit from:

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<tbody>
<tr>
<td>PHYS 1007 [0.5] Elementary University Physics I</td>
</tr>
<tr>
<td>&amp; PHYS 1008 [0.5] Elementary University Physics II</td>
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</table>

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### B.Sc. Honours (20.0 credits)

Natural History, and Conservation Science

#### B. Credits Not Included in the Major CGPA (8.5 credits)

1. **1.0 credit from:**
   - BIOL 2303 [0.5] Microbiology
   - BIOL 3004 [0.5] Insect Diversity
   - BIOL 3102 [0.5] Mycology

2. **1.0 credit in Science Faculty electives**
   - 1.0

3. **2.0 credits in Science Continuation (not in BIOL)**
   - 2.0

4. **2.5 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)**
   - 2.0

5. **1.0 credit in free electives.**
   - 1.0

**Total Credits**
- 20.0

---

**Biology with Concentration in Biodiversity, Natural History, and Conservation Science B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (11.5 credits)**

1. **2.5 credits in:**
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation
   - BIOL 4905 [1.0] Honours Workshop
   - BIOL 4907 [0.5] Honours Essay and Research Proposal
   - BIOL 4908 [1.0] Honours Research Thesis

2. **2.5 credits in:**
   - BIOL 2001 [0.5] Animals: Form and Function
   - BIOL 2002 [0.5] Plants: Form and Function
   - BIOL 2104 [0.5] Introductory Genetics
   - BIOL 2200 [0.5] Cellular Biochemistry
   - BIOL 2600 [0.5] Ecology

3. **0.5 credit from:**
   - BIOL 3021 [0.5] Cell Biology
   - BIOL 3205 [0.5] Plant Biochemistry and Physiology
   - BIOL 3303 [0.5] Experimental Microbiology
   - BIOL 3305 [0.5] Human and Comparative Physiology
   - BIOL 4207 [0.5] Advanced Embryology & Developmental Biology

4. **3.0 credits in:**
   - BIOL 2903 [0.5] Natural History and Ecology of Ontario
   - BIOL 3602 [0.5] Conservation Biology
   - BIOL 3604 [0.5] Statistics for Biologists
   - BIOL 3608 [0.5] Principles of Biogeography
   - BIOL 3609 [0.5] Evolutionary Concepts
   - BIOL 3711 [0.5] Evolutionary Ecology
   - BIOL 4104 [0.5] Evolutionary Genetics
   - BIOL 3202 [0.5] Principles of Developmental Biology
   - BIOL 3303 [0.5] Experimental Microbiology
   - BIOL 3601 [0.5] Ecosystems and Environmental Change
   - BIOL 3605 [0.5] Field Course I
   - BIOL 3801 [0.5] Plants and Herbivores
   - BIOL 3802 [0.5] Animal Behaviour

5. **1.0 credit from:**
   - BIOL 4301 [0.5] Population Genetics
   - BIOL 4203 [0.5] Evolution of Sex
   - BIOL 4207 [0.5] Advanced Embryology & Developmental Biology
   - BIOL 4318 [0.5] Adaptations to Extreme Environments
   - BIOL 4500 [0.5] The Biology of Birds
   - BIOL 4501 [0.5] The Taxonomy of Birds
   - BIOL 4502 [0.5] Herpetology
   - BIOL 4503 [0.5] Fish Ecology, Conservation and Management
   - BIOL 4504 [0.5] Ecology of Freshwater Invertebrates
   - BIOL 4505 [0.5] Coral Reefs
   - BIOL 4506 [0.5] Cactus Biology
   - BIOL 4602 [0.5] Evolutionary Applications across Disciplines: From Medicine to Conservation
   - BIOL 4603 [0.5] Insect Evolution and Biology
   - BIOL 4604 [0.5] Landscape Ecology

6. **1.0 credit from:**
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II

7. **0.5 credit in:**
   - CHEM 1002 [0.5]
     - General Chemistry II
   - MAPS 1001 [0.5] Directed Special Studies

8. **1.0 credit in:**
   - MATH 1007 [0.5] Elementary Calculus I

9. **0.5 credit in:**
   - MATH 1107 [0.5] Linear Algebra I

10. **1.0 credit from:**
    - COMS 1005 [0.5] Introduction to Computer Science I
    - COMS 1006 [0.5] Introduction to Computer Science II
    - MATH 1007 [0.5] Linear Algebra I
    - PHYS 1007 [0.5] Elementary University Physics I
    - PHYS 1008 [0.5] Elementary University Physics II
    - PHYB 1003 [0.5] Introductory Mechanics and Thermodynamics
    - PHYB 1004 [0.5] Introductory Electromagnetism and Wave Motion

11. **1.0 credit in Science Faculty electives**
    - 1.0

12. **2.0 credits in Science Continuation courses (not in BIOL)**
    - 2.0

Students are encouraged to consider the following courses as options:

- ERTH 2312 [0.5] Paleontology
- ENSC 3106 [0.5] Aquatic Science and Management
13. **2.0 credits in** Approved Courses outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

Students are encouraged to consider the following courses as options:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ENST 2000 [0.5]</td>
<td>Environmental Justice</td>
</tr>
<tr>
<td>ENST 2001 [0.5]</td>
<td>Sustainable Futures: Environmental Challenges and Solutions</td>
</tr>
<tr>
<td>ENST 3022 [0.5]</td>
<td>Environmental and Natural Resources</td>
</tr>
<tr>
<td>INDG 2015 [0.5]</td>
<td>Indigenous Ecological Ways of Knowing</td>
</tr>
</tbody>
</table>

14. **1.0 credit in** free electives

**Total Credits:** 20.0

### Biology with Concentration in Ecology, Evolution and Behaviour

#### B.Sc. Honours (20.0 credits)

**A. Credits Included in the Major CGPA (11.5 credits)**

1. **2.5 credits in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 1105 [0.5]</td>
<td>Biological Methods, Analysis and Interpretation</td>
</tr>
<tr>
<td>BIOL 4905 [1.0]</td>
<td>Honours Workshop</td>
</tr>
<tr>
<td>or BIOL 4907 [1.0]</td>
<td>Honours Essay and Research Proposal</td>
</tr>
<tr>
<td>or BIOL 4908 [1.0]</td>
<td>Honours Research Thesis</td>
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2. **2.5 credits in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
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3. **0.5 credit from:**

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<tr>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL 3201 [0.5]</td>
<td>Cell Biology</td>
</tr>
<tr>
<td>BIOL 3205 [0.5]</td>
<td>Plant Biochemistry and Physiology</td>
</tr>
<tr>
<td>BIOL 3303 [0.5]</td>
<td>Experimental Microbiology</td>
</tr>
<tr>
<td>BIOL 3305 [0.5]</td>
<td>Human and Comparative Physiology</td>
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4. **1.0 credit from:**

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<tbody>
<tr>
<td>BIOL 3609 [0.5]</td>
<td>Evolutionary Concepts</td>
</tr>
<tr>
<td>BIOL 3611 [0.5]</td>
<td>Evolutionary Ecology</td>
</tr>
<tr>
<td>BIOL 3802 [0.5]</td>
<td>Animal Behaviour</td>
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5. **2.0 credits from:**

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<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>BIOL 3004 [0.5]</td>
<td>Insect Diversity</td>
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<td>BIOL 3104 [0.5]</td>
<td>Molecular Genetics</td>
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<tr>
<td>BIOL 3111 [0.5]</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
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<tr>
<td>BIOL 3112 [0.5]</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td>BIOL 3202 [0.5]</td>
<td>Principles of Developmental Biology</td>
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<tr>
<td>BIOL 3601 [0.5]</td>
<td>Ecosystems and Environmental Change</td>
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<td>BIOL 3602 [0.5]</td>
<td>Conservation Biology</td>
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<td>BIOL 3604 [0.5]</td>
<td>Statistics for Biologists</td>
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<td>BIOL 3605 [0.5]</td>
<td>Field Course I</td>
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<td>BIOL 3609 [0.5]</td>
<td>Evolutionary Concepts</td>
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<td>BIOL 3608 [0.5]</td>
<td>Principles of Biogeography</td>
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<td>BIOL 3611 [0.5]</td>
<td>Evolutionary Ecology</td>
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<td>BIOL 3612 [0.5]</td>
<td>Computational Methods in Ecology and Evolution</td>
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<td>BIOL 3801 [0.5]</td>
<td>Plants and Herbivores</td>
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<td>BIOL 3802 [0.5]</td>
<td>Animal Behaviour</td>
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<td>BIOL 3804 [0.5]</td>
<td>Social Evolution</td>
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<td>BIOL 4102 [0.5]</td>
<td>Molecular Ecology</td>
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<td>BIOL 4103 [0.5]</td>
<td>Population Genetics</td>
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<td>BIOL 4104 [0.5]</td>
<td>Evolutionary Genetics</td>
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<tr>
<td>BIOL 4203 [0.5]</td>
<td>Evolution of Sex</td>
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<tr>
<td>BIOL 4317 [0.5]</td>
<td>Neuroethology: The Neural Basis of Animal Behaviour</td>
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<td>BIOL 4318 [0.5]</td>
<td>Adaptations to Extreme Environments</td>
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<tr>
<td>BIOL 4500 [0.5]</td>
<td>The Biology of Birds</td>
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<tr>
<td>BIOL 4501 [0.5]</td>
<td>The Taxonomy of Birds</td>
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<td>Herpetology</td>
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<td>BIOL 4503 [0.5]</td>
<td>Fish Ecology, Conservation and Management</td>
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<td>BIOL 4504 [0.5]</td>
<td>Ecology of Freshwater Invertebrates</td>
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<td>BIOL 4505 [0.5]</td>
<td>Coral Reefs</td>
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<td>BIOL 4506 [0.5]</td>
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<td>BIOL 4507 [0.5]</td>
<td>Ecological Parasitology</td>
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<tr>
<td>BIOL 4602 [0.5]</td>
<td>Evolutionary Applications across Disciplines: From Medicine to Conservation</td>
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<td>BIOL 4604 [0.5]</td>
<td>Landscape Ecology</td>
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<td>BIOL 4802 [0.5]</td>
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<td>or BIOL 4901 [0.5]</td>
<td>Directed Special Studies</td>
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<td>or 4000-level BIOL</td>
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#### B. Credits Not Included in the Major CGPA (8.5 credits)

9. **1.0 credit in:**

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<tr>
<td>CHEM 1001 [0.5]</td>
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<td>General Chemistry II</td>
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10. **0.5 credit in:**

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<th>Course Code</th>
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<tbody>
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11. **1.0 credit from:**

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<th>Course Title</th>
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<tr>
<td>COMP 1005 [0.5]</td>
<td>Introduction to Computer Science I</td>
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<tr>
<td>COMP 1006 [0.5]</td>
<td>Introduction to Computer Science II</td>
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<tr>
<td>MATH 1107 [0.5]</td>
<td>Linear Algebra I</td>
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<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
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<td>or PHYS 1003 [0.5]</td>
<td>Introductory Mechanics and Thermodynamics</td>
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<tr>
<td>PHYS 1008 [0.5]</td>
<td>Elementary University Physics II</td>
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<tr>
<td>or PHYS 1004 [0.5]</td>
<td>Introductory Electromagnetism and Wave Motion</td>
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<tr>
<td>STAT 2507 [0.5]</td>
<td>Introduction to Statistical Modeling I</td>
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12. **1.0 credit in** Science Faculty Electives

13. **2.0 credits in** Science Continuation courses (not in BIOL)

14. **2.0 credits in** Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)
### B.Sc. Honours (20.0 credits)

#### Biology with Concentration in Health Science

<table>
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<th>A. Credits included in the Major CGPA (11.5 credits)</th>
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<td>BIOL 1104 [0.5] Foundations of Biology II</td>
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<tr>
<td>BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation</td>
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<td>2. 2.5 credits in:</td>
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<tr>
<td>BIOL 2001 [0.5] Animals: Form and Function</td>
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<td>BIOL 2104 [0.5] Introductory Genetics</td>
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<td>BIOL 2200 [0.5] Cellular Biochemistry</td>
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<td>BIOL 2303 [0.5] Microbiology</td>
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<td>BIOL 3305 [0.5] Human and Comparative Physiology</td>
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<td>BIOL 3307 [0.5] Advanced Human Anatomy and Physiology</td>
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<td>BIOL 3008 [0.5] Bioinformatics</td>
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<td>BIOL 3104 [0.5] Molecular Genetics</td>
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<td>BIOL 3201 [0.5] Cell Biology</td>
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<td>BIOL 3202 [0.5] Principles of Developmental Biology</td>
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<td>BIOL 3303 [0.5] Experimental Microbiology</td>
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<td>BIOL 3501 [0.5] Biomechanics</td>
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<td>BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering</td>
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<td>BIOL 4206 [0.5] Human Genetics</td>
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<td>BIOL 4207 [0.5] Advanced Embryology &amp; Developmental Biology</td>
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<tr>
<td>BIOL 4303 [0.5] Advances in Microbiology</td>
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<tr>
<td>BIOL 4318 [0.5] Adaptations to Extreme Environments</td>
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<td>6. 1.0 credit from:</td>
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<td>BIOL 4009 [0.5] Biochemistry of Disease</td>
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<td>BIOL 4708 [0.5] Principles of Toxicology</td>
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<td>BIOL 4106 [0.5] Advances in Molecular Biology</td>
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<td>BIOL 4200 [0.5] Immunology</td>
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<td>BIOL 4202 [0.5] Mutagenesis and DNA Repair</td>
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<td>BIOL 4306 [0.5] Animal Neurophysiology</td>
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<td>BIOL 4309 [0.5] Studies in Human Performance</td>
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<td>BIOL 4319 [0.5] Studies in Exercise Physiology</td>
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<td>7. 1.0 credit from BIOL or BIOC at the 3000-level or higher</td>
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<tr>
<td>8. 0.5 credit from:</td>
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<tr>
<td>BIOL 4901 [0.5] Directed Special Studies</td>
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<tr>
<td>or 4000-level BIOL</td>
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<tr>
<td>NEUR 2201 [0.5] Cellular and Molecular Neuroscience</td>
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<td>NEUR 2202 [0.5] Neurodevelopment and Plasticity</td>
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<td>NEUR 3204 [0.5] Neuropharmacology</td>
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<td>PSYC 2301 [0.5] Introduction to Health Psychology</td>
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<td>10. 0.5 credit from:</td>
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<tr>
<td>PHIL 2408 [0.5] Bioethics</td>
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<tr>
<td>GEG 3206 [0.5] Health, Environment, and Society</td>
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<tr>
<td>ANTH 3310 [0.5] Studies in Medical Anthropology</td>
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<tr>
<td>SOCI 3050 [0.5] Studies in the Sociology of Health</td>
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<tr>
<td>SOCI 3056 [0.5] Women and Health</td>
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<tr>
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<tr>
<td>CHEM 1001 [0.5] General Chemistry I</td>
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<tr>
<td>&amp; CHEM 1002 [0.5] General Chemistry II</td>
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</tr>
<tr>
<td>CHEM 2203 [0.5] Organic Chemistry I</td>
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<tr>
<td>&amp; CHEM 2204 [0.5] Organic Chemistry II</td>
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<tr>
<td>CHEM 2207 [0.5] Introduction to Organic Chemistry I</td>
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<td>&amp; CHEM 2208 [0.5] Introduction to Organic Chemistry II</td>
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<tr>
<td>COMP 1005 [0.5] Introduction to Computer Science I</td>
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<tr>
<td>COMP 1006 [0.5] Introduction to Computer Science II</td>
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<td>MATH 1107 [0.5] Linear Algebra I</td>
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<tr>
<td>PHYS 1007 [0.5] Elementary University Physics I</td>
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<tr>
<td>or PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics</td>
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<tr>
<td>PHYS 1008 [0.5] Elementary University Physics II</td>
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<tr>
<td>or PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion</td>
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<tr>
<td>STAT 2507 [0.5] Introduction to Statistical Modeling I</td>
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<td>15. 1.0 credit in Science Faculty Electives</td>
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<td>16. 1.0 credit in Science Continuation courses (not in BIOL)</td>
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<td>17. 1.0 credit in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)</td>
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<td>18. 1.0 credit in free electives.</td>
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</table>

#### Total Credits

| 20.0 |

### Biology with Concentration in Molecular and Cellular Biology

#### B.Sc. Honours (20.0 credits)

<table>
<thead>
<tr>
<th>A. Credits included in the Major CGPA (11.5 credits)</th>
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<tbody>
<tr>
<td>1. 2.5 credits in:</td>
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<tr>
<td>BIOL 1103 [0.5] Foundations of Biology I</td>
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<tr>
<td>BIOL 1104 [0.5] Foundations of Biology II</td>
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<td>BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation</td>
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<td>2. 2.5 credits in:</td>
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<tr>
<td>BIOL 3901 [0.5] Research Proposal</td>
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<tr>
<td>BIOL 4901 [0.5] Directed Special Studies</td>
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<tr>
<td>or 4000-level BIOL</td>
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<p>| Total Credits | 20.0 |</p>
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<tr>
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<td>BIOL 4901</td>
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### A. Credits Included in the Major CGPA (11.5 credits)

1. **2.0 credits in:**
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation

2. **2.0 credits in:**
   - BIOL 2001 [0.5] Animals: Form and Function
   - BIOL 2002 [0.5] Plants: Form and Function
   - BIOL 2104 [0.5] Introductory Genetics
   - BIOL 2200 [0.5] Cellular Biochemistry

3. **1.5 credits in:**
   - BIOL 3205 [0.5] Plant Biochemistry and Physiology
   - BIOL 3305 [0.5] Human and Comparative Physiology
   - BIOL 3307 [0.5] Advanced Human Anatomy and Physiology

4. **1.0 credit in:**
   - BIOL 4305 [0.5] General Biochemistry I
   - BIOL 4306 [0.5] General Biochemistry II

5. **2.0 credits from:**
   - BIOL 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds
   - BIOL 3112 [0.5] Vertebrate Evolution: Fish and Amphibians
   - BIOL 3201 [0.5] Cell Biology
   - BIOL 3202 [0.5] Principles of Developmental Biology
   - BIOL 3501 [0.5] Biomechanics
   - BIOL 3802 [0.5] Animal Behaviour
   - BIOL 4008 [0.5] Molecular Plant Development
   - BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering
   - BIOL 4203 [0.5] Advanced Metabolism
   - BIOL 4209 [0.5] Advanced Animal Physiology
   - BIOL 4306 [0.5] Animal Neurophysiology
   - BIOL 4309 [0.5] Studies in Human Performance
   - BIOL 4317 [0.5] Neuroethology: The Neural Basis of Animal Behaviour
   - BIOL 4318 [0.5] Adaptations to Extreme Environments
   - BIOL 4319 [0.5] Studies in Exercise Physiology

6. **1.5 credit in BIOL at the 2000-level or higher**

7. **0.5 credit in BIOL or BIOL at the 3000-level or higher**

8. **0.5 credit from:**
   - BIOL 3901 [0.5] Research Proposal

### Total Credits

- **Biology with Concentration in Physiology B.Sc. Honours (20.0 credits)**
  - **A. Credits Included in the Major CGPA (11.5 credits)**
  - **B. Credits Not Included in the Major CGPA (8.5 credits)**
  - **Total Credits: 20.0**
B.Sc. Major (20.0 credits)

A. Credits included in the Major CGPA (9.5 credits)
1. 1.5 credit in:
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation
2. 2.5 credits from:
   - BIOL 2001 [0.5] Animals: Form and Function
   - BIOL 2002 [0.5] Plants: Form and Function
   - BIOL 2104 [0.5] Introductory Genetics
   - BIOL 2107 [0.5] Fundamentals of Genetics
   - BIOL 2200 [0.5] Cellular Biochemistry
   - BIOL 2201 [0.5] Cell Biology and Biochemistry
   - BIOL 2303 [0.5] Microbiology
   - BIOL 2600 [0.5] Ecology
3. 0.5 credit from:
   - BIOL 3205 [0.5] Plant Biochemistry and Physiology
   - BIOL 3306 [0.5] Human Anatomy and Physiology
4. 3.0 credits in BIOL at the 3000-level or higher
5. 2.0 credits in Advanced Science Faculty electives
6. 1.0 credit from:
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II

B. Credits not included in the Major CGPA (8.5 credits)
7. 0.5 credit in:
   - MATH 1007 [0.5] Elementary Calculus I
8. 1.0 credit from:
   - MATH 1107 [0.5] Linear Algebra I
   - COMP 1005 [0.5] Introduction to Computer Science I
   - COMP 1006 [0.5] Introduction to Computer Science II
   - PHYS 1007 [0.5] Elementary University Physics I
   - PHYS 1008 [0.5] Elementary University Physics II
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
   - STAT 2507 [0.5] Introduction to Statistical Modeling I
9. 1.0 credit in Science Faculty Electives
10. 2.0 credits in Advanced Science Faculty Electives
11. 2.0 credits in Science Continuation courses (not in BIOL)
12. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)
13. 1.0 credit in free electives

Total Credits 20.0

Biology

B.Sc. (15.0 credits)

Note: some advanced Biology courses with laboratory components will not be available to students enrolling in the B.Sc. program.

A. Credits included in the Major CGPA (6.5 credits)
1. 1.5 credit in:
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation
2. 2.0 credits from:
   - BIOL 2001 [0.5] Animals: Form and Function
   - BIOL 2002 [0.5] Plants: Form and Function
   - BIOL 2107 [0.5] Fundamentals of Genetics
   - BIOL 2201 [0.5] Cell Biology and Biochemistry
   - BIOL 2303 [0.5] Microbiology
   - BIOL 2600 [0.5] Ecology
3. 0.5 credit in:
   - BIOL 3306 [0.5] Human Anatomy and Physiology
4. 2.5 credits from BIOL at the 2000-level and 3000-level or higher
5. 1.0 credit from:
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - CHEM 1005 [0.5] General Chemistry III
   - CHEM 1006 [0.5] General Chemistry III
   - CHEM 1007 [0.5] Elementary Chemistry I
   - CHEM 1008 [0.5] Elementary Chemistry II
   - CHEM 1009 [0.5] Elementary Chemistry II (See Note 2, below)
6. 0.5 credit in:
   - MATH 1007 [0.5] Elementary Calculus I
7. 1.0 credit from:
   - COMP 1005 [0.5] Introduction to Computer Science I

Total Credits 15.0
COMP 1006 [0.5] Introduction to Computer Science II  
MATH 1107 [0.5] Linear Algebra I  
PHYS 1007 [0.5] Elementary University Physics I  
or PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics  

PHYS 1008 [0.5] Elementary University Physics II  
or PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion  

STAT 2507 [0.5] Introduction to Statistical Modeling I  

8. 2.0 credits in Science Continuation (not in BIOL)  2.0  
9. 1.0 credit in Science Faculty Electives  1.0  
10. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)  2.0  
11. 1.0 credit in free electives.  1.0  

Total Credits 15.0

Biology and Biotechnology
B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13 credits)

1. 6.5 credits in:  6.5  
   BIOL 1103 [0.5] Foundations of Biology I  
   BIOL 1104 [0.5] Foundations of Biology II  
   BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation  
   BIOL 2001 [0.5] Animals: Form and Function  
   BIOL 2002 [0.5] Plants: Form and Function  
   BIOL 2104 [0.5] Introductory Genetics  
   BIOL 2200 [0.5] Cellular Biochemistry  
   BIOL 2301 [0.5] Biotechnology I  
   BIOL 2303 [0.5] Microbiology  
   BIOL 3104 [0.5] Molecular Genetics  
   BIOL 3201 [0.5] Cell Biology  
   BIOL 3301 [0.5] Biotechnology II  
   BIOL 4301 [0.5] Current Topics in Biotechnology  

2. 1.5 credit in:  1.5  
   BUSI 2800 [0.5] Entrepreneurship  
   BIOC 3101 [0.5] General Biochemistry I  
   BIOC 3102 [0.5] General Biochemistry II  

3. 4.0 credits from:  4.0  
   BIOL 2300 [0.5] Physical Biochemistry  
or CHEM 2103 [0.5] Physical Chemistry I  
   BIOC 3008 [0.5] Bioinformatics  
   BIOC 3103 [0.5] Practical Biochemistry I  
   BIOC 3104 [0.5] Practical Biochemistry II  
   BIOC 3202 [0.5] Biophysical Techniques and Applications  
   BIOL 3004 [0.5] Insect Diversity  
   BIOL 3102 [0.5] Mycology  
   BIOL 3205 [0.5] Plant Biochemistry and Physiology  
   BIOL 3303 [0.5] Experimental Microbiology  
   BIOL 3305 [0.5] Human and Comparative Physiology  
   BIOL 3501 [0.5] Biomechanics  
   BIOL 3901 [0.5] Research Proposal  
   CHEM 3700 [0.5] Industrial Applications of Chemistry  
   CHEM 3800 [0.5] The Chemistry of Environmental Pollutants  
   CHEM 3800 [0.5] The Chemistry of Environmental Pollutants  

FOOD 3005 [0.5] Food Microbiology  
BIOC 4001 [0.5] Methods in Biochemistry  
BIOC 4004 [0.5] Industrial Biochemistry  
BIOC 4005 [0.5] Biochemical Regulation  
BIOC 4007 [0.5] Membrane Biochemistry  
BIOC 4008 [0.5] Computational Systems Biology  
BIOC 4009 [0.5] Biochemistry of Disease  
BIOC 4203 [0.5] Advanced Metabolism  
BIOC 4204 [0.5] Protein Biotechnology  
BIOC 4708 [0.5] Principles of Toxicology  
BIOL 4106 [0.5] Advances in Molecular Biology  
BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics  
BIOL 4200 [0.5] Immunology  
BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering  
BIOL 4202 [0.5] Mutagenesis and DNA Repair  
BIOL 4206 [0.5] Human Genetics  
BIOL 4304 [0.5] Forensic Biology  
BIOL 4901 [0.5] Directed Special Studies  
TSES 4001 [0.5] Technology and Society: Risk  
TSES 4002 [0.5] Technology and Society: Forecasting  

4. 1.0 credit in:  1.0  
   BIOL 4905 [1.0] Honours Workshop  
or BIOL 4907 [1.0] Honours Essay and Research Proposal  
or BIOL 4908 [1.0] Honours Research Thesis  

B. Credits Not Included in the Major CGPA (7.0 credits)

5. 2.0 credits in:  2.0  
   CHEM 1001 [0.5] General Chemistry I  
   CHEM 1002 [0.5] General Chemistry II  
   CHEM 2203 [0.5] Organic Chemistry I  
   CHEM 2204 [0.5] Organic Chemistry II (See Note, below)  

6. 0.5 credit in:  0.5  
   MATH 1007 [0.5] Elementary Calculus I  

7. 1.5 credits from:  1.5  
   COMP 1005 [0.5] Introduction to Computer Science I  
   COMP 1006 [0.5] Introduction to Computer Science II  
   MATH 1107 [0.5] Linear Algebra I  
   PHYS 1007 [0.5] Elementary University Physics I  
or PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics  

PHYS 1008 [0.5] Elementary University Physics II  
or PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion  

STAT 2507 [0.5] Introduction to Statistical Modeling I  

8. 2.0 credits in:  2.0  
   Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)  

9. 1.0 credit in:  1.0  
   Free electives.  

Total Credits 20.0

Biology and Earth Sciences
B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.5 credits in:  1.5  
   BIOL 1103 [0.5] Foundations of Biology I
B.Sc. Combined Honours (20.0 credits)

1. **1.0 credit from:**
   - ERTH 1006 [0.5] Exploring Planet Earth
   - ERTH 1009 [0.5] The Earth System Through Time

2. **0.5 credit from:**
   - BIOL 2600 [0.5] Ecology
   - BIOL 3605 [0.5] Field Course I

3. **3.5 credits in BIOL or BIOC, with at least 1.0 credit at the 3000-level and 1.0 credit at the 4000-level**

4. **3.0 credits in:**
   - ERTH 2102 [0.5] Mineralogy to Petrology
   - ERTH 2314 [0.5] Sedimentation and Stratigraphy
   - ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds
   - ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians
   - ERTH 3113 [0.5] Geology of Human Origins

5. **0.5 credit from:**
   - ERTH 3203 [0.5] Paleontology
   - ERTH 3206 [0.5] Sedimentary Depositional Systems

6. **1.0 credit in ERTH at the 4000-level**

7. **1.0 credit from:**
   - BIOL 4905 [1.0] Honours Workshop
   - BIOL 4907 [1.0] Honours Essay and Research Proposal
   - BIOL 4908 [1.0] Honours Research Thesis
   - ERTH 4908 [1.0] Honours Thesis
   - ERTH 4909 [0.5] Research in Earth Sciences (and 0.5 credit in ERTH at the 4000-level)

8. **B. Credits Not Included in the Major CGPA (8.0 credits)**
   - **1.0 credit in:**
     - MATH 1007 [0.5] Elementary Calculus I
     - MATH 1107 [0.5] Linear Algebra I
   - **1.0 credit from:**
     - CHEM 1001 [0.5] General Chemistry I
     - CHEM 1002 [0.5] General Chemistry II
     - CHEM 1005 [0.5] Elementary Chemistry I
     - CHEM 1008 [0.5] Elementary Chemistry II
   - **1.0 credit in:**
     - PHYS 1007 [0.5] Elementary University Physics I & PHYS 1008 [0.5] Elementary University Physics II
   - **0.5 credit in:**
     - STAT 2507 [0.5] Introduction to Statistical Modeling I
   - **0.5 credit in:**
     - COMP 1005 [0.5] Introduction to Computer Science I
   - **1.0 credit in Science Continuation courses**
   - **2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)**
   - **1.0 credit in free electives**

**Total Credits**

Biology and Physics

**B.Sc. Combined Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (12.5 credits)**

1. **1.0 credit from:**

   **B. Credits Not Included in the Major CGPA (8.0 credits)**

9. **1.0 credit in:**
   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1107 [0.5] Linear Algebra I

10. **1.0 credit from:**
    - CHEM 1001 [0.5] General Chemistry I
    - CHEM 1002 [0.5] General Chemistry II
    - CHEM 1005 [0.5] Elementary Chemistry I
    - CHEM 1008 [0.5] Elementary Chemistry II

11. **1.0 credit in:**
    - PHYS 1007 [0.5] Elementary University Physics I & PHYS 1008 [0.5] Elementary University Physics II

12. **0.5 credit in:**
    - STAT 2507 [0.5] Introduction to Statistical Modeling I

13. **0.5 credit in:**
    - COMP 1005 [0.5] Introduction to Computer Science I

14. **1.0 credit in Science Continuation courses**

15. **2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)**

16. **1.0 credit in free electives**

**Total Credits**

16.0

**Biology and Physics**

164 The Academic Year (Graduate and Undergraduate Studies)
B.Sc. Combined Honours (20.0 credits)

Neuroscience and Biology

1. 3.0 credits in:
- NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease
- NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease
- NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience
- NEUR 2002 [0.5] Introduction to Statistics in Neuroscience
- NEUR 2201 [0.5] Cellular and Molecular Neuroscience
- NEUR 2202 [0.5] Neurodevelopment and Plasticity
- NEUR 3001 [0.5] Data Analysis in Neuroscience I
- NEUR 3002 [0.5] Data Analysis in Neuroscience II
- NEUR 3204 [0.5] Neuropharmacology
- NEUR 3206 [0.5] Sensory and Motor Neuroscience
- NEUR 3207 [0.5] Systems Neuroscience

2. 3.0 credits in:
- BIOL 1103 [0.5] Foundations of Biology I
- BIOL 1104 [0.5] Foundations of Biology II
- BIOL 2001 [0.5] Animals: Form and Function
- BIOL 2104 [0.5] Introductory Genetics
- BIOL 2200 [0.5] Cellular Biochemistry

3. 1.5 credits in BIOL or BIOC at the 3000 level or above

4. 1.0 credit from:
- NEUR 3301 [0.5] Genetics of Mental Health
- NEUR 3303 [0.5] The Neuroscience of Consciousness
- NEUR 3304 [0.5] Hormones and Behaviour
- NEUR 3401 [0.5] Environmental Toxins and Mental Health
- NEUR 3402 [0.5] Impact of Lifestyle and Social Interactions on Mental Health
- NEUR 3403 [0.5] Stress and Mental Health
- NEUR 3501 [0.5] Neurodegeneration and Aging
- NEUR 3502 [0.5] Neurodevelopmental Determinants of Mental Health
- NEUR 4301 [0.5] Neurobiology of Energy Homeostasis
- NEUR 4302 [0.5] Sex and the Brain
- NEUR 4303 [0.5] Indigenous Health & Mental Health
- NEUR 4305 [0.5] Immune-Brain Interactions
- NEUR 4306 [0.5] The Neural Basis of Addiction
- NEUR 4600 [0.5] Advanced Lab in Neuroanatomy

5. 2.0 credits from:
- BIOL 4007 [0.5] Membrane Biochemistry
- BIOL 2600 [0.5] Ecology
- BIOL 2301 [0.5] Biotechnology I
- BIOL 2303 [0.5] Microbiology
- BIOL 3307 [0.5] Advanced Human Anatomy and Physiology
- BIOL 3605 [0.5] Field Course I
- BIOL 3609 [0.5] Evolutionary Concepts
- BIOL 3802 [0.5] Animal Behaviour
- BIOL 3804 [0.5] Social Evolution
- BIOL 4306 [0.5] Animal Neurophysiology
- BIOL 4317 [0.5] Neuroethology: The Neural Basis of Animal Behaviour
- BIOL 4802 [0.5] Advanced Animal Behaviour
- CHEM 2204 [0.5] Organic Chemistry II

6. 0.5 credit from:
- NEUR 4200 [0.5] Seminar on Current Advances in Neuroscience
- NEUR 4202 [0.5] Seminar on Current Research in Neuroscience and Psychiatric Disease
- NEUR 4203 [0.5] Seminar on Current Research in Neuroscience and Clinical Neurology

7. 1.0 credit in neurophysiology, animal behaviour, neuropsychology or a related topic from:
- NEUR 4905 [1.0] Honours Workshop
- NEUR 4907 [1.0] Honours Essay and Research Proposal
- NEUR 4908 [1.0] Honours Research Thesis
- BIOL 4905 [1.0] Honours Workshop
- BIOL 4907 [1.0] Honours Essay and Research Proposal
- BIOL 4908 [1.0] Honours Research Thesis

B. Credits not included in the Major CGPA (5.5 credits)
8. 1.0 credit in:  
MATH 1007 [0.5] Elementary Calculus I  
MATH 1107 [0.5] Linear Algebra I  

9. 1.5 credits in:  
CHEM 1001 [0.5] General Chemistry I  
& CHEM 1002 [0.5] General Chemistry II  
CHEM 2203 [0.5] Organic Chemistry I  

10. 1.0 credit in:  
PHYS 1007 [0.5] Elementary University Physics I  
& PHYS 1008 [0.5] Elementary University Physics II  

11. 2.0 credits in approved courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)  

Total Credits 20.0

Biology

B.A. Honours (20.0 credits)

A. Credits included in the Major CGPA (8.0 credits)

1. 1.5 credit in:  
Biol 1103 [0.5] Foundations of Biology I  
Biol 1104 [0.5] Foundations of Biology II  
Biol 1105 [0.5] Biological Methods, Analysis and Interpretation  

2. 2.5 credits from:  
Biol 2001 [0.5] Animals: Form and Function  
Biol 2002 [0.5] Plants: Form and Function  
Biol 2104 [0.5] Introductory Genetics  
or Biol 2107 [0.5] Fundamentals of Genetics  
Biol 2200 [0.5] Cellular Biochemistry  
or Biol 2201 [0.5] Cell Biology and Biochemistry  
Biol 2303 [0.5] Microbiology  
Biol 2600 [0.5] Ecology  

3. 2.5 credits in BIOL  

4. 1.0 credit in Biol at the 3000-level or higher  

5. 1.0 credits in BIOL  

6. 1.0 credit from:  
Biol 4905 [1.0] Honours Workshop  
or Biol 4907 [1.0] Honours Essay and Research Proposal  
or Biol 4908 [1.0] Honours Research Thesis  

B. Credits not included in the Major CGPA (9.0 credits)

1. 1.5 credit:  

2. 2.0 credits from:  

3. 1.5 credits in BIOL at the 3000-level or higher  

4. 1.0 credit from:  

5. 1.0 credit in Science Faculty Electives, not in BIOL  

6. 4.0 credits in approved courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)  

7. 1.0 credit at the 2000-level or higher  

8. 2.0 credits in free electives.  

Total Credits 15.0

Biology

B.A. Combined Honours (20.0 credits)

A. Credits included in the Biology Major CGPA (7.0 credits)

1. 1.5 credit in:  
Biol 1103 [0.5] Foundations of Biology I  
Biol 1104 [0.5] Foundations of Biology II  
Biol 1105 [0.5] Biological Methods, Analysis and Interpretation  

2. 2.5 credits from:  

3. 1.0 credit in Science Faculty Electives at the 2000-level or higher, not in BIOL  

4. 1.0 credit in Science Faculty Electives not in BIOL  

5. 2.0 credits in approved courses at the 2000 level outside of the faculties of Science and Engineering and Design  

Note: some advanced Biology courses with laboratory components will not be available to students enrolling in the B.A. program.
Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student’s responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term.

Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.
Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Biology, Bioinformatics: Co-op Admission and Continuation Requirements

• Maintain full-time status in each study term (2.0 credits);
• Be eligible to work in Canada (for off-campus work)
• Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biology and Bioinformatics students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Course: BIOL 3999
Work/Study Pattern:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
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<td>Winter</td>
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<tr>
<td>Summer</td>
<td>**O/W</td>
<td>Summer</td>
<td>**W</td>
<td>Summer</td>
</tr>
</tbody>
</table>

Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Biochemistry</th>
<th>Biology</th>
<th>Chemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 2200 [0.5]</td>
<td>BIOL 1103 [0.5]</td>
<td>CHEM 1001 [0.5]</td>
</tr>
<tr>
<td>Cellular Biochemistry</td>
<td>Foundations of Biology I</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>BIOC 4001 [0.5]</td>
<td>BIOL 1104 [0.5]</td>
<td>CHEM 1002 [0.5]</td>
</tr>
<tr>
<td>Methods in Biochemistry</td>
<td>Foundations of Biology II</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>BIOC 4201 [0.5]</td>
<td>BIOL 2001 [0.5]</td>
<td>CHEM 1005 [0.5]</td>
</tr>
<tr>
<td>Advanced Cell Culture and Tissue Engineering</td>
<td>Animals: Form and Function</td>
<td>Elementary Chemistry I</td>
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<td>BIOL 2002 [0.5]</td>
<td>CHEM 1006 [0.5]</td>
</tr>
<tr>
<td></td>
<td>Plants: Form and Function</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td></td>
<td>BIOL 2104 [0.5]</td>
<td>CHEM 2103 [0.5]</td>
</tr>
<tr>
<td></td>
<td>Introductory Genetics</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td></td>
<td>BIOL 2200 [0.5]</td>
<td>CHEM 2203 [0.5]</td>
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<tr>
<td></td>
<td>Cellular Biochemistry</td>
<td>Organic Chemistry I</td>
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<tr>
<td></td>
<td>BIOL 2600 [0.5]</td>
<td>CHEM 2204 [0.5]</td>
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<td>Ecology</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>Course Categories for B.Sc. Programs</td>
<td>Courses</td>
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</tr>
</tbody>
</table>
| Science Geography Courses          | GEOG 1010 [0.5] Global Environmental Systems  
|                                    | GEOG 2006 [0.5] Introduction to Quantitative Research  
|                                    | GEOG 2013 [0.5] Weather and Water  
|                                    | GEOG 2014 [0.5] The Earth's Surface  
|                                    | GEOG 3003 [0.5] Quantitative Geography  
|                                    | GEOG 3010 [0.5] Field Methods in Physical Geography  
|                                    | GEOG 3102 [0.5] Geomorphology  
|                                    | GEOG 3103 [0.5] Watershed Hydrology  
|                                    | GEOG 3104 [0.5] Principles of Biogeography  
|                                    | GEOG 3105 [0.5] Climate and Atmospheric Change  
|                                    | GEOG 3106 [0.5] Aquatic Science and Management  
|                                    | GEOG 3108 [0.5] Soil Properties  
|                                    | GEOG 4000 [0.5] Field Studies  
|                                    | GEOG 4005 [0.5] Directed Studies in Geography  
|                                    | GEOG 4013 [0.5] Cold Region Hydrology  
|                                    | GEOG 4017 [0.5] Global Biogeochemical Cycles  
|                                    | GEOG 4101 [0.5] Two Million Years of Environmental Change  
|                                    | GEOG 4103 [0.5] Water Resources Engineering  
|                                    | GEOG 4104 [0.5] Microclimatology  
|                                    | GEOG 4108 [0.5] Permafrost  
| Science Psychology Courses         | PSYC 2001 [0.5] Introduction to Research Methods in Psychology  
|                                    | PSYC 2002 [0.5] Introduction to Statistics in Psychology  
|                                    | PSYC 2700 [0.5] Introduction to Cognitive Psychology  
|                                    | PSYC 3000 [1.0] Design and Analysis in Psychological Research  
|                                    | PSYC 3506 [0.5] Cognitive Development  
|                                    | PSYC 3700 [1.0] Cognition (Honours Seminar)  
|                                    | PSYC 3702 [0.5] Perception  
|                                    | PSYC 2307 [0.5] Human Neuropsychology I  
|                                    | PSYC 3307 [0.5] Human Neuropsychology II  
| Science Continuation Courses       | CHEM (Chemistry)  
|                                    | COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.  
|                                    | ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.  
|                                    | ENSC (Environmental Science)  
|                                    | FOOD (Food Science and Nutrition)  
|                                    | GEOM (Geomatics)  
|                                    | HLTH (Health Sciences)  
|                                    | ISAP (Interdisciplinary Science Practice)  
|                                    | MATH (Mathematics)  
|                                    | NEUR (Neuroscience)  
|                                    | PHYS (Physics), except PHYS 2903  
|                                    | Science Geography Courses (see list above)  
|                                    | Science Psychology Courses (see list above)  
|                                    | STAT (Statistics)  

Earth Sciences  
ERTH 1006 [0.5] Exploring Planet Earth  
ERTH 1009 [0.5] The Earth System Through Time  
ERTH 2102 [0.5] Mineralogy to Petrology  
ERTH 2404 [0.5] Engineering Geoscience  
ERTH 2802 [0.5] Field Geology I  
ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds  
ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians  
ERTH 3204 [0.5] Mineral Deposits  
ERTH 3205 [0.5] Physical Hydrogeology  
ERTH 3806 [0.5] Structural Geology  
Food Sciences  
FOOD 3001 [0.5] Food Chemistry  
FOOD 3002 [0.5] Food Analysis  
FOOD 3005 [0.5] Food Microbiology  
Geography  
GEOG 1010 [0.5] Global Environmental Systems  
GEOG 3108 [0.5] Soil Properties  
Neuroscience  
NEUR 3206 [0.5] Sensory and Motor Neuroscience  
NEUR 3207 [0.5] Systems Neuroscience  
NEUR 4600 [0.5] Advanced Lab in Neuroanatomy  
Physics  
PHYS 1001 [0.5] Foundations of Physics I  
PHYS 1002 [0.5] Foundations of Physics II  
PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics  
PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion  
PHYS 1007 [0.5] Elementary University Physics I  
PHYS 1008 [0.5] Elementary University Physics II  
PHYS 2202 [0.5] Wave Motion and Optics  
PHYS 2604 [0.5] Modern Physics I  
PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars  
PHYS 3606 [0.5] Modern Physics II  
PHYS 3608 [0.5] Modern Applied Physics  

Course Categories for B.Sc. Programs

Science Geography Courses  
GEOG 1010 [0.5] Global Environmental Systems  
GEOG 2006 [0.5] Introduction to Quantitative Research  
GEOG 2013 [0.5] Weather and Water  
GEOG 2014 [0.5] The Earth's Surface  
GEOG 3003 [0.5] Quantitative Geography  
GEOG 3010 [0.5] Field Methods in Physical Geography  
GEOG 3102 [0.5] Geomorphology  
GEOG 3103 [0.5] Watershed Hydrology  
GEOG 3104 [0.5] Principles of Biogeography  
GEOG 3105 [0.5] Climate and Atmospheric Change  
GEOG 3106 [0.5] Aquatic Science and Management  
GEOG 3108 [0.5] Soil Properties  
GEOG 4000 [0.5] Field Studies  
GEOG 4005 [0.5] Directed Studies in Geography  
GEOG 4013 [0.5] Cold Region Hydrology  
GEOG 4017 [0.5] Global Biogeochemical Cycles  
GEOG 4101 [0.5] Two Million Years of Environmental Change  
GEOG 4103 [0.5] Water Resources Engineering  
GEOG 4104 [0.5] Microclimatology  
GEOG 4108 [0.5] Permafrost  
Science Psychology Courses  
PSYC 2001 [0.5] Introduction to Research Methods in Psychology  
PSYC 2002 [0.5] Introduction to Statistics in Psychology  
PSYC 2700 [0.5] Introduction to Cognitive Psychology  
PSYC 3000 [1.0] Design and Analysis in Psychological Research  
PSYC 3506 [0.5] Cognitive Development  
PSYC 3700 [1.0] Cognition (Honours Seminar)  
PSYC 3702 [0.5] Perception  
PSYC 2307 [0.5] Human Neuropsychology I  
PSYC 3307 [0.5] Human Neuropsychology II  
Science Continuation Courses  
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:  
BIOC (Biochemistry)  
BIOL (Biology)  
CHEM (Chemistry)  
COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.  
ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.  
Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.  
ENSC (Environmental Science)  
FOOD (Food Science and Nutrition)  
GEOM (Geomatics)  
HLTH (Health Sciences)  
ISAP (Interdisciplinary Science Practice)  
MATH (Mathematics)  
NEUR (Neuroscience)  
PHYS (Physics), except PHYS 2903  
Science Geography Courses (see list above)  
Science Psychology Courses (see list above)  
STAT (Statistics)  

170  The Academic Year (Graduate and Undergraduate Studies)
### Science Faculty Electives
Science Faculty Electives are courses at the 1000-4000 level chosen from:

- **BIOC** (Biochemistry)
- **BIOL** (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- **COMP** (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- **Engineering**
  - ENSC 2001
- **FOOD** (Food Science and Nutrition)
- **GEOM** (Geomatics)
- **HLTH** (Health Science)
- **ISAP** (Interdisciplinary Science Practice)
- **MATH** (Mathematics)
- **NEUR** (Neuroscience)
- PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- **STAT** (Statistics)
- **TSES** (Technology, Society, Environment) Biology students may use these courses only as free electives.

### Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

### Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)
All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above), NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

### Free Electives
Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

### Courses Allowable Only as Free Electives in any B.Sc. Program

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>BIOL 4810 [0.5]</td>
<td>Education Research in Biology</td>
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<tr>
<td>CHEM 1003 [0.5]</td>
<td>The Chemistry of Food, Health and Drugs</td>
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<td>CHEM 1004 [0.5]</td>
<td>Drugs and the Human Body</td>
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<td>CHEM 1007 [0.5]</td>
<td>Chemistry of Art and Artifacts</td>
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<tr>
<td>ERTH 1010 [0.5]</td>
<td>Our Dynamic Planet Earth</td>
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<td>ERTH 1011 [0.5]</td>
<td>Evolution of the Earth</td>
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<td>ERTH 2415 [0.5]</td>
<td>Natural Disasters</td>
</tr>
<tr>
<td>ISCI 1001 [0.5]</td>
<td>Introduction to the Environment</td>
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<tr>
<td>ISCI 2000 [0.5]</td>
<td>Natural Laws</td>
</tr>
<tr>
<td>ISCI 2002 [0.5]</td>
<td>Human Impacts on the Environment</td>
</tr>
<tr>
<td>PHYS 0005 [0.5]</td>
<td>Precalculus: Functions and Graphs</td>
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<tr>
<td>PHYS 0006 [0.5]</td>
<td>Precalculus: Trigonometric Functions and Complex Numbers</td>
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<td>MATH 1009 [0.5]</td>
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<td>MATH 1119 [0.5]</td>
<td>Linear Algebra: with Applications to Business</td>
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<td>MATH 1401 [0.5]</td>
<td>Elementary Mathematics for Economics I</td>
</tr>
<tr>
<td>MATH 1402 [0.5]</td>
<td>Elementary Mathematics for Economics II</td>
</tr>
</tbody>
</table>

### B.A. Regulations
The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

#### First-Year Seminars
B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

#### Breadth Requirement
Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration or Specialization may be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.
Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**


**Subject codes:** AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**


**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IREM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**


**Subject codes:** ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSIC, PSYC, SOCI, SOWK

**Declared and Undeclared Students**

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

**Change of Program Within the B.A. Degree**

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention: Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Degrees
- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements
B. Sc. Honours Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.
For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Science or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements
For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing
For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 5.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

B.Sc. Major Program
B.Sc. Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.
The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics. 4U Physics is strongly recommended.

Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing
For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are
described in the Co-operative Education Regulations section of this Calendar.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions and Calculus and Vectors are recommended.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law (Business Law), Law (Law, Policy and Government), Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Biology (BIOL) Courses

BIOL 1010 [0.5 credit]

Biotechnology and Society

A course for students interested in the science behind recent advances in biotechnology. The different ways in which biotechnology is being applied in agriculture, health care, and the environment will be examined. Precludes additional credit if taken concurrently with, or after BIOL 2200 or BIOC 2200 or BIOL 2201. Students in Biology and Biochemistry programs may only take this course as a free elective. Lectures three hours a week.

BIOL 1103 [0.5 credit]

Foundations of Biology I

A research-oriented course focusing on the scientific process of biological exploration at the cellular level. Topics include cell organization, metabolism, genetics, and reproduction.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 1003 (no longer offered).

Prerequisite(s): Ontario 4U/M in Biology (or equivalent), or Ontario 4U/M in Chemistry (or equivalent).

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 1104 [0.5 credit]

Foundations of Biology II

A research-oriented course focusing on the scientific process of biological exploration at the macro scale. Topics include evolution, diversity of life, and ecological relationships.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 1004 (no longer offered).

Prerequisite(s): Ontario 4U/M in Biology (or equivalent) or BIOL 1103.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 1105 [0.5 credit]

Biological Methods, Analysis and Interpretation

Formulation of biological research questions, development of hypotheses and predictions, design of experiments, collection and analysis of data, interpretation and presentation of results.

Lectures three hours a week.
BIOL 1902 [0.5 credit]
Natural History
A course designed primarily for students in non-biology programs to investigate the natural history of plants and animals, and the communities in which they occur. Particular attention is paid to the Ottawa region, but appropriate examples from other locales are also included. Lectures three hours a week.

BIOL 2001 [0.5 credit]
Animals: Form and Function
An introduction to the diverse structures of animals (both invertebrates and vertebrates) in relationship to their functions, discussed within an evolutionary framework. Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2002 [0.5 credit]
Plants: Form and Function
An introduction to the structure and development of higher plants (at cellular, morphological and organism levels) discussed in relation to their function. Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2005 [0.5 credit]
Human Biology
A course for non-specialists interested in how the human body works. Topics will include biological molecules, cells, genetics, and various organ systems. Examples will be used to connect concepts taught in the course with general knowledge of human health and disease.
Prerequisite(s): BIOL 1003 or BIOL 1103 and (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006) or permission of the Department. Students in Biology and Biochemistry programs may only take this course as a free elective.
Lectures three hours a week.

BIOL 2104 [0.5 credit]
Introductory Genetics
Lecture/laboratory course on the mechanisms of inheritance and the nature of gene structure, composition and function, introducing both classical Mendelian genetics and modern molecular genetics. It is strongly recommended that this course be taken by Biology majors in their second year of study.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 2106 (no longer offered) and BIOL 2107. Credit for BIOL 2106 will only be given if taken before BIOL 2104.
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2107 [0.5 credit]
Fundamentals of Genetics
Mechanisms of inheritance and the nature of gene structure, composition and function, introducing both classical Mendelian genetics and modern molecular genetics.
Precludes additional credit for BIOL 2104 and BIOL 2106 (no longer offered).
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.
Lectures three hours a week.

BIOL 2200 [0.5 credit]
Cellular Biochemistry
Cellular functions and their interrelationships. Introduction to thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.
Includes: Experiential Learning Activity
Also listed as BIOC 2200.
Precludes additional credit for BIOL 2201.
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006), or permission of the Department.
Lectures three hours a week, laboratory or tutorial four hours a week.

BIOL 2201 [0.5 credit]
Cell Biology and Biochemistry
A study of the molecular, metabolic and structural organization of cells in relation to function. This course is recommended for students not taking upper year Biology laboratory courses for which BIOL/BIOC laboratories are prerequisites.
Precludes additional credit for BIOL 2200, BIOC 2200.
Prerequisite(s): (BIOL 1003 or BIOL 1103) and (CHEM 1002 or CHEM 1006), or permission of the Department.
Lectures three hours a week.

BIOL 2301 [0.5 credit]
Biotechnology I
An introductory course on the science, technology, entrepreneurial skills and business considerations related to biotechnology. The course will survey broadly across the disciplines of Biology, including applications in agriculture, health, environment and industry.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the department.
Lectures and workshops three hours a week.
BIOL 2303 [0.5 credit]
Microbiology
The biology of the bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.
Also listed as ENVE 2002.
Prerequisite(s): BIOL 1003 or BIOL 1103.
Lectures three hours a week.

BIOL 2303 [0.5 credit]
Microbiology
The biology of the bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.
Also listed as ENVE 2002.
Prerequisite(s): BIOL 1003 or BIOL 1103.
Lectures three hours a week.

BIOL 2600 [0.5 credit]
Ecology
The scientific study of interactions of living organisms and their environment, and how these affect the distribution and abundance of life. Topics include energy transformation and flow, nutrient cycling, population and community dynamics, human impacts on ecosystems, conservation issues. Laboratory includes field and computer exercises.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), or permission of the Department.
Lectures three hours a week, laboratory or tutorial four hours a week.

BIOL 2903 [0.5 credit]
Natural History and Ecology of Ontario
Introduction to the remarkable diversity and ecological relationships of Ontario's flora and fauna, which are explored in a habitat context.
Precludes additional credit for BIOL 1903 (no longer offered).
Prerequisite(s): BIOL 1004 or BIOL 1104 or BIOL 1902.
Lectures three hours a week.

BIOL 3004 [0.5 credit]
Insect Diversity
Introductory course dealing with the taxonomic diversity, anatomy, behavior and physiology of insects, as well as their impacts on ecosystems, agriculture and animal and human health.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4601.
Prerequisite(s): BIOL 2001.
Lectures three hours a week.

BIOL 3008 [0.5 credit]
Bioinformatics
A practical exploration in the application of information technology to biochemistry and molecular biology. Insight into biological knowledge discovery via molecular structure and function prediction, comparative genomics and biological information management.
Includes: Experiential Learning Activity
Also listed as BIOC 3008, COMP 3308.
Prerequisite(s): BIOC 2200 or BIOL 2200, or permission of the Department.
Lectures two hours a week, computer workshop three hours a week.

BIOL 3102 [0.5 credit]
Mycology
This introductory course will cover the morphology, physiology, life cycles, evolution, ecology and biotechnology of the fungi.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2104 or BIOL 2107.
Lectures three hours a week.

BIOL 3104 [0.5 credit]
Molecular Genetics
A lecture course dealing with modern advances in molecular genetics.
Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the Department.
Lectures three hours a week.

BIOL 3111 [0.5 credit]
Vertebrate Evolution: Mammals, Reptiles, and Birds
Evolution of mammals, reptiles and birds. Emphasis on surveying amniote diversity, and the origin of key amniote transformations, as evidenced by the fossil record.
Includes: Experiential Learning Activity
Also listed as ERTH 3111.
Prerequisite(s): BIOL 2001 or ERTH 1009, or permission of the department.
Lectures two hours a week and a laboratory three hours a week.

BIOL 3112 [0.5 credit]
Vertebrate Evolution: Fish and Amphibians
Evolution of fish and amphibians. Emphasis on surveying fish and amphibian diversity, and the origin of key transformations of these groups, as evidenced by the fossil record.
Includes: Experiential Learning Activity
Also listed as ERTH 3112.
Prerequisite(s): BIOL 2001 or ERTH 1009, or permission of the department.
Lectures two hours a week and a laboratory three hours a week.

BIOL 3201 [0.5 credit]
Cell Biology
A lecture and laboratory course on the structure, composition, and function of eukaryotic cells.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2104 and BIOL 2200/BIOC 2200, or permission of the Department.
Lectures three hours a week, laboratory four hours a week.
BIOL 3202 [0.5 credit]
Principles of Developmental Biology
Introduction to the underlying principles and mechanisms governing development in multicellular animals and plants. Differentiation, growth, morphogenesis, and patterning will be examined at the organizational, cellular, and molecular levels to provide a balanced view of developmental phenomena in key model organisms.
Prerequisite(s): BIOL 2104 or BIOL 2107 and one of BIOL 2001 or BIOL 2002, or permission of the Department.
Lectures three hours a week.

BIOL 3205 [0.5 credit]
Plant Biochemistry and Physiology
A lecture and laboratory course consisting of selected topics in metabolism and physiology of plants, including photosynthesis, nutrient uptake and transport, intermediary and secondary metabolism, germination, growth and development.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2002 and BIOL 2200/BIOC 2200, or permission of the Department.
Lectures three hours a week, laboratory four hours a week.

BIOL 3301 [0.5 credit]
Biotechnology II
An interdisciplinary course on interactions between science, invention and innovation in biotechnology. Case studies related to regional biotechnology opportunities; social and ethical issues impacting biotechnology.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2301, BIOL 2104, and BIOL 2200/BIOC 2200 or permission of the department.
Lectures and laboratory/workshops three hours a week.

BIOL 3303 [0.5 credit]
Experimental Microbiology
Intensive training in laboratory techniques in microbiology, using bacteria and other microorganisms to demonstrate processes of cell growth, metabolism, gene expression, rapid evolution, gene transfer, microbial community dynamics and interactions with other organisms.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2104, BIOL 2200/BIOC 2200 and BIOL 2303, or permission of the Department.
Lecture/tutorial one and a half hours a week, laboratory four hours a week.

BIOL 3305 [0.5 credit]
Human and Comparative Physiology
The properties of physiological systems and components of humans and other animals with an emphasis on physical and chemical bases.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 3306.
Prerequisite(s): BIOL 2200/BIOC 2200 and BIOL 2001. A credit in PHYS at the 1000-level is strongly recommended.
Lectures three hours a week, laboratory four hours a week.

BIOL 3306 [0.5 credit]
Human Anatomy and Physiology
The anatomy and physiology of the neuromuscular, cardiovascular, respiratory, and excretory systems of humans with comparison to other animals.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 3305.
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), and (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006), and third year standing.
Lectures three hours per week.

BIOL 3307 [0.5 credit]
Advanced Human Anatomy and Physiology
The anatomy and physiology of the endocrine, skeletal, digestive, immunological, and reproductive systems, with additional emphasis on the embryological origins of the major physiological systems.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3305 or BIOL 3306.
Lectures three hours per week, workshop or laboratory four hours per week.

BIOL 3501 [0.5 credit]
Biomechanics
Properties of muscles, tendons, bones, joints and the co-ordinated use of these structures. Human and other animal locomotion and fitness, bird flight, especially the soaring of the vulture and the albatross, and animal migration are covered in detail.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104).
Lectures three hours a week, workshop two hours a week.

BIOL 3601 [0.5 credit]
Ecosystems and Environmental Change
Exploration of the unique contribution of the ecosystem approach to ecology, and of early key literature in ecosystem ecology through to current work on global environmental change.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2600.
Lectures three hours a week, laboratory four hours a week in six sessions.

BIOL 3602 [0.5 credit]
Conservation Biology
The science of biology as applied to the problem of maintaining species diversity. Topics include: history of conservation biology, valuation of species, indices of biodiversity, extinction, conservation genetics, conservation planning in parks and reserves, landscape ecology and case studies of conservation problems.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2600 or permission of the Department.
Lectures three hours a week and laboratory/workshop three hours a week.
BIOL 3604 [0.5 credit]
Statistics for Biologists
Introduction to the analysis of biological data. Students analyze real biological data sets in weekly laboratory sessions. Methods introduced include simple linear, polynomial, and multiple regression analysis, analysis of variance, nonparametric tests, tests of independence and logistic regression analysis.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 1105 or STAT 2507.
Lectures one and one-half hours and laboratory two and one-half hours a week.

BIOL 3605 [0.5 credit]
Field Course I
An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. Transportation and room and board costs are borne by the student. Ontario Universities Program in Field Biology; see offered modules for specific prerequisites.
Includes: Experiential Learning Activity
Also listed as NEUR 3203, for animal behaviour modules only.
Prerequisite(s): at least one course in BIOL beyond the 1000-level and written permission of the Department. Students may take both BIOL 3605 and BIOL 3606 for credit, but neither may be used to repeat a particular module.
All day, approximately six days a week.

BIOL 3606 [0.5 credit]
Field Course II
An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. Transportation and room and board costs are borne by the student. Ontario Universities Program in Field Biology; see offered modules for specific prerequisites.
Includes: Experiential Learning Activity
Prerequisite(s): at least one course in BIOL beyond the 1000-level and written permission of the Department. Students may take both BIOL 3605 and BIOL 3606 for credit, but neither may be used to repeat a particular module.
All day, approximately six days a week.

BIOL 3608 [0.5 credit]
Principles of Biogeography
Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.
Includes: Experiential Learning Activity
Also listed as GEOG 3104.
Prerequisite(s): BIOL 2600 or GEOG 1010 or permission of the Department.
Lectures, laboratory, and fieldwork five hours a week.

BIOL 3609 [0.5 credit]
Evolutionary Concepts
Evolution is the change in population properties across generations. Genetic variation, mutation, selection, drift, gene flow, genome evolution, speciation, development, biodiversity, fossils, and macro-evolution.
Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the instructor.
Lectures three hours a week.

BIOL 3611 [0.5 credit]
Evolutionary Ecology
The term “adaptation” is meaningful only with respect to an ecological context. Ecological contexts lead to evolutionary outcomes such as diverse mating systems, ageing, sexual reproduction, sexual dimorphism, geographic variation, phenotypic plasticity, and diverse life histories.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4608.
Prerequisite(s): BIOL 2600.
Lectures three hours a week; one field trip.

BIOL 3612 [0.5 credit]
Computational Methods in Ecology and Evolution
Introduction to the development and use of computer programs to address biological problems. Topics include the development of programs to analyse ecological data, models of population dynamics, deterministic chaos, cellular automata, simulations of foraging behaviour and evolutionary computation.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2600 or permission of the Department.
Lectures two hours per week, workshop three hours per week.

BIOL 3801 [0.5 credit]
Plants and Herbivores
Exploration of the chemical, physiological, ecological and evolutionary interactions that underlie the relationship between plants and their insect herbivores.
Prerequisite(s): BIOL 2001 and BIOL 2002.
Lectures/seminars three hours a week.

BIOL 3802 [0.5 credit]
Animal Behaviour
Advanced study of animal behaviour including the environmental, genetic, and neural influences on behaviour. Topics such as predator-prey interactions, mating behaviour, migration, parental care and social interactions are interpreted in an evolutionary context.
Prerequisite(s): BIOL 2001 or BIOL 2600 or permission of the Department.
Lectures and workshop/tutorials three hours a week.
**BIOL 3804 [0.5 credit]**
**Social Evolution**
Diversity in social behaviour from evolutionary and ecological perspectives. Topics include ecological determinants of social living, social networks, social foraging, inclusive fitness, kin selection, altruism, cooperation, and mating systems and strategies.
Prerequisite(s): BIOL 2001 and BIOL 2600, or permission of the Department.
Lectures three hours a week.

**BIOL 3901 [0.5 credit]**
**Research Proposal**
The development of a competitive research proposal in consultation with an advisor.
Includes: Experiential Learning Activity
Prerequisite(s): third year standing in an Honours Biology program and permission of the Department.

**BIOL 3902 [0.5 credit]**
**Topics in Biology I**
Specific topics of current interest. Topics may vary from year to year.
Prerequisite(s): third-year standing in a Biology program or permission of the Department.
Lecture, seminars, or workshops three hours per week.

**BIOL 3999 [0.0 credit]**
**Co-operative Work Term Report**
Practical experience for students enrolled in the Co-operative Option. Students must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Biology Co-operative Option and permission of the Department.

**BIOL 4008 [0.5 credit]**
**Molecular Plant Development**
Recent advances in plant development including molecular, biochemical, genomics, and proteomics studies.
Prerequisite(s): BIOL 2002 or permission of the Department.
Lectures three hours a week.

**BIOL 4102 [0.5 credit]**
**Molecular Ecology**
The interface of molecular biology, ecology and population biology. Topics include experimental design and a survey and critique of molecular genetic methods to study ecology.
Prerequisite(s): BIOL 2104 or BIOL 2107 and BIOL 2600; BIOL 3104 or one of BIOL 3601, BIOL 3602 (may be taken concurrently), or permission of the Department.
Lectures three hours a week.

**BIOL 4103 [0.5 credit]**
**Population Genetics**
Evolution of gene frequencies, including selection, mutation, genetic drift, inbreeding, gene flow, and population structure.
Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the Department. A course in statistics is highly recommended.
Lectures and seminars three hours a week.

**BIOL 4104 [0.5 credit]**
**Evolutionary Genetics**
An overview of the molecular evidence of evolution, speciation as well as the phylogenetic analysis of biological sequence data and biometrical traits.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 2001 or BIOL 2002) and (BIOL 2104 or BIOL 2107) or permission of the Department. A course in statistics is recommended.
Lectures and computer lab three hours a week.

**BIOL 4106 [0.5 credit]**
**Advances in Molecular Biology**
Review of the application of high throughput approaches to research in molecular and cellular biology and biochemistry with an emphasis on gene function and human disease progression.
Prerequisite(s): BIOL 2303 and (BIOL 3104 or BIOL 3201). Lectures and seminars three hours a week.

**BIOL 4109 [0.5 credit]**
**Laboratory Techniques in Molecular Genetics**
This laboratory course provides practical familiarity with commonly used techniques in molecular genetics. The laboratory is suitable for students with a developing interest in problems of molecular and cellular biology and biochemistry.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2200/BIOC 2200 and BIOL 2303 and BIOL 3104 or permission of the Department.
Lecture/laboratory six hours a week in two sessions.

**BIOL 4200 [0.5 credit]**
**Immunology**
The organization and function of the immune system, including the anatomy of the immune system, the properties and behaviour of cells of the immune system, and the molecular and genetic bases of the immune response.
Also listed as BIOC 4200.
Prerequisite(s): BIOL 3201 or permission of the Department.
Lectures three hours a week.
BIOL 4201 [0.5 credit]  
Advanced Cell Culture and Tissue Engineering  
Theory and application of current techniques and developments in cell culture as applied to research questions in the field of stem cells and tissue engineering. Includes: Experiential Learning Activity  
Also listed as BIOC 4201.  
Prerequisite(s): BIOL 3201 or permission of the Department.  
Laboratory four hours per week, tutorial one hour a week. Labs require regular participation outside of the scheduled lab time to maintain cell cultures and set up or complete experiments.

BIOL 4202 [0.5 credit]  
Mutagenesis and DNA Repair  
A mechanistic study of mutagenesis and DNA repair. Topics include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the development of genetic disease and cancer.  
Also listed as BIOC 4202.  
Prerequisite(s): BIOL 3104 and BIOL 2200/BIOC 2200 or permission of the Department.  
Lectures and tutorial three hours a week.

BIOL 4203 [0.5 credit]  
Evolution of Sex  
The evolution of sex, including meiosis, syngamy, sex determination, sex chromosomes, and gender from organismal, genetic, and developmental perspectives; the origin, maintenance, function, and ubiquity of sex.  
Prerequisite(s): BIOL 2104 or BIOL 2107.  
Lectures three hours a week.

BIOL 4206 [0.5 credit]  
Human Genetics  
A survey of human genetic variation and mutation in a molecular genetics context. Topics may include molecular basis of diseases, chromosomal abnormalities, genomic imprinting, cancer genetics, genomics, gene mapping and gene therapy.  
Prerequisite(s): BIOL 3104 or permission of the Department.  
Lectures three hours a week.

BIOL 4207 [0.5 credit]  
Advanced Embryology & Developmental Biology  
A laboratory-based exploration of techniques and recent developments in the use of model embryological systems as applied to questions of development and human health. Includes: Experiential Learning Activity  
Prerequisite(s): BIOL 3201 or BIOL 3202 or permission of the Department.  
Laboratory four hours per week, tutorial one hour a week. Labs require regular participation outside of the scheduled lab time to set up or complete experiments.

BIOL 4209 [0.5 credit]  
Advanced Plant Physiology  
An advanced course dealing with recent developments in selected topics of plant physiology.  
Prerequisite(s): BIOL 3205 and CHEM 2203, CHEM 2204 or permission of the Department.  
Lectures/discussion three hours a week.

BIOL 4300 [0.5 credit]  
Applied Microbiology  
Studies of the application of microorganisms. Topics may include: microbial communities, and agricultural, pharmaceutical, industrial and health sciences.  
Prerequisite(s): (BIOL 2200/BIOC 2200 or BIOL 2201), BIOL 2303 and (BIOL 3104 or BIOL 3303) or permission of the Department.  
Lectures and tutorial three hours a week.

BIOL 4301 [0.5 credit]  
Current Topics in Biotechnology  
Explorations of developing biotechnologies in areas such as microbial products, protein engineering, plant genetic engineering, environmental remediation, pharmaceuticals production and medical diagnostics and therapy.  
Prerequisite(s): BIOL 3301 or permission of the department.  
Lectures and tutorials three hours a week.

BIOL 4303 [0.5 credit]  
Advances in Microbiology  
Exploration of current microbiology including the molecular biology of infectious agents, use of model micro-organisms to study human cells and diseases, and functional genomics and proteomics. Special attention will be paid to the field’s “big questions”. Students will critically examine a number of research proposals.  
Prerequisite(s): BIOL 2303 and (BIOL 3104 or BIOL 3303 or BIOC 3102) or permission of the Department.  
Lectures three hours per week.

BIOL 4304 [0.5 credit]  
Forensic Biology  
An introduction to forensics that covers topics in molecular biology, biochemistry, genetics, population genetics and statistics as they relate to forensic biology. The course will describe the techniques used to identify body fluids and generate DNA profiles as well as the interpretation of forensic results.  
Prerequisite(s): (BIOL 2104 or BIOL 2107) and (BIOL 2200/BIOC 2200 or BIOL 2201) or permission of the Department.  
Lectures three hours a week.
BIOL 4306 [0.5 credit]
Animal Neurophysiology
A course dealing with recent advances made in particular areas of animal neurophysiology. Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4305.
Prerequisite(s): BIOL 3305 or BIOL 3306, or permission of the Department.
Lectures two hours a week, workshops or laboratory four hours a week.

BIOL 4309 [0.5 credit]
Studies in Human Performance
Biomechanical underpinnings of human performance including the quantitative analysis of human motion in normal activities and in athletic performance. Students will learn modern motion capture methods. This course will require students to design and execute an independent project. Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3307 and fourth-year standing, or permission of the department.
Lecture three hours per week, workshop/labs three hours per week.

BIOL 4300 [0.5 credit]
The Biology of Birds
Introduction to ornithology, the study of birds; the evolution of birds, migration, geographic variation, adaptations for flight, feeding, reproduction; extinction and preservation. Prerequisite(s): BIOL 2001 or permission of the department.
Lectures three hours per week.

BIOL 4501 [0.5 credit]
The Taxonomy of Birds
The taxonomy of birds and species identification are learned through the use of study skins in the lab. Field excursions allow first-hand study of various species. Participants must acquire a pair of binoculars and one of the recommended field guides. Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2001 or permission of the department.
Laboratory/field excursions four hours per week.

BIOL 4317 [0.5 credit]
Neuroethology: The Neural Basis of Animal Behaviour
Proximate mechanisms underlying animal behaviour. Focus on evolution of nervous systems in response to environmental selection pressures. Topics include: genetic and hormonal influences on behaviour (e.g. maternal care); unique sensory worlds (e.g. magnetic); various levels of neural integration, from simple reflexes to complex social behaviour.
Prerequisite(s): BIOL 3305 or BIOL 3306, or permission of the Department.
Lectures three hours a week.

BIOL 4318 [0.5 credit]
Adaptations to Extreme Environments
Lectures, discussions and student presentations will be used to examine adaptations of animals to extreme environments (e.g. desert) or lifestyles (e.g. diving), at the physiological, biochemical and molecular levels. Emphasis on becoming familiar with the current primary literature.
Prerequisite(s): BIOL 3305, or permission of the Department.
Lectures/workshops three hours a week.

BIOL 4319 [0.5 credit]
Studies in Exercise Physiology
Physiological mechanisms underlying human athletic performance. Exercise physiology and cardio-respiratory activity, metabolic regulation and musculoskeletal function. Practical experience will be gained in the workshop/laboratory based experimental sessions. Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3307 and fourth-year standing, or permission of the department.
Lectures two hours per week, workshop/labs three hours per week.

BIOL 4502 [0.5 credit]
Herpetology
Herpetology is the study of amphibians and reptiles. The behaviours, physiological ecology, conservation and identification of amphibians and reptiles will be examined through lectures, seminars and hands-on activities. Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2001.
Lectures or seminars three hours per week.

BIOL 4503 [0.5 credit]
Fish Ecology, Conservation and Management
Introduction to the diversity and environmental biology of the world's fishes. Applied issues in fisheries management, conservation, and aquaculture. Workshops expose students to techniques in fisheries science through hands-on demonstrations and field excursions. Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2600 or permission of the Department.
Lectures/seminars two hours a week, plus labs/workshops two hours a week.

BIOL 4504 [0.5 credit]
Ecology of Freshwater Invertebrates
Overview of the diversity and ecology of freshwater invertebrates. Aquatic invertebrates from local bodies of water will be sampled and identified in the lab. Experiments on the ecology and behaviour of model species of freshwater invertebrates will also be conducted in the lab. Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2001 and BIOL 2600.
Seminars and lab four hours a week.
BIOL 4505 [0.5 credit]
Coral Reefs
Examining the diversity of life on coral reefs and their interactions across ecological scales, from the biochemistry of zooxanthellae symbiosis to landscape scale trophodynamics, reticulate evolution, and reef fisheries. Emphasis is on synthesis writing drawn from the current primary literature.
Prerequisite(s): BIOL 2600. 
Lectures/seminars three hours a week

BIOL 4506 [0.5 credit]
Cactus Biology
Covers the cactus family over its entire range, including most of the western hemisphere, with discussion on their anatomy, physiology, ecology, evolution, and classification. Topics include how cacti are both typical flowering plants in some regards, and atypical in others.
Prerequisite(s): BIOL 2002. 
Lectures/seminars three hours a week

BIOL 4507 [0.5 credit]
Ecological Parasitology
Key concepts in the ecological study of parasites and pathogens, underpinned by evolutionary thinking and relevant to fundamental and applied questions of co-evolution, disease ecology, epidemiology, emerging infectious diseases, environmental parasitology, evolutionary transitions, host species range, immunity, resistance, tolerance, transmission mode, and virulence.
Prerequisite(s): BIOL 2600 and one of the following: BIOL 3601, BIOL 3604, BIOL 3609, BIOL 3611, BIOL 3612, BIOL 3801, BIOL 3802, BIOL 3804. 
Lectures or seminars 3 hours per week.

BIOL 4602 [0.5 credit]
Evolutionary Applications across Disciplines: From Medicine to Conservation
Evolutionary principles contributing to advancements across fields including medicine, agriculture, conservation, climate change, and engineering. Topics include evolution of virulence, causes of variation in human health, evolution of resistance to pesticides, interventions for recovery of species at risk, and biomimetic modeling in engineering and architecture.
Prerequisite(s): BIOL 1104 and third-year standing. 
Lectures/workshops three hours per week.

BIOL 4603 [0.5 credit]
Insect Evolution and Biology
Major questions on the origin, evolution and adaptation of structures and physiology of terrestrial arthropods, especially insects.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3004, or permission of the Department.
Lectures two hours a week, laboratory four hours a week.

BIOL 4604 [0.5 credit]
Landscape Ecology
Landscape ecology is the study of how landscape structure affects the abundance and distribution of organisms. The focus of this course is on research methods and results in landscape ecology. Applications in forestry, agriculture, and species conservation.
Prerequisite(s): BIOL 2600 or equivalent, BIOL 3601 or BIOL 3602 or BIOL 3608 or equivalent, and fourth-year standing in Biology, Geography, or Environmental Sciences. 
Lecture three hours a week.

BIOL 4802 [0.5 credit]
Advanced Animal Behaviour
Contemporary issues in behavioural ecology. Topics may include the relevance of behavioural ecology to conservation biology, to new insights into human social behaviour, and will be selected through consultation between professor and students.
Prerequisite(s): BIOL 3802 or BIOL 3804, or permission of the Department. 
Lectures or workshops three hours a week.

BIOL 4810 [0.5 credit]
Education Research in Biology
An introduction to the science of teaching and learning in biology. Students will be introduced to the foundational concepts in, and tools of, Discipline-Based Education Research (DBER) and will conduct their own DBER research project.
Includes: Experiential Learning Activity
Prerequisite(s): 4th year standing, or permission of the department This course can only be used by science students as a free elective. 
Also offered at the graduate level, with different requirements, as BIOL 5810, for which additional credit is precluded. 
Seminar three hours per week, classroom-based research one hour per week.

BIOL 4901 [0.5 credit]
Directed Special Studies
Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Prerequisite(s): permission of the Department. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

BIOL 4902 [0.5 credit]
Topics in Biology II
Specific topics of current interest. Topics may vary from year to year.
Prerequisite(s): fourth-year standing in a Biology program or permission of the Department. 
Lecture, seminars, or workshops three hours per week.
### BIOL 4905 [1.0 credit]
#### Honours Workshop
Within the context of an active learning environment, students participate in a variety of activities which may include literature reviews and critiques, media releases and response papers, oral presentations, and posters. Projects are focused on an area of biological research of interest to the student. Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4907 and BIOL 4908.
Prerequisite(s): fourth-year standing in an Honours biology program and permission of the Department.
Workshops three hours per week.

### BIOL 4907 [1.0 credit]
#### Honours Essay and Research Proposal
An independent critical review and research proposal, using library resources, under the direct supervision of a faculty advisor. Evaluation is based on a written report and a poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4905 and BIOL 4908.
Prerequisite(s): fourth-year standing in an Honours Biology program and permission of the Department.

### BIOL 4908 [1.0 credit]
#### Honours Research Thesis
An independent research project undertaken in the field and/or the laboratory, under the direct supervision of a faculty adviser. Evaluation is based on a written thesis and a poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4905 and BIOL 4907.
Prerequisite(s): fourth-year standing in an Honours biology program with a minimum CGPA of 8.0 in the major or permission of the Department.

### Biotechnology
This section presents the requirements for programs in:
- Biochemistry and Biotechnology B.Sc. Honours
- Biology and Biotechnology B.Sc. Honours

### Program Requirements
#### Biochemistry and Biotechnology
B.Sc. Honours (20.0 credits)

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<thead>
<tr>
<th>A. Credits Included in the Major CGPA (15.0 credits)</th>
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<tr>
<td>BIOL 1103 [0.5] Foundations of Biology I</td>
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<td>BIOL 1104 [0.5] Foundations of Biology II</td>
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<td>BIOL 2104 [0.5] Introductory Genetics</td>
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<td>BIOL 3104 [0.5] Molecular Genetics</td>
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<td>BIOL 3301 [0.5] Biotechnology II</td>
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<td>BIOL 4301 [0.5] Current Topics in Biotechnology</td>
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<tr>
<td>BIOL 2001 [0.5] Animals: Form and Function</td>
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<td>BIOL 2002 [0.5] Plants: Form and Function</td>
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<td>BIOL 3201 [0.5] Cell Biology</td>
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<td>BIOL 3205 [0.5] Plant Biochemistry and Physiology</td>
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<td>BIOL 3303 [0.5] Experimental Microbiology</td>
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<td>BIOL 3305 [0.5] Human and Comparative Physiology</td>
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<td>BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics</td>
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<td>BIOL 4300 [0.5] Applied Microbiology</td>
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<td>BIOL 4303 [0.5] Advances in Microbiology</td>
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<td>BIOC 3101 [0.5] General Biochemistry I</td>
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<td>BIOL 4908 [1.0] Research Project</td>
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<td>BIOC 3008 [0.5] Bioinformatics</td>
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<td>or BIOC 3203 [0.5] Biochemical Pharmacology</td>
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<td>BIOC 4004 [0.5] Industrial Biochemistry</td>
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<td>BIOC 4005 [0.5] Biochemical Regulation</td>
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<td>BIOC 4007 [0.5] Membrane Biochemistry</td>
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<td>BIOC 4008 [0.5] Computational Systems Biology</td>
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<td>BIOC 4009 [0.5] Biochemistry of Disease</td>
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<td>BIOC 4200 [0.5] Immunology</td>
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<td>BIOC 4204 [0.5] Protein Biotechnology</td>
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<td>BIOC 4708 [0.5] Principles of Toxicology</td>
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<td>CHEM 2103 [0.5] Physical Chemistry I</td>
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<td>or BIOC 2300 [0.5] Physical Biochemistry</td>
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<td>CHEM 2303 [0.5] Analytical Chemistry II</td>
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<td>CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry</td>
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<td>CHEM 3201 [0.5] Advanced Organic Chemistry</td>
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<td>BIOL 2001 [0.5] Animals: Form and Function</td>
<td></td>
</tr>
</tbody>
</table>

UNOFFICIAL 2021-22 Undergraduate Calendar 183
Biology and Biotechnology  

**B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (13 credits)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>6.5</td>
<td>BIOL 1103 [0.5] Foundations of Biology I</td>
</tr>
<tr>
<td></td>
<td>BIOL 1104 [0.5] Foundations of Biology II</td>
</tr>
<tr>
<td></td>
<td>BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation</td>
</tr>
<tr>
<td></td>
<td>BIOL 2001 [0.5] Animals: Form and Function</td>
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<tr>
<td></td>
<td>BIOL 2002 [0.5] Plants: Form and Function</td>
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<tr>
<td></td>
<td>BIOL 2104 [0.5] Introductory Genetics</td>
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<tr>
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<td>BIOL 2200 [0.5] Cellular Biochemistry</td>
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<tr>
<td></td>
<td>BIOL 2301 [0.5] Biotechnology I</td>
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<td>BIOL 2303 [0.5] Microbiology</td>
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<td>BIOL 3104 [0.5] Molecular Genetics</td>
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<td>BIOL 3201 [0.5] Cell Biology</td>
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<tr>
<td></td>
<td>BIOL 3301 [0.5] Biotechnology II</td>
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<td></td>
<td>BIOL 4301 [0.5] Current Topics in Biotechnology</td>
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**B. Credits Not Included in the Major CGPA (5.0 credits)**

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<tr>
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<td>BIOC 3101 [0.5] General Biochemistry I</td>
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<tr>
<td></td>
<td>BIOC 3102 [0.5] General Biochemistry II</td>
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**3. 4.0 credits from:**

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<tbody>
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<td>BIOC 3008 [0.5] Bioinformatics</td>
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<td>BIOC 3103 [0.5] Practical Biochemistry I</td>
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<td>BIOC 3104 [0.5] Practical Biochemistry II</td>
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<tr>
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<td>BIOC 3202 [0.5] Biophysical Techniques and Applications</td>
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<td></td>
<td>BIOL 3004 [0.5] Insect Diversity</td>
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<td>BIOL 3102 [0.5] Mycology</td>
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<td></td>
<td>BIOL 3205 [0.5] Plant Biochemistry and Physiology</td>
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<td>BIOL 3303 [0.5] Experimental Microbiology</td>
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<td></td>
<td>BIOL 3305 [0.5] Human and Comparative Physiology</td>
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<td>BIOC 3501 [0.5] Biomechanics</td>
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<td>BIOC 3901 [0.5] Research Proposal</td>
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<td>CHEM 3700 [0.5] Industrial Applications of Chemistry</td>
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<td>CHEM 3800 [0.5] The Chemistry of Environmental Pollutants</td>
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<td>FOOD 3005 [0.5] Food Microbiology</td>
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<td>BIOC 4001 [0.5] Methods in Biochemistry</td>
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<td>BIOC 4004 [0.5] Industrial Biochemistry</td>
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<td>BIOC 4005 [0.5] Biochemical Regulation</td>
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<td>BIOC 4007 [0.5] Membrane Biochemistry</td>
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<td>BIOC 4008 [0.5] Computational Systems Biology</td>
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<td>BIOC 4009 [0.5] Biochemistry of Disease</td>
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<td>BIOC 4203 [0.5] Advanced Metabolism</td>
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<td>BIOC 4204 [0.5] Protein Biotechnology</td>
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<td>BIOC 4708 [0.5] Principles of Toxicology</td>
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<td></td>
<td>BIOC 4106 [0.5] Advances in Molecular Biology</td>
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<td></td>
<td>BIOC 4109 [0.5] Laboratory Techniques in Molecular Genetics</td>
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<td>BIOL 4200 [0.5] Immunology</td>
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<tr>
<td></td>
<td>BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering</td>
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</tbody>
</table>

**Total Credits** 20.0
Students in a Bachelor of Science program must present 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.

2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

### Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

### Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

### Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.
Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

### Approved Experimental Science Courses

#### Biochemistry
- BIOC 2200 [0.5] Cellular Biochemistry
- BIOC 4001 [0.5] Methods in Biochemistry
- BIOC 4201 [0.5] Advanced Cell Culture and Tissue Engineering

#### Biology
- BIOL 1103 [0.5] Foundations of Biology I
- BIOL 1104 [0.5] Foundations of Biology II
- BIOL 2001 [0.5] Animals: Form and Function
- BIOL 2002 [0.5] Plants: Form and Function
- BIOL 2104 [0.5] Introductory Genetics
- BIOL 2200 [0.5] Cellular Biochemistry
- BIOL 2600 [0.5] Ecology

#### Chemistry
- CHEM 1001 [0.5] General Chemistry I
- CHEM 1002 [0.5] General Chemistry II
- CHEM 1005 [0.5] Elementary Chemistry I
- CHEM 1006 [0.5] Elementary Chemistry II
- CHEM 2103 [0.5] Physical Chemistry I
- CHEM 2203 [0.5] Organic Chemistry I
- CHEM 2204 [0.5] Organic Chemistry II
- CHEM 2302 [0.5] Analytical Chemistry I
- CHEM 2303 [0.5] Analytical Chemistry II
- CHEM 2800 [0.5] Foundations for Environmental Chemistry

#### Earth Sciences
- ERTH 1006 [0.5] Exploring Planet Earth
- ERTH 1009 [0.5] The Earth System Through Time
- ERTH 2102 [0.5] Mineralogy to Petrology
- ERTH 2404 [0.5] Engineering Geoscience
- ERTH 2802 [0.5] Field Geology I
- ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds
- ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians
- ERTH 3204 [0.5] Mineral Deposits
- ERTH 3205 [0.5] Physical Hydrogeology
- ERTH 3806 [0.5] Structural Geology

#### Food Sciences
- FOOD 3001 [0.5] Food Chemistry
- FOOD 3002 [0.5] Food Analysis
- FOOD 3005 [0.5] Food Microbiology

#### Geography
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 3108 [0.5] Soil Properties

#### Neuroscience
- NEUR 3206 [0.5] Sensory and Motor Neuroscience
- NEUR 3207 [0.5] Systems Neuroscience
- NEUR 4600 [0.5] Advanced Lab in Neuroanatomy

#### Physics
- PHYS 1001 [0.5] Foundations of Physics I
- PHYS 1002 [0.5] Foundations of Physics II
- PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics
- PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
- PHYS 1007 [0.5] Elementary University Physics I
- PHYS 1008 [0.5] Elementary University Physics II
- PHYS 2202 [0.5] Wave Motion and Optics
- PHYS 2604 [0.5] Modern Physics I
- PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars
- PHYS 3606 [0.5] Modern Physics II
- PHYS 3608 [0.5] Modern Applied Physics

### Course Categories for B.Sc. Programs

#### Science Geography Courses
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth’s Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography
- GEOG 3102 [0.5] Geomorphology
- GEOG 3103 [0.5] Watershed Hydrology
- GEOG 3104 [0.5] Principles of Biogeography
- GEOG 3105 [0.5] Climate and Atmospheric Change
- GEOG 3106 [0.5] Aquatic Science and Management
- GEOG 3108 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 4005 [0.5] Directed Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Microclimatology
- GEOG 4108 [0.5] Permafrost

#### Science Psychology Courses
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 2307 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II
Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 2000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
- ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except

Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)
All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives
Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

- BIOC 1000 [0.5] Education Research in Biology
- CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs
- CHEM 1004 [0.5] Drugs and the Human Body
- CHEM 1007 [0.5] Chemistry of Art and Artifacts
- ERTH 1010 [0.5] Our Dynamic Planet Earth
- ERTH 1011 [0.5] Evolution of the Earth
- ERTH 2415 [0.5] Natural Disasters
- ISCI 1001 [0.5] Introduction to the Environment
- ISCI 2000 [0.5] Natural Laws
- ISCI 2002 [0.5] Human Impacts on the Environment
- MATH 0107 [0.5] Algebra and Geometry
- PHYS 1901 [0.5] Planetary Astronomy
- PHYS 1902 [0.5] From our Star to the Cosmos
- PHYS 1905 [0.5] Physics Behind Everyday Life
- PHYS 2903 [0.5] Physics Towards the Future

Prohibited Courses
The following courses are not acceptable for credit in any B.Sc. program:

- COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students
- MATH 0005 [0.5] Precalculus: Functions and Graphs
- MATH 0006 [0.5] Precalculus: Trigonometric Functions and Complex Numbers
- MATH 1009 [0.5] Mathematics for Business
- MATH 1119 [0.5] Linear Algebra: with Applications to Business
- MATH 1401 [0.5] Elementary Mathematics for Economics I
Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job.

It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts. While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.
Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**B.Sc. Honours Biotechnology: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

**Co-operative Education - Bachelor of Science**

The following programs in the Bachelor of Science Honours offer a co-operative education option:

- Applied Physics, Biochemistry (including computational), Bioinformatics, Biology (including computational), Biotechnology, Chemistry (including computational), Earth Sciences, Environmental Science, Food Science and Nutrition, Geomatics, Neuroscience, Neuroscience and Mental Health, Physical Geography and Physics.

Students in all streams of the Bachelor of Science must successfully complete three (3) work terms to obtain the co-op designation.

**Co-op Admission and Continuation Requirements for Students in the Bachelor of Science**

For admission to and continuation in the co-op option, all students must:

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000

**Program-Specific Admission and Continuation Requirements:**

**Applied Physics, Biochemistry (including computational), Bioinformatics, Biology (including computational), Biotechnology, Chemistry (including computational), Earth Sciences, Environmental Science, Neuroscience, Neuroscience and Mental Health and Physics:**

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

**Food Science and Nutrition**

1. Registered as a full-time student in the Bachelor of Science Honours in Food Science and Nutrition;
2. Obtained and maintained a major CGPA of 9.0 or higher and an overall CGPA of 7.5 or higher in the first three years of academic study
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term, at least 2.0 credits from the following list of courses: FOOD 3001, FOOD 3002, FOOD 3003, FOOD 3004, and FOOD 3005

**Geomatics and Physical Geography:**

1. Registered in the Bachelor of Science (Honours) Programs in Physical Geography or Geomatics;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
   a. the required second-year methods courses in their program (GEOG/ENST 2005, GEOG/ENST 2006)
   b. the required field course in their program (ENST 3900/GEOG 3000/GEOG 3010/GEOG 3030)
5. Be registered as a full-time student.
Co-op Work Term Courses

- Physics, Applied Physics, Biology and Physics, Chemistry and Physics, Mathematics and Physics (PHYS 3999 [0.0]) Co-operative Work Term Report
- Biochemistry and Computational Biochemistry (BIOC 3999 [0.0]) Co-operative Work Term
- Biochemistry and Biotechnology, Bioinformatics, Biology, Biotechnology, Computational Biology, Biology and Physics (BIOL 3999 [0.0]) Co-operative Work Term Report
- Chemistry, Chemistry and Physics, Computational Chemistry (CHEM 3999 [0.0]) Co-operative Work Term
- Earth Sciences (ERTH 3999 [0.0]) Co-operative Work Term
- Food Science (FOOD 3999 [0.0]) Co-operative Work Term
- Environmental Science (ENSC 3999 [0.0]) Co-operative Work Term
- Geomatics (GEOM 3999 [0.0]) Co-operative Work Term
- Neuroscience and Neuroscience Mental Health (NEUR 3999 [0.0]) Co-operative Work Term
- Physical Geography (GEOG 3999 [0.0]) Co-operative Work Term

Work-Study Patterns

- Applied Physics, Biochemistry, Bioinformatics, Biology, Biotechnology, Chemistry, Computational Biochemistry, Computational Biology, Computational Chemistry, Earth Sciences, Environmental Science, Neuroscience, Neuroscience and Mental Health, Physics

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- Food Science and Nutrition

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- Physical Geography, Geomatics

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<td>Winter</td>
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</tr>
<tr>
<td>Summer</td>
<td>Summer</td>
<td>Summer</td>
<td>W</td>
<td>Summer</td>
</tr>
</tbody>
</table>

Legend

- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours Program

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.
For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

**Advanced Standing**

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**B.Sc. Major Program**

**B.Sc. Program**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics. 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Business**

This section presents the requirements for programs in:

- Bachelor of Commerce Honours
- Concentration in Accounting
- Concentration in Entrepreneurship
- Concentration in Finance
- Concentration in Information Systems
- Concentration in International Business
- Concentration in Management
- Concentration in Marketing
- Concentration in Supply Chain Management
- Bachelor of Commerce
- Bachelor of International Business Honours
- Concentration in International Marketing and Trade
- Concentration in International Strategy and Human Resources Management
- Concentration in Global Financial Management and Systems
- Minor in Arts Management
- Minor in Business
- Minor in Business (Entrepreneurship)
- Minor in Human Resources and Management for B.A. Honours Psychology
- Post-Baccalaureate Diploma in Accounting

**Program Requirements**

**Bachelor of Commerce Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (12.0 credits):**

1. **1.5 credits in:**
   - BUSI 1004 [0.5] Financial Accounting for Business Students
   - BUSI 1005 [0.5] Managerial Accounting for Business Students
   - BUSI 1800 [0.5] Introduction to Business

2. **1.0 credit in:**
   - ECON 1001 [0.5] Introduction to Microeconomics
   - ECON 1002 [0.5] Introduction to Macroeconomics

3. **0.5 credit in:**
   - MATH 1009 [0.5] Mathematics for Business

4. **1.0 credit in:**
   - PSYC 1002 [0.5] Introduction to Psychology II
   - SOCI 1005 [0.5] Sociology for Bachelor of Commerce Students

5. **4.0 credits in:**
   - BUSI 2101 [0.5] Organizational Behaviour
   - BUSI 2208 [0.5] Introduction to Marketing
   - BUSI 2301 [0.5] Introduction to Supply and Operations Management
Concentrations in the B.Com. Program

Concentrations described below are open to students registered in the B.Com. program. Students enrolled in a concentration must satisfy the requirements for Bachelor of Commerce (above) while gaining credit for the requirements of the Concentration through appropriate choice of courses. Students in the Concentration in International Business take Business BUSI 4709 Strategic Management for International Business in place of BUSI 4609 Strategic Management and BUSI 4705 Ethics and Cross-cultural Interaction in place of BUSI 4601 Business Ethics in the B.Com. requirements.

Declaration of Concentration(s)

Normally, students are expected to have declared their concentration(s), if any, before commencing the sixth credit into the program. Only under special circumstances would a student be allowed to enroll in a concentration after the completion of the thirteenth credit.

Declaration of Double Concentrations

To be eligible to declare a second concentration, a student must have completed at least 6.0 credits with a minimum overall CGPA of 8.0.

Concentration in Accounting (4.0 credits)

1. 2.5 credits in:
   - BUSI 2001 [0.5] Intermediate Accounting I
   - BUSI 2002 [0.5] Intermediate Accounting II
   - BUSI 3001 [0.5] Accounting for Business Combinations
   - BUSI 3005 [0.5] Taxation I
   - BUSI 3008 [0.5] Intermediate Management Accounting and Control

2. 1.5 credits from:
   - BUSI 2505 [0.5] Business Finance II
   - BUSI 3007 [0.5] Auditing I
   - BUSI 3040 [0.5] Data Analytics and Information Systems for Accounting
   - BUSI 4005 [0.5] Taxation II
   - BUSI 4008 [0.5] Advanced Management Accounting and Control

Total Credits: 4.0

Concentration in Entrepreneurship (3.5 credits)

1. 2.0 credits in:
   - BUSI 3600 [0.5] Entrepreneurial Strategies
   - BUSI 3810 [0.5] Business Development
   - BUSI 3820 [0.5] Practicum in Business Design
   - BUSI 4810 [0.5] Practicum in Business Creation
   - or an approved elective for Entrepreneurship programs

2. 1.5 credits from a list of approved courses including the following:
   - BUSI 3117 [0.5] Developing Creative Thinking
   - BUSI 3611 [0.5] Managing the Family Enterprise
   - BUSI 4105 [0.5] Managing Change
   - BUSI 4117 [1.0] Creative Thinking
   - BUSI 4607 [0.5] Management of Technology and Innovation
   - BUSI 4708 [0.5] International Expansion and Operations
   - BUSI 4710 [0.5] International New Ventures

Total Credits: 3.5

Concentration in Finance (4.5 credits)

1. 3.0 credits in:
   - BUSI 2505 [0.5] Business Finance II
   - BUSI 3500 [0.5] Applied Corporate Finance
Concentration in Information Systems (4.0 credits)

1. 2.5 credits in:
   - BUSI 3400 [0.5] Data and Information Management
   - BUSI 3402 [0.5] Systems Analysis and Design
   - BUSI 4400 [0.5] IS Strategy, Management and Acquisition
2. 1.5 credits from:
   - BUSI 2402 [0.5] Business Applications Development
   - BUSI 3308 [0.5] Simulation Modeling and Analytics
   - BUSI 3401 [0.5] Applications Development for Online Environments
   - BUSI 4406 [0.5] Business Analytics
   - BUSI 4408 [0.5] Social Analytics
   - BUSI 4607 [0.5] Management of Technology and Innovation

Total Credits 4.0

Concentration in International Business (4.0 credits)

1. 2.0 credits in:
   - BUSI 3703 [0.5] International and Comparative Management
   - BUSI 3704 [0.5] The Environment of International Business
   - BUSI 4205 [0.5] International Marketing Strategy
   - BUSI 4717 [0.5] Managing Globalization in Emerging Economies
2. 1.0 credit from:
   - BUSI 3301 [0.5] Supply Chain Management Strategies

Total Credits 4.0
Concentration in Marketing (4.5 credits)

1. 2.0 credits in: 2.0
   - BUSI 3205 [0.5] Marketing Communications
   - BUSI 3207 [0.5] Marketing Research
   - BUSI 3209 [0.5] Consumer Behaviour
   - BUSI 4208 [0.5] Marketing Management

2. 2.5 credits from: 2.5
   - BUSI 3204 [0.5] Digital Marketing
   - BUSI 3208 [0.5] Business-to-Business Marketing
   - BUSI 4201 [0.5] Marketing Metrics
   - BUSI 4203 [0.5] Marketing in Not-for-Profit Organizations
   - BUSI 4205 [0.5] International Marketing Strategy
   - BUSI 4209 [0.5] Consumer Culture Theory
   - BUSI 4229 [0.5] Marketing in the Arts and Culture Sectors
   - BUSI 4331 [0.5] Artificial Intelligence and E-Supply Chain Technologies
   - BUSI 4408 [0.5] Social Analytics

Total Credits 4.5

Concentration in Supply Chain Management (4.5 credits)

1. 2.5 credits in: 2.5
   - BUSI 3301 [0.5] Supply Chain Management Strategies
   - BUSI 3305 [0.5] Logistics and Transportation
   - BUSI 4302 [0.5] Management of Quality
   - BUSI 4304 [0.5] Procurement and Contracting
   - BUSI 4331 [0.5] Artificial Intelligence and E-Supply Chain Technologies

2. 2.0 credits from: 2.0
   - BUSI 3208 [0.5] Business-to-Business Marketing
   - BUSI 3308 [0.5] Simulation Modeling and Analytics
   - BUSI 3400 [0.5] Data and Information Management
   - BUSI 3402 [0.5] Systems Analysis and Design
   - BUSI 3706 [0.5] International Business Negotiations
   - BUSI 4400 [0.5] IS Strategy, Management and Acquisition
   - BUSI 4406 [0.5] Business Analytics
   - BUSI 4408 [0.5] Social Analytics
   - BUSI 4708 [0.5] International Expansion and Operations
   - ECON 3600 [0.5] Introduction to International Economics
   - LAWS 3208 [0.5] International Trade Regulation

Total Credits 4.5

Note: In Item 2 above, for further emphasis within this concentration, students may cluster courses in the following manners:

2a. E-Supply Chain Management:
   - BUSI 3208 [0.5] Business-to-Business Marketing
   - BUSI 3400 [0.5] Data and Information Management

2b. Supply Chain Management - Business Analytics:
   - BUSI 3308 [0.5] Simulation Modeling and Analytics
   - BUSI 3400 [0.5] Data and Information Management
   - BUSI 4406 [0.5] Business Analytics
   - BUSI 4408 [0.5] Social Analytics
   - BUSI 4301 [0.5] Decision Models and Analytics
   - STAT 3503 [0.5] Regression Analysis
   - STAT 3507 [0.5] Sampling Methodology

2c. Global Supply Chain Management:
   - BUSI 3208 [0.5] Business-to-Business Marketing
   - BUSI 3706 [0.5] International Business Negotiations
   - BUSI 4301 [0.5] Decision Models and Analytics
   - BUSI 4708 [0.5] International Expansion and Operations
   - ECON 3600 [0.5] Introduction to International Economics
   - LAWS 3208 [0.5] International Trade Regulation

Bachelor of Commerce (20.0 credits)

Enrolment in the Bachelor of Commerce program is restricted. Please consult with an academic advisor for more information.

A. Credits Included in the Major CGPA (11.0 credits):

1. 1.5 credits in: 1.5
   - BUSI 1004 [0.5] Financial Accounting for Business Students
   - BUSI 1005 [0.5] Managerial Accounting for Business Students
   - BUSI 1800 [0.5] Introduction to Business

2. 1.0 credits in: 1.0
   - ECON 1001 [0.5] Introduction to Microeconomics
   - ECON 1002 [0.5] Introduction to Macroeconomics

3. 0.5 credit in: 0.5
   - MATH 1009 [0.5] Mathematics for Business

4. 1.0 credits in: 1.0
   - PSYC 1002 [0.5] Introduction to Psychology II
   - SOCI 1005 [0.5] Sociology for Bachelor of Commerce Students

5. 4.0 credits in: 4.0
   - BUSI 2101 [0.5] Organizational Behaviour
   - BUSI 2208 [0.5] Introduction to Marketing
   - BUSI 2301 [0.5] Introduction to Supply and Operations Management
   - BUSI 2400 [0.5] Foundations of Information Systems
   - BUSI 2504 [0.5] Business Finance I
   - BUSI 2601 [0.5] Business Law
   - BUSI 2701 [0.5] Fundamentals of International Business
   - BUSI 2800 [0.5] Entrepreneurship

6. 0.5 credits in: 0.5
   - STAT 2606 [0.5] Business Statistics
Sprott School of Business Supervisor of Undergraduate Programs to verify if the preferred language option may have become available after the publication of this calendar.

All first year Bachelor of International Business students will be assessed for ability in their selected language by the relevant language unit and placed in the appropriate courses as authorized by the language unit, unless a student fully tests out of a language (see note 5 below). Students with some ability in their selected language may be allowed to pursue studies in that language on the understanding that they will effect a significant improvement in their ability.

The Year Abroad

The Year Abroad Requirement of the B.I.B. program is met by the successful completion of a minimum of 4.0 approved credits during the year of study abroad (this includes BUSI 3700 Cross-cultural Communication), with a minimum of 1.0 credit taught in the chosen language for the program. The B.I.B. student will study at one of Carleton’s approved Exchange partner institutions, as a full-time student on Exchange for one academic year. Students could alternatively complete the Year Abroad Requirement of the B.I.B program by two other means;

1) the successful completion of a minimum of 2.0 approved credits during the year of study abroad (this includes BUSI 3700 Cross-cultural Communication), with a minimum of 0.5 credits taught in the chosen language for the program, along with a minimum 12 week pre-approved internship (BUSI 3701 Practicum in International Business I) in that country.

OR

2) the successful completion of a minimum 24 week pre-approved internship (this includes BUSI 3700 Cross-cultural Communication and BUSI 3702 Practicum in International Business II) in a country where that language is spoken.

Students who fully test out of one of the B.I.B. required languages will be eligible to spend their third year abroad in a country where one of Carleton’s approved Exchange partner institutions exists. A student's country of origin is not an eligible country for their third year abroad unless approved by the School of Business.

In order to be eligible to study abroad in third year, students must be in Good Standing at the time of application and are required to have successfully completed a minimum of 9.0 credits:

The number of courses available in English in foreign schools may vary. Carleton credits commensurate to courses taken abroad will be determined by the Registrar's Office and awarded towards the student's degree.

Students are responsible for all traveling, living and incidental costs for fulfilling third-year requirements abroad. Tuition fees and compulsory miscellaneous fees will be paid to Carleton University according to Carleton University's fee structure. The student may be liable for

Bachelor of International Business (Honours)

Program Requirements

The Bachelor of International Business (B.I.B.) program is characterized by the requirement that students spend third year in studies abroad.

Students in the B.I.B. program are required to specialize in one of the following languages: French, German, Japanese, Mandarin, or Spanish.

Language Training Component

Students may select French, German, Japanese, Mandarin, or Spanish as their specialization language for study.

Applicants to the program interested in languages other than those listed above should contact the Eric
compulsory miscellaneous fees assessed by the foreign institution, including possible fees for language courses.

A limited number of bursaries are available to offset costs. For details on how to apply for a bursary, contact the Awards Office.

**Bachelor of International Business Honours (20.0 credits)**

<table>
<thead>
<tr>
<th>A. Credits Included in the Major CGPA (12.5 credits)</th>
<th>1.5 credits in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSI 1004 [0.5]</td>
<td>Financial Accounting for Business Students</td>
</tr>
<tr>
<td>BUSI 1005 [0.5]</td>
<td>Managerial Accounting for Business Students</td>
</tr>
<tr>
<td>BUSI 1701 [0.5]</td>
<td>Introduction to International Business</td>
</tr>
<tr>
<td>2. 2.0 credits in:</td>
<td></td>
</tr>
<tr>
<td>MATH 1009 [0.5]</td>
<td>Mathematics for Business</td>
</tr>
<tr>
<td>ECON 1001 [0.5]</td>
<td>Introduction to Microeconomics</td>
</tr>
<tr>
<td>ECON 1002 [0.5]</td>
<td>Introduction to Macroeconomics</td>
</tr>
<tr>
<td>STAT 2606 [0.5]</td>
<td>Business Statistics</td>
</tr>
<tr>
<td>3. 3.0 credits in:</td>
<td></td>
</tr>
<tr>
<td>BUSI 2208 [0.5]</td>
<td>Introduction to Marketing</td>
</tr>
<tr>
<td>BUSI 2301 [0.5]</td>
<td>Introduction to Supply and Operations Management</td>
</tr>
<tr>
<td>BUSI 2400 [0.5]</td>
<td>Foundations of Information Systems</td>
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<tr>
<td>BUSI 2504 [0.5]</td>
<td>Business Finance I</td>
</tr>
<tr>
<td>BUSI 2702 [0.5]</td>
<td>Introduction to International Management</td>
</tr>
<tr>
<td>BUSI 3700 [0.5]</td>
<td>Cross-cultural Communication</td>
</tr>
<tr>
<td>4. 1.0 credit in (See Note 1, below):</td>
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</tr>
<tr>
<td>BUSI 4705 [0.5]</td>
<td>Ethics and Cross-cultural Interaction</td>
</tr>
<tr>
<td>BUSI 4709 [0.5]</td>
<td>Strategic Management for International Business (See Note, below)</td>
</tr>
<tr>
<td>5. 1.5 credits from (See Note 2, below):</td>
<td></td>
</tr>
<tr>
<td>BUSI 3703 [0.5]</td>
<td>International and Comparative Management</td>
</tr>
<tr>
<td>BUSI 3704 [0.5]</td>
<td>The Environment of International Business</td>
</tr>
<tr>
<td>BUSI 3706 [0.5]</td>
<td>International Business Negotiations</td>
</tr>
<tr>
<td>BUSI 4707 [0.5]</td>
<td>Regionalism and Globalization</td>
</tr>
<tr>
<td>BUSI 4710 [0.5]</td>
<td>International New Ventures</td>
</tr>
<tr>
<td>BUSI 4717 [0.5]</td>
<td>Managing Globalization in Emerging Economies</td>
</tr>
<tr>
<td>- An approved 3000-level or higher course in International Business taken during the year abroad at one of Carleton's approved exchange partner institutions</td>
<td></td>
</tr>
<tr>
<td>6. 1.5 credits in (See Note 3, below):</td>
<td></td>
</tr>
<tr>
<td>BUSI/ECON at the 2000-level or above</td>
<td></td>
</tr>
<tr>
<td>7. 1.0 credit in:</td>
<td></td>
</tr>
<tr>
<td>BUSI at the 3000-level or above</td>
<td></td>
</tr>
<tr>
<td>8. 1.0 credits in BUSI at the 4000-level</td>
<td></td>
</tr>
<tr>
<td>B. Credits Included in the Core CGPA (4.0 credits)</td>
<td></td>
</tr>
<tr>
<td>4.0 credits in one of French, German, Japanese, Mandarin, or Spanish</td>
<td></td>
</tr>
<tr>
<td>C. Credits Not Included in the Major or Core CGPA (3.5 credits):</td>
<td></td>
</tr>
<tr>
<td>10. 3.5 credits in free electives (see Notes 4 and 6, below)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits** | 20.0

**Notes:**

1. For Item 4 above, BUSI 4705 and BUSI 4709 must be taken at the Sprott School of Business.

2. For Item 5 above:
   a) Students without a Concentration must choose 2.5 credits from the list in Item 5.
   b) Students in Concentration in International Marketing and Trade must choose among BUSI 3706, BUSI 4707, BUSI 4710 and BUSI 4717 from the list in Item 5.
   c) Students in Concentration in International Strategy and Human Resources Management must choose among BUSI 3704, BUSI 3706, BUSI 4710 and BUSI 4717 from the list in Item 5.
   d) Students in Concentration in Global Financial Management and Systems must choose among BUSI 3704, BUSI 4707, BUSI 4710 and BUSI 4717 from the list in Item 5.

3. For Items 6, 7, and 8 above, students without a Concentration must satisfy these requirements:
   a) 1.0 credit from all courses listed in Item 1 of all Concentrations
   b) 1.0 credit from all courses listed in Item 2 of all Concentrations
   c) 1.0 credit from all courses listed in Item 3 of all Concentrations

4. The following courses cannot be used as free electives toward the B.I.B. degree: ESLA 1300, ESLA 1500, any course at the 0000-level including MATH 0007 (no longer offered), MATH 0107, and MATH 0009.

5. For Item 9 above, students who successfully test out of 4.0 credits in a language will choose an additional bundle of 4.0 elective credits approved by Sprott. Students who test out will not receive an APE on their CORE CGPA.

6. For Item 10 above, students may use BUSI 3701 and BUSI 3702 towards their free electives if they successfully complete an internship while abroad.

**Concentrations in the B.I.B. Program**

Concentrations described below are open to students registered in the B.I.B. program. Students enrolled in a concentration must satisfy the requirements for Bachelor of International Business (above) while gaining credit for the requirements of the Concentration through appropriate choice of courses. The order in which the courses listed for the Concentrations are taken should be planned in advance. Students are therefore strongly advised to consider their concentration choices by the end of their first year.

Courses taken at a foreign university during the year abroad must correspond to those below or, if different, be subject to evaluation and approval by the Eric Sprott School of Business.
### Concentration in International Marketing and Trade (4.0 credits)

1. **2.0 credits in:**
   - BUSI 3705 [0.5] International Buyer Behaviour
   - BUSI 4205 [0.5] International Marketing Strategy
   - BUSI 4708 [0.5] International Expansion and Operations
   - ECON 3601 [0.5] Introduction to International Trade

2. **1.0 credit from:**
   - BUSI 3204 [0.5] Digital Marketing
   - BUSI 3205 [0.5] Marketing Communications
   - BUSI 3207 [0.5] Marketing Research
   - BUSI 3208 [0.5] Business-to-Business Marketing
   - BUSI 3209 [0.5] Consumer Behaviour
   - BUSI 4203 [0.5] Marketing In Not-for-Profit Organizations
   - BUSI 4208 [0.5] Marketing Management
   - BUSI 4209 [0.5] Consumer Culture Theory
   - BUSI 4229 [0.5] Marketing in the Arts and Culture Sectors

   0.5 credit of approved 3000-level or higher non-international course(s) in Marketing taken during the year abroad at one of Carleton’s approved exchange partner institutions

3. **1.0 credit from:**
   - ECON 3602 [0.5] International Monetary Problems
   - ECON 3807 [0.5] European Economic Integration
   - ECON 3808 [0.5] The Economics of Transition
   - ECON 3870 [0.5] Comparative Economic Systems
   - ECON 4508 [0.5] International Aspects of Economic Development
   - ECON 4601 [0.5] International Trade Theory and Policy
   - ECON 4602 [0.5] International Monetary Theory and Policy
   - GEOG 2200 [0.5] Global Connections
   - GEOG 2300 [0.5] Space, Place and Culture
   - GEOG 3404 [0.5] Geographies of Economic Development
   - LAWS 3207 [0.5] International Transactions
   - LAWS 3208 [0.5] International Trade Regulation
   - PSCI 2601 [0.5] International Relations: Global Politics
   - PSCI 2602 [0.5] International Relations: Global Political Economy
   - PSCI 3600 [0.5] International Institutions
   - PSCI 3601 [0.5] Introduction to International Trade

   1.0 credit of 2000-level or higher international non-business course(s) taken during the year abroad at one of Carleton’s approved exchange partner institutions

### Total Credits 4.0

### Concentration in Global Financial Management and Systems (4.0 credits)

1. **2.0 credits in:**
   - BUSI 4504 [0.5] International Finance
   - BUSI 4505 [0.5] Global Financial Markets and Institutions
   - BUSI 4515 [0.5] Micro Finance
   - ECON 3602 [0.5] International Monetary Problems

2. **0.5 credit in:**
   - BUSI 3512 [0.5] Derivatives

3. **0.5 credit from:**
   - 0.5 credit of approved 3000-level or higher course(s) in Global Financial Management taken during the year abroad at one of Carleton’s approved exchange partner institutions
   - BUSI 3500 [0.5] Applied Corporate Finance

### Total Credits 4.0
Management.

Students are required to present a Minor CGPA of 6.50 or higher at graduation in order to be awarded a Minor in Arts Management. Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

The following requirements must be satisfied:

1. **3.5 credits in:**
   - BUSI 1003 [0.5] Survey of Accounting
   - BUSI 2121 [0.5] Introduction to Organizational Behaviour
   - BUSI 2204 [0.5] Basic Marketing
   - BUSI 2503 [0.5] Introduction to Finance
   - BUSI 2800 [0.5] Entrepreneurship

2. **0.5 credit from:**
   - BUSI 3500 [0.5] Advanced Corporate Finance
   - BUSI 4502 [0.5] Portfolio Management
   - BUSI 4510 [0.5] Mergers and Acquisitions
   - BUSI 4511 [0.5] Fixed Income Analysis

3. **0.5 credit from:**
   - ECON 3360 [0.5] Introduction to Labour Economics
   - ECON 3601 [0.5] Introduction to International Trade
   - ECON 3807 [0.5] European Economic Integration
   - ECON 3808 [0.5] The Economics of Transition
   - ECON 3870 [0.5] Comparative Economic Systems
   - ECON 4508 [0.5] International Aspects of Economic Development
   - ECON 4601 [0.5] International Trade Theory and Policy
   - ECON 4602 [0.5] International Monetary Theory and Policy
   - PSCI 2601 [0.5] International Relations: Global Politics
   - PSCI 2602 [0.5] International Relations: Global Political Economy
   - PSCI 3600 [0.5] International Institutions
   - PSCI 3703 [0.5] Governing in the Global Economy
   - PSCI 4603 [0.5] Analysis of International Political Economy
   - PSCI 4604 [0.5] Selected Problems in International Political Economy
   - PSCI 4805 [0.5] Political Economy of Global Money and Finance

4. **1.0 credit from:**
   - BUSI 3502 [0.5] Investments
   - BUSI 3601 [0.5] Management Accounting
   - BUSI 4129 [0.5] Managing the Arts
   - BUSI 4229 [0.5] Marketing in the Arts and Culture Sectors

5. **2.0 credits in:**
   - BUSI 1402 [0.5] Introduction to Business Information and Communication Technologies
   - BUSI 2301 [0.5] Introduction to Supply and Operations Management
   - BUSI 2400 [0.5] Foundations of Information Systems
   - BUSI 3102 [0.5] Introduction to Human Resources Management
   - BUSI 3104 [0.5] Managing Individual Performance
   - BUSI 3105 [0.5] Managing and Motivating Teams
   - BUSI 3106 [0.5] Managing Conflict and Negotiation
   - BUSI 3117 [0.5] Developing Creative Thinking
   - BUSI 3204 [0.5] Digital Marketing
   - BUSI 3205 [0.5] Marketing Communications
   - BUSI 3810 [0.5] Business Development
   - BUSI 3820 [0.5] Practicum in Business Design
   - BUSI 4205 [0.5] International Marketing Strategy
   - BUSI 4112 [0.5] Organizational Leadership
   - ARTH 3705 [0.5] Selected Museum Exhibition
   - ARTH 4705 [0.5] Seminar: Selected Museum Exhibition
   - FILM 2101 [0.5] The Film Industry
   - MUSI 3403 [0.5] Music Industries

Total Credits: **4.5**

**Minor in Business (4.0 credits)**

Only students pursuing undergraduate programs (except B.Com. and B.I.B.) requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 7.00 may be admitted to Minor in Business. Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 6.50 or higher at graduation in order to be awarded a Minor in Business.

Requirements:

1. **1.0 credit from:**
   - BUSI 1003 [0.5] Survey of Accounting
   - BUSI 1001 [0.5] Principles of Financial Accounting

2. **2.0 credits in:**
   - BUSI 2121 [0.5] Introduction to Organizational Behaviour
   - BUSI 2204 [0.5] Basic Marketing
### Minor in Business for Bachelor of Engineering (4.0 credits)

Only students pursuing undergraduate Bachelor of Engineering programs who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 5.00 may be admitted to Minor in Business for Bachelor of Engineering.

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 6.50 or higher at graduation in order to be awarded a Minor in Business for Bachelor of Engineering.

#### Requirements:

1. **2.5 credits in:**
   - BUSI 1003 [0.5] Survey of Accounting
   - BUSI 2121 [0.5] Introduction to Organizational Behaviour
   - BUSI 2204 [0.5] Basic Marketing
   - BUSI 2301 [0.5] Introduction to Supply and Operations Management
   - BUSI 2503 [0.5] Introduction to Finance

2. **1.5 credits from:**
   - BUSI 2400 [0.5] Foundations of Information Systems
   - BUSI 2703 [0.5] Introduction to International Business
   - BUSI 2800 [0.5] Entrepreneurship
   - BUSI 3103 [0.5] Introduction to Organization Theory
   - BUSI 3309 [0.5] Project Management
   - BUSI 4105 [0.5] Managing Change

3. The remaining requirements of the major discipline(s) must be satisfied.

### Total Credits

4.0

### Minor in Human Resources and Management for B.A. Honours Psychology (5.0 credits)

Only students pursuing Bachelor of Arts Honours with a Major in Psychology who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 7.00 may be admitted to Minor in Human Resources and Management. Students must successfully complete PSYC 2801 prior to entry in to the Minor, with a minimum grade of B+. PSYC 3801 must be successfully completed prior to taking any of the 4000-level BUSI courses listed in the Minor. Enrolment is limited.

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 6.50 or higher at graduation in order to be awarded a Minor in Human Resources and Management for B.A. Honours Psychology.

#### Requirements:

1. **1.0 credit in:**
   - PSYC 2801 [0.5] Organizational Psychology I
   - PSYC 3801 [0.5] Organizational Psychology II

2. **1.0 credits in:**
   - BUSI 3102 [0.5] Introduction to Human Resources Management
   - BUSI 3103 [0.5] Introduction to Organization Theory

3. **2.0 credits from:**
   - BUSI 3104 [0.5] Managing Individual Performance
   - BUSI 3105 [0.5] Managing and Motivating Teams
   - BUSI 3106 [0.5] Managing Conflict and Negotiation
   - BUSI 4104 [0.5] Strategic Human Resources Management
   - BUSI 4105 [0.5] Managing Change
   - BUSI 4112 [0.5] Organizational Leadership

4. **0.5 credit in:**
   - BUSI 2204 [0.5] Basic Marketing

5. **0.5 credit from:**
   - BUSI 2800 [0.5] Entrepreneurship
   - BUSI 3209 [0.5] Consumer Behaviour

### Total Credits

5.0
Post-Baccalaureate Diploma in Accounting (4.5 credits)

Normally, students are required to have completed an undergraduate degree with a minimum B-average or higher, and have completed BUSI 1004 and BUSI 1005 (or equivalent) with a grade of C or higher.

Requirements:

1. 4.5 credits in:
   - BUSI 2001 [0.5] Intermediate Accounting I
   - BUSI 2002 [0.5] Intermediate Accounting II
   - BUSI 2005 [0.5] Income Tax Fundamentals
   - BUSI 2503 [0.5] Introduction to Finance
   - BUSI 3001 [0.5] Accounting for Business Combinations
   - BUSI 3007 [0.5] Auditing I
   - BUSI 3008 [0.5] Intermediate Management Accounting and Control
   - BUSI 3629 [0.5] Corporate Governance and Strategy
   - BUSI 4008 [0.5] Advanced Management Accounting and Control

Total Credits 4.5

Regulations

In addition to the program requirements described here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Students should consult with the School when planning their program and selecting courses.

Academic Performance Evaluation

Students in B.Com. and B.I.B. are Honours students. Students in programs of the Eric Sprott School of Business who are not in Good Standing (GS) at any Academic Performance Evaluation will be assigned either Academic Warning (AW) or Continue in Alternate (CA). Students assigned CA will be required to leave the program. Students assigned AW must achieve GS at their next Academic Performance Evaluation or they will be required to withdraw from the program with either the standing Continue in Alternate (CA) or Dismissed from the Program (DP).

Graduation

Bachelor of Commerce

- A B.Com. (Honours) student who meets all of the Overall CGPA requirement of 5.0, the Major CGPA graduation requirement of 6.5, and the Concentration CGPA graduation requirement of 6.5 will graduate with B.Com Honours with a concentration notation
- A B.Com. (Honours) student who meets both the Overall CGPA requirement of 5.0 and the Major CGPA graduation requirement of 6.5, but not the Concentration CGPA graduation requirement of 6.5 will graduate with B.Com Honours without a concentration notation
- A B.Com. (Honours) student who meets the Overall CGPA graduation requirement of 5.0 and a Major CGPA of 5.0, regardless of the Concentration CGPA will graduate with B.Com with neither a concentration nor an Honours notation

Bachelor of International Business

- A BIB student who meets all of the Overall CGPA requirement of 5.0, the Major CGPA requirement of 6.5, the Core CGPA requirements of 6.5, and the Concentration CGPA requirement of 6.5 will graduate with BIB Honours with a concentration notation
- A BIB student who meets the Overall CGPA requirement of 5.0, the Major CGPA requirement of 6.5 and Core CGPA requirement of 6.5, but not the Concentration CGPA requirement of 6.5 will graduate with BIB Honours without a concentration notation
- A BIB student who meets the Overall CGPA requirement of 5.0 but not the Major CGPA requirement of 6.5 or the Core CGPA requirement of 6.5 will be transferred in to the B.Com with neither a concentration nor an Honours notation and will then follow the appropriate graduation path as laid out in the B.Com requirements

Academic Performance Evaluation for Bachelor of Commerce

Students in B.Com. are Honours students.

Students may not continue into 3000-level or higher BUSI courses unless the following two minimum requirements are met:

1. Successful completion of BUSI 1800
2. Successful completion of BUSI 2800

B.Com. students are in Good Standing (GS) if they meet the minimum requirement schedule provided in Regulation 3.2.7.

A B.Com. student not in Good Standing (GS) due to a deficiency of 1.0 grade point or less in either the Overall or Major CGPA requirements is on Academic Warning (AW). A B.Com. student is required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP) if:

1. they are not in Good Standing due to a deficiency of more than 1.0 grade point in their Overall and/or Major CGPA requirements at any Academic Performance Evaluation, or
2. the student was on Academic Warning and does not achieve Good Standing at the next Academic Performance Evaluation.

Academic Performance Evaluation for Bachelor of International Business

Students in B.I.B. are Honours students.

B.I.B. Students are in Good Standing (GS) if they meet the minimum requirement schedule provided below. The B.I.B. defines a Language Core consisting of the required 4.0 credits in the language of specialization.

Good Standing in BIB requires:

At the first APE:
• Overall CGPA at least 4.50
• Major CGPA at least 6.00
• Language Core CGPA at least 6.00

At all subsequent APES and at graduation:
• Overall CGPA at least 5.00
• Major CGPA at least 6.50
• Language Core CGPA at least 6.50

A B.I.B. student who is not in Good Standing (GS) due to a deficiency of 1.0 grade point or less in any of the Overall, Major, or Language Core CGPA requirements, is on Academic Warning.

A B.I.B. student is required to leave the program with either the status Continue in Alternate (CA) or the status Dismissed from Program (DP) if:
• They are not in Good Standing (GS) due to a deficiency of more than one grade point in either the Overall, Major, or Language Core CGPA requirements at any Academic Performance Evaluation, or
• The student is on Academic Warning and does not achieve Good Standing at the next Academic Performance Evaluation.

Regulations

Post-Baccalaureate Diploma
In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition
A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:
• qualify a candidate for consideration for entry into a master’s program, or
• bring a candidate who already possesses a bachelor’s degree up to a level of a bachelor’s degree of 20.0 credits or more in another discipline, or
• provide a candidate who already possesses a twenty-credit bachelor’s degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
• provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements
• A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
• A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement
In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation
All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation
• A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
• A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
• Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.
Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database.
Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**Bachelor of Commerce Honours: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Have a major CGPA of 8.00 or higher and an overall CGPA of 6.50 or higher;
2. Successfully completed 6.0 credits in the major and have at least 6.0 credits remaining for completion of the B.Com. program prior to their first work term;
3. Registered as a full-time student in the Bachelor of Commerce program.

To obtain the co-op designation students must successfully complete three (3) work terms.

**Co-op Work Term Course: BUSI 3999**

**Work/Study Patterns:**

**Accounting**

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**Finance, International Business, Marketing, Supply Chain, and students without a concentration**

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**Information Systems, Management**

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**Legend**

S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as **recommended** are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degree**

- Bachelor of Commerce (B.Com.) (Honours)
- Bachelor of Commerce (B.Com.)

**Admission Requirements**

**First Year**

**Bachelor of Commerce (B.Com.) (Honours)**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English, Advanced Functions, and Calculus and Vectors. Applicants who do not present with Calculus and Vectors must successfully complete MATH 0009 at Carleton in the Fall semester of first year in order to be eligible to continue.

For applicants whose first language is not English, the requirement of 4U English can also be met under the conditions outlined in the English Language Requirements of the Admissions Requirements and Procedures section of this Calendar.

**Bachelor of Commerce (B.Com.)**

No direct entry, access is restricted.

**Advanced Standing**

**Bachelor of Commerce (B.Com.) (Honours)**

Applications for admission to the second or subsequent years will be assessed on their merits. Students must present a major CGPA of 6.50 (C+/B-) or higher, and an overall CGPA of 8.00 (B) or higher. Advanced standing will be granted only for those courses that are determined to be appropriate. Students will not receive credit for courses graded below C-.

Current Carleton students may also be assessed for admission to second and subsequent years if they present BUSI 1001 and BUSI 1002 with an average of 8.0 or higher (with no individual grade below C+) and a major CGPA of 6.50 (C+/B-) or higher.
Applications by B.I.B. (Honours) students for admission to the second or subsequent years of B.Com. (Honours) will be assessed on their merits. Students must present a major CGPA and an overall CGPA consistent with the Academic Performance Evaluation requirements for B.Com. (Honours) students. Advanced standing will be granted for those courses determined to be appropriate.

**Bachelor of Commerce (B.Com.)**
No direct entry. Access is restricted to students in the Bachelor of Commerce (Honours) and Bachelor of International Business (Honours). (See Regulations for Business.)

**Co-op Option**
Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Commerce (Honours) program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Admissions Information**
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degree**
- Bachelor of International Business (B.I.B.) (Honours)

**Admission Requirements**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English, Advanced Functions, and Calculus and Vectors. Applicants who do not present with Calculus and Vectors must successfully complete MATH 0009 at Carleton in the Fall semester of first year in order to be eligible to continue.

For applicants whose first language is not English, the requirement of 4U English can also be met under the conditions outlined in “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

**Advanced Standing**
Applications for admission to second and subsequent years will be assessed on their merits, subject to available spaces. Advanced standing will be granted only for those courses that are determined to be appropriate. Students must present an Overall CGPA of 8.0 (equivalent to B average) or better. Students will not receive credit for courses with grades below C-.

Applications by B.Com. students for admission to the second or subsequent years of B.I.B. will be assessed on their merits. Students must present a major CGPA and an overall CGPA consistent with the Academic Performance Evaluation requirements for B.I.B. students. Advanced standing will be granted for those courses determined to be appropriate.

The design of the B.I.B. program is premised on a full year of study abroad (at third year) after the preparations leading to it are successfully completed at Carleton. Students who are admitted with advanced standing may need to delay the third-year abroad requirements until first and second year curricula are completed and consequently delay graduation.

Some transferred credits (normally electives) may have to be forfeited in order to meet the Third-year Study Abroad Requirement of minimum 4.0 credits completed during year abroad.

**Admissions Information**
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by
program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma
- Post-Baccalaureate Diploma in Accounting

Normally, students are required to have completed an undergraduate degree with a minimum B- average or higher, and have completed BUSI 1004 and BUSI 1005 (or equivalent) with a grade of C or higher.

Business (BUSI) Courses

Notes:
1. Some Business courses are open to students in select programs only. Please refer to the current BUSI Course Priority List found at: sprott.carleton.ca/registration
2. B.Com. and B.I.B. students should use Business (BUSI) prefix for registering in courses that are cross-listed.
3. Not all courses listed are offered in a given year; consult the class schedule at central.carleton.ca for a list of current course offerings.

BUSI 1001 [0.5 credit]
Principles of Financial Accounting
Discussion of the concepts of asset valuation and income measurement underlying the preparations and interpretation of financial statements.
Precludes additional credit for BUSI 1003 and BUSI 1004.
Prerequisite(s): second-year standing, or permission of the Sprott School of Business.
Lecture three hours a week.

BUSI 1002 [0.5 credit]
Management Accounting
An introduction to the use of accounting data for the purposes of planning and control of operations.
Precludes additional credit for BUSI 1003 and BUSI 1005.
Prerequisite(s): second-year standing and BUSI 1001, or permission of the Sprott School of Business.
Lecture three hours a week.

BUSI 1003 [0.5 credit]
Survey of Accounting
Introduction to accounting information, the basic accounting cycle, and consideration of selected financial statement topics. Analysis of cost behavior and the uses and limitations of accounting information in planning, controlling and decision-making processes.
Precludes additional credit for BUSI 1001, BUSI 1002, BUSI 1004 and BUSI 1005. No credit for students in B.Com., B.I.B or B.Econ. (Honours Economics, Concentration in Financial Economics).
Lecture three hours a week.

BUSI 1004 [0.5 credit]
Financial Accounting for Business Students
Introduction to accounting for business organizations. The student will be introduced to the accounting process and the preparation and analysis of the balance sheet, income statement, and cash flow statement.
Precludes additional credit for BUSI 1001 and BUSI 1003.
Prerequisite(s): BUSI 1701 or BUSI 1800. Restricted to B.Com. and B.I.B. students.
Lectures three hours a week.

BUSI 1005 [0.5 credit]
Managerial Accounting for Business Students
Introduction to the development and use of accounting information within a business organization for effective management including: planning, directing, motivating, and controlling activities and behaviours.
Precludes additional credit for BUSI 1002 and BUSI 1003.
Prerequisite(s): BUSI 1004. Restricted to B.Com. and B.I.B. students.
Lectures three hours a week.

BUSI 1402 [0.5 credit]
Introduction to Business Information and Communication Technologies
Introduction to ICT in organizations. Topics may include spreadsheets, databases, statistical software, website design and implementation, collaboration software including wikis, blogs and social networking, GPS, m-Commerce.
Lectures three hours a week.

BUSI 1701 [0.5 credit]
Introduction to International Business
Introduction to the principles and practices of international business. Topics include the impact of culture and the political, economic, and legal systems on global strategy, international institutions, theories of cross-border trade, and the characteristics and effects of regional trade blocs.
Precludes additional credit for BUSI 2701, BUSI 2703.
Prerequisite(s): restricted to B.I.B. students.
Lectures three hours and tutorial one hour a week.

BUSI 1800 [0.5 credit]
Introduction to Business
Introduction to contemporary businesses in a complex economy, their role in the society, their history. The various functions that come together to define a business will be examined. All forms of business communications emphasized.
Prerequisite(s): restricted to B.Com. students with first-year or second-year standing.
Lectures three hours and tutorial one hour a week.
BUSI 1801 [0.5 credit]
Foundations of Business
Introduction to contemporary businesses in a complex economy and their role in the society. An overview of the various functions that come together to define a business will be examined. Precludes additional credit for BUSI 1800. No credit in B.Com. or B.I.B programs. Lectures three hours a week.

BUSI 1995 [0.0 credit]
Employability Passport I
An introduction to the knowledge and tools required for a career in Business. Includes: Experiential Learning Activity Prerequisite(s): Restricted to students registered in B.Com. or B.I.B. Participation in employability events and initiatives throughout the year.

BUSI 2001 [0.5 credit]
Intermediate Accounting I
An examination of accounting and reporting issues related primarily to asset valuation and revenue recognition. Prerequisite(s): BUSI 1001 and BUSI 1002, or BUSI 1004 and BUSI 1005 with a grade of C or higher in each. Lecture three hours a week.

BUSI 2002 [0.5 credit]
Intermediate Accounting II
An examination of accounting and reporting issues related primarily to liabilities and equities. Precludes additional credit for BUSI 2506. Prerequisite(s): BUSI 2001, and BUSI 2504 or BUSI 2503 with a grade of C or higher in each. Lecture three hours a week.

BUSI 2005 [0.5 credit]
Income Tax Fundamentals
A foundation course that aims to introduce the fundamental concepts of income tax laws and regulations as significant elements in the planning and decision making process of taxpayers and managers. Problems, issues and planning associated with the Income Tax Act are discussed. Precludes additional credit for BUSI 3005 and BUSI 4005. Prerequisite(s): BUSI 1001 or BUSI 1004 with a grade of C- or higher. Lecture three hours a week.

BUSI 2101 [0.5 credit]
Organizational Behaviour
Models of individual and small group behaviour in organizations. Topics include motivation, communication, job design, leadership and group dynamics to provide systematic explanations of employee and managerial behaviour in organizations. Precludes additional credit for BUSI 2121, BUSI 2702, BUSI 3602. Prerequisite(s): second-year standing. Restricted to B.Com. students. Lectures three hours, and tutorial one and a half hours a week.

BUSI 2121 [0.5 credit]
Introduction to Organizational Behaviour
Individual and small group behaviors in organizations and management of the same. Precludes additional credit for BUSI 2101, BUSI 2702, BUSI 3602. Prerequisite(s): second-year standing. Lecture three hours a week.

BUSI 2204 [0.5 credit]
Basic Marketing
Basic problems and practices in marketing. Marketing planning tools and strategies of firms. Precludes additional credit for BIT 2002 and BUSI 2208. Lecture three hours a week.

BUSI 2208 [0.5 credit]
Introduction to Marketing
Overview of the marketing function within the firm. Introduction to key marketing concepts and principles; business environment analysis, strategic decision making (segmentation, targeting, positioning), marketing mix planning (product, price, place promotion). Analysis of marketing problems using cases and major project. Includes: Experiential Learning Activity Precludes additional credit for BUSI 2204. Prerequisite(s): BUSI 1004, ECON 1001 and ECON 1002 (or ECON 1000) and one of BUSI 1701, PSYC 1002, SOCI 1005. Restricted to B.Com. or B.I.B. students. Lecture three hours a week.

BUSI 2301 [0.5 credit]
Introduction to Supply and Operations Management
Concepts, models, and managerial issues in planning, designing, operating and controlling systems across supply chains for the provision of goods and services. Emphasis on basic ideas and tools. Precludes additional credit for BUSI 3300 (no longer offered). Prerequisite(s): second-year standing. Restricted to selected Sprott programs. Lecture three hours a week.
BUSI 2400 [0.5 credit]
Foundations of Information Systems
This course helps students understand the critical role of information systems in organizations and their impact on social and ethical issues. Covers fundamental tools and skills for the development and management of information systems and business analytics in organizations. Lecture three hours a week.

BUSI 2402 [0.5 credit]
Business Applications Development
Introduction to programming. Fundamentals of structured and object-oriented programming using an OO programming language. Treatment of objects, abstraction and inheritance, event-driven programming, iteration, sequence and selection. Consideration of algorithms for searching, sorting, string processing and numerical analysis. Emphasis on the development of business applications. Precludes additional credit for COMP 1006 and COMP 1406. Prerequisite(s): second-year standing. Lecture three hours and tutorial one hour a week.

BUSI 2503 [0.5 credit]
Introduction to Finance
Basic issues and practices in finance. Survey of business firms' financing, investment, and payout decisions. Emphasis on understanding the principals, resources and trade-offs in the financial area of a business. Precludes additional credit for BUSI 2504 and ECON 3050. No credit for students in B.Com., BIB or B.Econ. (Honours Economics, Concentration in Financial Economics). Prerequisite(s): second-year standing. Lecture three hours a week.

BUSI 2504 [0.5 credit]
Business Finance I
Business firms' financing, capital investment, and dividend policy decisions, cost of capital and short-term asset management problems. Precludes additional credit for BUSI 2503, ECON 3050. Prerequisite(s): BUSI 1005, and ECON 1001 and ECON 1002 (or ECON 1000) or ECOR 3800. Restricted to selected Sprott programs. Lecture three hours and tutorial one hour a week.

BUSI 2505 [0.5 credit]
Business Finance II
Capital investment and financing decisions in the context of risk and return tradeoffs. Primary and derivative securities, and their role in risk management. Mergers, corporate restructuring, the theory of principal-agent relationships, and financial planning, forecasting, and control. Prerequisite(s): BUSI 1002 or BUSI 1005, BUSI 2504 with a grade of C or higher in each; ECON 1001 and ECON 1002 (or ECON 1000) and MATH 1009 with a grade of C- or higher in each. Lecture three hours a week.

BUSI 2506 [0.5 credit]
Financial Statement Analysis
Analysis and interpretation of an entity's financial statements and annual report from a user perspective. Ratio analysis is used to analyze firm performance and make forecasts of future performance. Precludes additional credit for BUSI 2002. Prerequisite(s): BUSI 2504 with a grade of C or higher. Lectures three hours a week.

BUSI 2601 [0.5 credit]
Business Law
The legal system and legal ordering as they affect those engaged in business activities. Emphasis on the law of tort, law of contract, agency and bailment, business associations (partnerships/proprietorships/corporations) and real estate. Lecture three hours a week.

BUSI 2701 [0.5 credit]
Fundamentals of International Business
Introduction to the context and operation of international business. Topics include international trade theory, trade agreements and blocs, international finance, global marketing, international human resource management and global strategy. Precludes additional credit for BUSI 1701, BUSI 2703. Prerequisite(s): BUSI 1800. Lecture three hours a week.

BUSI 2702 [0.5 credit]
Introduction to International Management
Applies principles of organizational behavior and organizational theory to the operations of international businesses. Includes discussion of appropriate strategies and structures. Introduces concepts of cross-cultural communication. Precludes additional credit for BUSI 2101, BUSI 2121, BUSI 3602. Prerequisite(s): second-year standing in B.I.B. and BUSI 1701. Lectures three hours a week.

BUSI 2703 [0.5 credit]
Introduction to International Business
Introduction to contemporary businesses in a complex economy, their role in society and their history. Examination of the various functions that come together to define a business with an emphasis on all forms of business communications. Precludes additional credit for BUSI 1701, BUSI 2701. Prerequisite(s): second-year standing. No credit for students in B.Com. or BIB. Lectures three hours per week.
BUSI 2800 [0.5 credit]  
**Entrepreneurship**  
Overview of the basics of entrepreneurship, with emphasis on idea generation and identification, team building, business models, initial strategies and feasibility. A number of organization types will be studied.  
Prerequisite(s): BUSI 1800 or BUSI 1801 and second-year standing.  
Lecture three hours a week.

BUSI 2995 [0.0 credit]  
**Employability Passport II**  
An intermediate course in the knowledge and tools required for a career in Business.  
Includes: Experiential Learning Activity  
Prerequisite(s): BUSI 1995.  
Participation in employability events and initiatives throughout the year.

BUSI 3001 [0.5 credit]  
**Accounting for Business Combinations**  
Accounting problems associated with business combinations, with attention to the preparation of consolidated financial statements. Discussion may extend to financial reporting and diversified companies, reorganizations, etc. Selection of topics may vary from year to year.  
Prerequisite(s): BUSI 2002 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 3005 [0.5 credit]  
**Taxation I**  
Federal income tax laws and regulations and their impact on an individual's financial and business decisions. Problems, issues and planning associated with the Income Tax Act and concerned with the computation of taxable income and taxes payable by an individual are discussed.  
Precludes additional credit for BUSI 2005.  
Prerequisite(s): BUSI 2001 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 3007 [0.5 credit]  
**Auditing I**  
Auditing theory, methodology and application.  
Precludes additional credit for BUSI 4007 (no longer offered).  
Prerequisite(s): BUSI 2001.  
Lecture three hours a week.

BUSI 3008 [0.5 credit]  
**Intermediate Management Accounting and Control**  
The use of accounting information for cost control and performance evaluation. Emphasis is on cost accumulation systems, performance evaluation, control models and analytical tools.  
Prerequisite(s): BUSI 1002 or BUSI 1005 with a grade of C- or higher in each.  
Lecture three hours a week.

BUSI 3040 [0.5 credit]  
**Data Analytics and Information Systems for Accounting**  
Data analysis in accounting, working with and making sense of big data using various data analysis tools. Specific topics include: data collection, cleaning, analyzing, visualization, and decision making in different areas of accounting.  
Includes: Experiential Learning Activity  
Prerequisite(s): BUSI 2400 and BUSI 3007 with a grade of C- or higher in each.  
Lecture three hours a week.

BUSI 3102 [0.5 credit]  
**Introduction to Human Resources Management**  
Human Resource Management function in large formal organizations. Topics include human resources planning, recruitment, selection, performance evaluation, career development and training, compensation and benefits and the role of the professional personnel manager.  
Prerequisite(s): second-year standing and one of BUSI 2101, BUSI 2121, BUSI 2702, BUSI 3602, or PSYC 2801.  
Lectures three hours a week.

BUSI 3103 [0.5 credit]  
**Introduction to Organization Theory**  
Macro-organization theory. Structuring of organizations in a complex global economy. Effects of the external environment, technology, culture and organizational goals on the structure, processes and effectiveness of the organization.  
Prerequisite(s): second-year standing and one of BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801.  
Lectures three hours a week.

BUSI 3104 [0.5 credit]  
**Managing Individual Performance**  
Managing the performance of self and others. Topics include self awareness, motivation, leadership, communication, diversity, and creativity. Extensive use is made of self-assessments and experiential learning.  
Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 with a grade of C or higher.  
Lecture three hours a week.

BUSI 3105 [0.5 credit]  
**Managing and Motivating Teams**  
Principles of working in and managing teams. Topics include self-awareness, team formation, team development, team dynamics, team leadership and team motivation.  
Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 with a grade of C or higher.  
Lecture three hours a week.
BUSI 3106 [0.5 credit]
Managing Conflict and Negotiation
Analysis of the sources and forms of conflict and effective approaches to managing conflict. Exploration of the effectiveness of various strategies of negotiations.
Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3117 [0.5 credit]
Developing Creative Thinking
Increases student skills in areas beyond technical expertise, with a focus on the importance of fluidity, risk taking, and idea generation. Emphasis on creativity as a process, with exposure to various techniques and concepts including Design Thinking at multiple levels (individual, group, organization).
Prerequisite(s): third-year standing and one of BUSI 2101 or BUSI 2702 with a grade of C- or higher; or permission of the Sprott School of Business.
Lecture three hours a week.

BUSI 3119 [0.5 credit]
Business and Environmental Sustainability
Examining concepts of environmental sustainability within the business context. Exploring the complex interdependency between organizations, society and the natural environment.
Prerequisite(s): third year standing.
Lecture three hours a week.

BUSI 3204 [0.5 credit]
Digital Marketing
Introduction and assessment of key new marketing tools and approaches, including internet marketing, relationship marketing, direct marketing; effective adoption and implementation of these tools and approaches across industries and organizations.
Prerequisite(s): BUSI 2204 or BUSI 2208 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3205 [0.5 credit]
Marketing Communications
Promotion as communication process and marketing tool. Integrating advertising, direct/digital marketing, interactive media, sales promotion, public relations, personal selling through strategic planning (research, budgeting, organizing, creative and media strategy), execution, and campaign evaluation. Regulatory, ethical, social issues considerations.
Prerequisite(s): BUSI 2208 or BUSI 2204 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3207 [0.5 credit]
Marketing Research
Concepts essential for understanding and conducting applied marketing research. Methods for collecting, analyzing, and interpreting data relevant to marketing decision-making. Experience in research techniques through case studies, exercises and project.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3100.
Prerequisite(s): BUSI 2204 or BUSI 2208 with a grade of C or higher; STAT 2607 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3208 [0.5 credit]
Business-to-Business Marketing
Theories and practice of marketing in business-to-business markets with emphasis on high technology businesses, including strategic marketing management, buyer behaviour and competitive analysis, sales management, new product management, and international issues.
Prerequisite(s): BUSI 2204 or BUSI 2208 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3209 [0.5 credit]
Consumer Behaviour
Introduction to the application of psychological theories and methodologies to consumer behaviour. How consumer behaviour is shaped by internal influences. Topics include perception, learning, memory, motivation, affect, personality, the self, attitudes and decision-making.
Precludes additional credit for BUSI 4206 (no longer offered).
Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 with a grade of C or higher.
Lecture three hours a week.

BUSI 3301 [0.5 credit]
Supply Chain Management Strategies
Introduction to strategies in managing supply chain. Topics include strategies for planning and coordinating all activities involved in procurement, conversion, and channel management in the global environment.
Precludes additional credit for BUSI 4303 (no longer offered).
Prerequisite(s): second-year standing; BUSI 2301 with a grade of C or higher and STAT 2606 with a grade of C- or higher.
Lecture three hours a week.
**BUSI 3305 [0.5 credit]**
**Logistics and Transportation**
Overview of logistics and transportation concepts, their roles in creating supply chain value; warehousing and facilities management, packaging and material handling, network design, transportation fundamentals, managing logistics internationally, global transportation providers and intermediaries, performance metrics, trends in logistics and transportation.
Prerequisite(s): third-year standing; BUSI 2301 with a grade of C or higher, and STAT 2606 with a grade of C- or higher.
Lecture three hours a week.

**BUSI 3308 [0.5 credit]**
**Simulation Modeling and Analytics**
Concepts of computer simulation for predictive and prescriptive analytics through case studies, worked examples and hands-on projects. Emphasizes static simulations with spreadsheets, discrete-event, and agent-based simulations with specialized software. Input modeling, model design, experimental design, analysis of outputs.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing; BUSI 2301 with a grade of C or higher and STAT 2606 with a grade of C- or higher.
Lecture two hours and tutorial two hours a week.

**BUSI 3309 [0.5 credit]**
**Project Management**
Identification, selection, initiation, and organization of projects; risk assessment; project scheduling, performance monitoring and control, and termination. Emphasizes on foundations, principles and supporting techniques. Precludes additional credit for BUSI 4308.
Prerequisite(s): third-year standing, BUSI 2301 and STAT 2606.
Lecture three hours a week.

**BUSI 3400 [0.5 credit]**
**Data and Information Management**
Prerequisite(s): BUSI 2400 with a grade of C or higher.
Lecture three hours and tutorial one hour a week.

**BUSI 3401 [0.5 credit]**
**Applications Development for Online Environments**
Analysis, design and implementation of electronic business systems. Topics include advanced object-oriented programming, advanced SQL programming, XML, using ASP.NET, MTS and SQL Server. Precludes additional credit for BUSI 4401 (no longer offered).
Prerequisite(s): BUSI 2402 and BUSI 3400, or COMP 3005 (with a grade of C- or higher in each).
Lecture three hours a week.

**BUSI 3402 [0.5 credit]**
**Systems Analysis and Design**
Methods of analysis of computer-based information systems. The systems development life cycle, planning, analysis, design, implementation and maintenance. Structured and object-oriented methods will be used. Use of a CASE tool.
Precludes additional credit for SYSC 3100, BUSI 3403, (no longer offered) and BUSI 3404 (no longer offered).
Prerequisite(s): one of BUSI 2400, or COMP 2404, or SYSC 2004 (with a grade of C or higher).
Lecture three hours and tutorials one hour a week.

**BUSI 3405 [0.5 credit]**
**Enterprise Architecture**
Exploration of the significance of cross-functional business processes in the context of e-business transformation. Includes process analysis and modeling techniques. Also considers the application of enterprise resource planning systems, workflow technologies, intranets, and extranets to facilitate process flows inside and outside the organization.
Prerequisite(s): BUSI 2400 and BUSI 3103 with a grade of C- or higher.
Lecture three hours a week.

**BUSI 3500 [0.5 credit]**
**Applied Corporate Finance**
An examination of the major issues in corporate finance and applied financial management. Topics include: introduction to portfolio theory, the capital asset pricing model, cost of capital, capital structure and dividend policy, lease financing, capital budgeting under uncertainty, mergers and consolidations.
Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each.
Lecture three hours a week.

**BUSI 3502 [0.5 credit]**
**Investments**
Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each.
Lecture three hours a week.
BUSI 3512 [0.5 credit]  
**Derivatives**  
Derivative instruments and their use for speculation and hedging. Analysis of different markets where instruments trade, and their characteristics. Pricing models highlighted to determine how individuals and corporations can better manage risk; exotics and newer innovations.  
Precludes additional credit for BUSI 4512 (no longer offered).  
Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each.  
Lecture three hours a week.

BUSI 3600 [0.5 credit]  
**Entrepreneurial Strategies**  
Within the changing environment, an examination of entrepreneurial strategies related to different functional areas for new ventures and small businesses.  
Prerequisite(s): BUSI 2800 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 3602 [0.5 credit]  
**Designing Organizational Systems: An Overview**  
Key models and theories of organizational strategy, structure, processes, effectiveness, and individual and group behavior in organizations. Organizational structure, goals, and effectiveness; leadership, motivation and job design.  
Precludes additional credit for BUSI 2101, BUSI 2702, BUSI 2121. No credit for students in B.Com. or B.I.B. programs.  
Prerequisite(s): third-year standing in the B.P.A.P.M. program.  
Lecture three hours a week.

BUSI 3611 [0.5 credit]  
**Managing the Family Enterprise**  
How family businesses are different, what makes them different and how to effectively manage these differences. Challenges arising from the tension between family and business pressures from governance, management and succession planning perspectives.  
Prerequisite(s): BUSI 1005 or BUSI 1002, and BUSI 2101 or BUSI 2121 or BUSI 2702, and third year standing.  
Lecture three hours a week.

BUSI 3629 [0.5 credit]  
**Corporate Governance and Strategy**  
The role of governance in organizations. Mission and vision statements, values and objectives. Shaping, implementation and evaluation of corporate strategy. Management of risk and environmental analysis.  
Precludes additional credit for BUSI 4609, BUSI 4709. No credit in B.Com. or B.I.B. programs.  
Prerequisite(s): Enrolment in the Post-Baccalaureate Diploma in Accounting, or BUSI 1001 and BUSI 1002, or equivalents.  
Lecture three hours a week.

BUSI 3700 [0.5 credit]  
**Cross-cultural Communication**  
Principles of communication across cultural boundaries are applied to both interpersonal and commercial interactions. Critical incidents and commentary are analyzed. Students submit periodic reports, evaluated by the instructor at Carleton.  
Prerequisite(s): restricted to B.I.B. students who are participating in an academic exchange.  
Online course.

BUSI 3701 [0.5 credit]  
**Practicum in International Business I**  
Students will engage in an approved international experience, abroad or within Canada, that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.  
Includes: Experiential Learning Activity  
Precludes additional credit for BUSI 4719 and GINS 3930.  
Prerequisite(s): Third-year standing in BIB and permission of the Sprott School of Business.  
Experiential Learning Activity

BUSI 3702 [0.5 credit]  
**Practicum in International Business II**  
Students will engage in an approved international experience, abroad or within Canada, that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.  
Includes: Experiential Learning Activity  
Precludes additional credit for BUSI 4719 and GINS 3931.  
Prerequisite(s): third-year standing in BIB and permission of the Sprott School of Business.  
Experiential learning activity

BUSI 3703 [0.5 credit]  
**International and Comparative Management**  
The management of large organizations spanning national boundaries, including domestic firms with international markets, and multinational corporations. Difficulties of maintaining communication and control in international operations in disparate cultural settings.  
Prerequisite(s): second-year standing and BUSI 2101 or BUSI 2702 with a grade of C or higher.  
Lecture three hours a week.

BUSI 3704 [0.5 credit]  
**The Environment of International Business**  
Theories linking environmental factors and business strategy as a basis for study of some major factors and institutions shaping international business strategy. International trade patterns, regionalization, shifts in international finance, research and development and transnational data flows.  
Prerequisite(s): third-year standing, and BUSI 2101 or BUSI 2702 with a grade of C or higher; and ECON 1001 and ECON 1002 (or ECON 1000) with a grade of C- or higher in each.  
Lecture three hours a week.
BUSI 3705 [0.5 credit]
International Buyer Behaviour
Behaviour of end-consumers, business and government buyers, and investors in the international context. National, cross-national, and subnational segments and behaviour differences. Adaptation vs. standardisation strategies in the context of socio-psychological, legal, technological, international procurement rules, and other constraints and opportunities.
Prerequisite(s): third-year standing, BUSI 2204 or BUSI 2208, and BUSI 2702 or BUSI 3703.
Lecture three hours a week.

BUSI 3706 [0.5 credit]
International Business Negotiations
Introduction to theory and practice of negotiation in the international business context. Analysis of techniques of conflict resolution and improving ways to reach agreements.
Prerequisite(s): second-year standing and BUSI 2701 or BUSI 2702 with a grade of C- or higher in each.
Lecture three hours a week.

BUSI 3800 [0.5 credit]
Business Case Analysis
Analysis, solution and presentation of complex business issues through cases.
Includes: Experiential Learning Activity
Prerequisite(s): minimum 7.0 Major CGPA in B.Com. or B.I.B. and permission of the Sprott School of Business.
Lecture three hours and tutorial one hour a week.

BUSI 3810 [0.5 credit]
Business Development
Business development, growth and expansion through financing activities and new customer acquisition.
Prerequisite(s): BUSI 2800 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3820 [0.5 credit]
Practicum in Business Design
Students will apply entrepreneurial concepts and engage in designing an entrepreneurial project. Students will prepare in groups a business plan, including in-depth analysis and recommendations.
Includes: Experiential Learning Activity
Prerequisite(s): BUSI 2800 with a grade of C- or higher, and third-year standing.
Lecture three hours a week.

BUSI 3995 [0.0 credit]
Employability Passport III
An advanced course in the knowledge and tools required for a career in Business.
Includes: Experiential Learning Activity
Prerequisite(s): BUSI 2995.
Participation in employability events and initiatives throughout the year.

BUSI 3999 [0.0 credit]
Co-operative Work Term
This course covers the deliverables associated with the co-op work term such as the site visit, work term report submission and employer evaluation.
Includes: Experiential Learning Activity
Prerequisite(s): This course is for students on a university approved co-op work term.

BUSI 4005 [0.5 credit]
Taxation II
An intensive review of federal income tax laws and regulations as significant elements in the planning and decision making process of taxable Canadian corporations. Emphasis on the tax planning function of corporate management and the associated accounting and reporting aspects.
Precludes additional credit for BUSI 2005.
Prerequisite(s): BUSI 3005 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4008 [0.5 credit]
Advanced Management Accounting and Control
Builds on concepts covered in management and cost accounting courses. Integrates relevant issues from other functional areas: strategic uses of cost management, budgeting, and performance evaluation systems in managerial planning and control.
Prerequisite(s): BUSI 3008 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4104 [0.5 credit]
Strategic Human Resources Management
Systems, strategies and practices used to effectively leverage human capital in organizations. How to think strategically about managing human assets, and what must be done to successfully implement these systems, strategies and practices.
Prerequisite(s): BUSI 3102 and BUSI 3103 (with a grade of C- or higher in each).
Lecture three hours per week.

BUSI 4105 [0.5 credit]
Managing Change
An overview of current thinking about change management. Topics covered include understanding the forces for and barriers to change, diagnosing the environment around change and implementing change.
Prerequisite(s): third-year standing and BUSI 2101 or BUSI 2702 or BUSI 3602 or PSYC 2801 with a grade of C- or higher.
Lectures three hours a week.
BUSI 4108 [0.5 credit]
Organizational Learning
Contemporary training and development challenges facing individuals, organizations, and communities and the role of information technology in enhancing individual and collective skills development, capabilities, core competencies, intellectual capital and competitiveness. Prerequisite(s): BUSI 3103 or BUSI 3602 with a grade of C- or higher. Lecture three hours a week.

BUSI 4111 [1.0 credit]
Training and Development
Emphasizes contingency approach to training and development; relevant to organizations of all sizes and resource capacities. Effective training and development is conceptualized as a process that integrates extensive front and back-end planning, implementation, and evaluation activities. Prerequisite(s): third-year standing and BUSI 2101 (or BUSI 2121 or BUSI 2702) with a grade of B- or higher and permission of the Sprott School of Business. Lecture three hours and tutorial one hour per week.

BUSI 4112 [0.5 credit]
Organizational Leadership
Critical examination of theories of leadership and trends in contemporary research; discussion of practical methods for building leadership capacity. Includes: Experiential Learning Activity Prerequisite(s): third-year standing and BUSI 2101 or BUSI 2702 or BUSI 3602 or PSYC 2801 with a grade of C- or higher. Lecture and field work as needed.

BUSI 4117 [1.0 credit]
Creative Thinking
Increases student skills in areas beyond technical expertise, with a focus on the importance of fluidity, risk taking, and idea generation. Emphasis on creativity as a process, with exposure to various techniques and concepts including Design Thinking at multiple levels (individual, group, organization). Includes: Experiential Learning Activity Prerequisite(s): third-year standing and one of BUSI 2101 or BUSI 2702 with a grade of C- or higher and permission of the Sprott School of Business. Lecture three hours a week.

BUSI 4129 [0.5 credit]
Managing the Arts
Challenges of managing arts organizations with emphasis on the changing environment of arts consumption and funding. Tensions arising from blending artistic and aesthetic dimensions with functional considerations when judging organizational and personal issues form a continuing theme. Prerequisite(s): third year standing. Also offered at the graduate level, with different requirements, as MGMT 5129, for which additional credit is precluded. Lecture three hours a week.

BUSI 4201 [0.5 credit]
Marketing Metrics
An overview of essential marketing metrics used for enhancing marketing decisions. The course consists of seven core modules: share metrics, margins and profits, pricing, product and portfolio management, sales force management, promotion profitability, and customer profitability. Prerequisite(s): BUSI 1005 and BUSI 2208. Lecture three hours a week.

BUSI 4203 [0.5 credit]
Marketing In Not-for-Profit Organizations
Theories and practices of marketing in not-for-profit organizations including government. Similarities and differences between marketing in not-for-profit and for-profit organizations, and the key issues faced by marketers in developing marketing strategies in not-for-profit organizations. Prerequisite(s): third-year standing and BUSI 2204 or BUSI 2208 with a grade of C or higher. Lecture three hours a week.

BUSI 4205 [0.5 credit]
International Marketing Strategy
The marketing function in international markets from a strategic and managerial perspective. Environments of foreign markets in relation to marketing research, international branding and positioning, and product, price, distribution, and communication strategies. International expansion methods and foreign market evaluation and selection. Prerequisite(s): third-year standing and BUSI 2204 or BUSI 2208 with a grade of C- or higher. Lecture three hours a week.

BUSI 4208 [0.5 credit]
Marketing Management
In depth analysis and applications of the managerial aspects of marketing. Marketing strategy development and implementation theory and practice. Prerequisite(s): third year standing, BUSI 2208 and one of BUSI 3205 or BUSI 3207 with a grade of C or higher in each. Lecture three hours a week.
BUSI 4209 [0.5 credit]
**Consumer Culture Theory**
Consumer behaviour from a macro and interpretive approach, as a social and cultural phenomenon; the relationships between consumers, the marketplace and cultural meaning.
Precludes additional credit for BUSI 4206 (no longer offered).
Prerequisite(s): third year standing and BUSI 3209 with a grade of C or higher.
Lecture three hours a week.

BUSI 4229 [0.5 credit]
**Marketing in the Arts and Culture Sectors**
Advanced study of marketing within the arts and culture sectors. Facilitates sophisticated understanding of the knowledge and skills required for marketing managers to respond to changing market environments in order to bring arts and culture offerings to their target audiences.
Prerequisite(s): third year standing and BUSI 2204 or BUSI 2208 with a grade of C or higher.
Also offered at the graduate level, with different requirements, as MKTG 5229, for which additional credit is precluded.
Lecture three hours a week.

BUSI 4301 [0.5 credit]
**Decision Models and Analytics**
Management science models and methods in business analytics for decision-making with less risk and better outcomes. Emphasizes on practical applications. Data integration; model formulation, implementation, and solutions, and managerial insights. Applications development and deployment.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 2300, ECON 4005.
Prerequisite(s): third-year standing and BUSI 2301 with a grade of C or higher.
Lecture three hours and lab one hour per week.

BUSI 4302 [0.5 credit]
**Management of Quality**
Quality concepts and methods surrounding the definition, mapping, implementation, improvement of business processes in organizations and global supply chains.
Prerequisite(s): third-year standing, BUSI 2301 with a grade of C or higher and STAT 2606 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4304 [0.5 credit]
**Procurement and Contracting**
Core supply chain procurement processes in the private and public sectors involved in the acquisition of goods and services, including sourcing, purchasing, contracting, supplier collaboration and relationship development and management. Emphasis on concepts, principles, practices, and techniques.
Prerequisite(s): third-year standing; BUSI 2301 with a C grade or higher.
Lecture three hours a week.

BUSI 4231 [0.5 credit]
**Artificial Intelligence and E-Supply Chain Technologies**
Acquire hands-on skills to design and develop innovative business models and Artificial Intelligence (AI) systems on top of big real-world data aiming to create value and solve problems that would enhance the performance of e-supply chains along its multiple dimensions.
Precludes additional credit for BUSI 4431 (no longer offered).
Prerequisite(s): third year standing and BUSI 2301 and BUSI 2402 with a grade of C or higher in each.
Lecture three hours a week and lab one hour a week.

BUSI 4400 [0.5 credit]
**IS Strategy, Management and Acquisition**
Comprehensive treatment of current trends and management issues associated with information systems within organizations of local, national and international scope. Issues and techniques of information systems planning, administration, resource management and new technology adoption. Case studies are used.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing, BUSI 2400 and BUSI 3103 (or BUSI 3602) with a grade of C- or higher in each.
Lecture three hours a week.

BUSI 4404 [0.5 credit]
**IT Infrastructure**
Challenges and issues managers face in assembling the infrastructure for IT service delivery. IT Service levels, data communications, networks (LAN, MAN, WAN, wireless), internetworking, SOA, web services, SaaS, server and storage virtualization, network security, business continuity and disaster recovery.
Prerequisite(s): third-year standing and BUSI 2400 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4406 [0.5 credit]
**Business Analytics**
Prerequisite(s): third-year standing and BUSI 2400 with a grade of C or higher.
Lecture three hours a week.

BUSI 4408 [0.5 credit]
**Social Analytics**
Covers the process, tool and techniques necessary to acquire, clean and analyze text that has been generated on social platforms. Social network analysis, sentiment analysis, topic extraction, co-occurrence analysis.
Prerequisite(s): BUSI 2400, BUSI 2208, STAT 2607, 3rd year standing. Restricted to students enrolled in B.Com, BIB, and the B.Econ Economic Data Science Concentration.
Lecture three hours a week.
BUSI 4500 [0.5 credit]  
**Advanced Corporate Finance**  
An in-depth examination of some of the major theoretical issues in corporate finance. This course requires analyses and presentations of both articles from the finance literature and case studies.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing; and BUSI 3500, BUSI 3502, BUSI 3512 with a grade of C- or higher in each and STAT 2607 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 4502 [0.5 credit]  
**Portfolio Management**  
Analysis of investment requirements for individuals and institutional investors: liquidity, risk and return; portfolio design, construction, management and control; performance measurement; capital market theory.  
Prerequisite(s): fourth-year standing; and BUSI 3500, BUSI 3502 and BUSI 3512 with a grade of C- or higher in each and STAT 2607 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 4505 [0.5 credit]  
**Global Financial Markets and Institutions**  
Comprehensive view of the world’s financial markets and institutions. The primary focus will be on the purpose and practice of financial institutions, and the specifics of the financial instruments available to the firm and investor.  
Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each.  
Lecture three hours a week.

BUSI 4510 [0.5 credit]  
**Mergers and Acquisitions**  
The theory and practice of mergers and acquisitions; the best ways to analyze, design and implement mergers and acquisitions transactions. A highly practical planning-based approach to managing the acquisition process will be employed.  
Prerequisite(s): BUSI 3500 and BUSI 3502 with a grade of C- or higher in each, and STAT 2607 with a grade of C- or higher.  
Lecture three hours per week.

BUSI 4511 [0.5 credit]  
**Fixed Income Analysis**  
Valuation of fixed income securities and interest rate derivatives including bonds, mortgage- and asset-based securities. Analytic tools used in bond portfolio and interest rate risk management including yield curve construction, duration and convexity, and term structure models.  
Prerequisite(s): BUSI 3502, BUSI 3512 with a grade of C- or higher in each, and STAT 2607 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 4601 [0.5 credit]  
**Business Ethics**  
Use of ethical reasoning to analyze business decisions. The ethical content of these decisions. The role of ethics in business situations. Practice in ethical reasoning. Major ethical systems.  
Prerequisite(s): BUSI 2505.  
Lecture three hours a week.
BUSI 4607 [0.5 credit]
Management of Technology and Innovation
Integration of technology and strategy; design of technological strategy; development of new business around new technology; and management of corporate research and development, including pre-competitive consortia.
Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208, and BUSI 3103 with a grade of C- or higher in each.
Lecture three hours a week.

BUSI 4608 [0.5 credit]
Canadian Business History
The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business-government relations).
Also listed as HIST 3205.
Prerequisite(s): fourth-year standing in B.Com. or B.I.B.
Lectures three hours a week.

BUSI 4609 [0.5 credit]
Strategic Management
Analysis and evaluation of the organization’s corporate and business strategies; integration and synthesis of knowledge acquired in the program by application of acquired functional skills to strategic decision making.
Precludes additional credit for BUSI 3629, BUSI 4709.
Prerequisite(s): fourth-year standing in all B.Com. and successful completion of all 2000- and 3000-level courses in the Major requirement. Note that B.Com. concentration in International Business students require BUSI 4709.
Lectures three hours a week.

BUSI 4704 [0.5 credit]
The Business Environment in Europe
The economic, political, legal, and cultural environment for doing business in the European Union and other regions in Europe. Patterns of foreign trade and investment, market characteristics, science and technology, regulation and European integration, and business culture.
Also listed as EURR 4704.
Precludes additional credit for EURR 4006 (no longer offered), BUSI 4604 (no longer offered).
Prerequisite(s): third-year standing.
Seminar three hours a week.

BUSI 4705 [0.5 credit]
Ethics and Cross-cultural Interaction
Perceptions and behaviors that characterize interactions among individuals from various cultural backgrounds, with emphasis on ethical issues that may arise when business crosses cultural boundaries. Various systems, both organizational and individual, for dealing with contrasting expectations are discussed.
Precludes additional credit for BUSI 4601.
Prerequisite(s): fourth-year standing in B. Com. (International Business Concentration) or B.I.B., and BUSI 2702 or BUSI 3703.
Lecture three hours a week.

BUSI 4706 [0.5 credit]
International Human Resource Management
Theoretical and process issues in the recruitment, selection, training, evaluation and repatriation of personnel in multi-country organizations. Issues are examined from the perspective of organizations, expatriates and local employees of multinational firms.
Prerequisite(s): third-year standing, BUSI 3102, and one of BUSI 2702 or BUSI 3703.
Lecture three hours a week.

BUSI 4707 [0.5 credit]
Regionalism and Globalization
Trends in globalization versus supra- and sub-national regionalism. Role of international institutions (e.g. OECD, WTO). Strategy adaptation and integration within and across trade blocs (e.g. NAFTA, EU, Mercosur, ASEAN). Strategies for sub-national markets with similarities across different countries.
Prerequisite(s): third-year standing in B.Com., B.I.B., or Minor in Business, and BUSI 2701 or BUSI 2702.
Lectures three hours a week.

BUSI 4708 [0.5 credit]
International Expansion and Operations
Internationalization process. Methods of international expansion including exporting, greenfield investment, acquisition, joint venture, and licensing. Theories of international market selection, investment location, and market service.
Prerequisite(s): fourth-year standing, and BUSI 2702 or BUSI 3703.
Lecture three hours a week.

BUSI 4709 [0.5 credit]
Strategic Management for International Business
Development and implementation of strategies within and across international markets. Emphasis on developing strategic perspectives that incorporate the environment, the state of the industry, and the capabilities of the firm. Integrates skills, concepts and theories learned in functional areas.
Precludes additional credit for BUSI 3629, BUSI 4609.
Prerequisite(s): fourth-year standing in B.Com. (International Business Concentration) or B.I.B., and successful completion of all 2000- and 3000-level courses in the Major requirement.
Lectures three hours a week, tutorial one hour a week.

BUSI 4710 [0.5 credit]
International New Ventures
Challenges facing entrepreneurs in the creation and growth of competitive knowledge-based new international ventures or ‘born globals’. Identification of opportunities abroad, strategies and logistics, sourcing, international deal making and business models.
Prerequisite(s): BUSI 2702 or BUSI 3703, and third-year standing.
Lecture three hours a week.
BUSI 4717 [0.5 credit]
Managing Globalization in Emerging Economies
Critical examination of the managerial and institutional issues of globalization from the perspectives of emerging economies. Indigenous and international institutions' role in the evolution of a competitive and inclusive global economy and society. Discerning lessons of experience for newly globalizing societies.
Precludes additional credit for BUSI 4902 (no longer offered).
Prerequisite(s): fourth year standing in B.Com, BIB, or Minor in Business, ECON 1001 and ECON 1002 (or ECON 1000).
Lectures three hours a week.

BUSI 4719 [0.5 credit]
Practicum in International Business
Students will engage in an approved international experience, abroad or within Canada (can include SSCG), that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3701, BUSI 3702.
Prerequisite(s): third-year standing in B.Com. International Business concentration and permission of the Sprott School of Business.

BUSI 4800 [0.5 credit]
Sprott Student Consulting II
An experiential work environment in which students interact with real clients as a consultant. Various types of projects are possible depending on the company and their goals/needs. Companies may be internal (i.e. Carleton, Sprott), or external (i.e. not for profit, for profit, start-ups, entrepreneurs).
Includes: Experiential Learning Activity
Prerequisite(s): Permission of the Sprott School of Business.
Also offered at the graduate level, with different requirements, as BUSI 5997, for which additional credit is precluded.
Significant industry/project/service consultancy exposure.

BUSI 4810 [0.5 credit]
Practicum in Business Creation
Students apply concepts and engage in groups to implement the design of an entrepreneurship project per their business plan developed in BUSI 3820. The projects provide opportunities for experiential learning.
Includes: Experiential Learning Activity
Prerequisite(s): BUSI 3820.
Lectures three hours per week.

BUSI 4901 [0.5 credit]
Topics in Business I
A selected topics course may be offered. Topics may vary. Consult the School’s website for available topics and prerequisite information. Eligibility for this course to serve as an option for specific concentrations is to be established by the School.
Prerequisite(s): Vary based on section. Please refer to sprott.carleton.ca/registration for section specific prerequisites.
Lecture three hours a week.

BUSI 4902 [0.5 credit]
Topics in Business II
A selected topics course may be offered. Topics may vary. Consult the School’s website for available topics and prerequisite information. Eligibility for this course to serve as an option for specific concentrations is to be established by the School.
Prerequisite(s): Vary based on section. Please refer to sprott.carleton.ca/registration for section specific prerequisites.
Lecture three hours a week.

BUSI 4904 [1.0 credit]
Directed Studies I
Reading course on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.
Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4905 [0.5 credit]
Directed Studies II
Reading course on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.
Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4906 [1.0 credit]
Research Project for Business
Provides students with opportunity to conduct research in their area of interest and present the research in an undergraduate thesis format. Conducted under the supervision of a faculty advisor from Sprott, with the specific deliverable determined by Supervisor and student, and approved by Sprott School.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4995 [0.0 credit]
Employability Passport IV
An advanced course in the knowledge and tools required for a career in Business.
Includes: Experiential Learning Activity
Prerequisite(s): BUSI 3995.
Participation in employability events and initiatives throughout the year.
Canadian Studies

This section presents the requirements for programs in:

- Canadian Studies B.A. Honours
- Canadian Studies B.A. Combined Honours
- Indigenous Studies B.A. Combined Honours
- Canadian Studies B.A.
- Minor in Canadian Studies
- Minor in Indigenous Studies
- Minor in Heritage and Conservation
- Minor in Quebec Studies
- Mention Français: Canadian Studies Honours
- Mention Français: Canadian Studies Combined Honours
- Mention Français: Canadian Studies Honours

Program Requirements

Canadian Studies

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit from:

- CDNS 1000 [0.5] Introduction to Canadian Studies
- CDNS 1001 [0.5] Studying Canada
- CDNS 1002 [0.5] Themes in the Study of Canada
- CDNS 1101 [0.5] Ottawa: Exploring National Institutions
- CDNS 1102 [0.5] Introduction to Canada and the World
- FYSM 1409 [1.0] Social Change in Canada
- FYSM 1600 [1.0] Contemporary Controversies in Canadian Society
- or other 1000-level or FYSM courses approved by the School of Indigenous and Canadian Studies
- INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies
- INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters

2. 1.5 credits in:

- CDNS 2000 [0.5] Debating Canada
- CDNS 3000 [0.5] Producing Knowledge
- CDNS 4000 [0.5] Capstone Seminar in Advanced Research in Canadian Studies

3. 0.5 credit from:

- CDNS 2210 [0.5] Introduction to the Study of Canadian Culture
- CDNS 2300 [0.5] Critical Nationalism
- CDNS 2400 [0.5] Heritage Conservation in Canada
- CDNS 2510 [0.5] Introduction to Québec Society (English version)
- CDNS 2511 [0.5] Introduction à la société et à la culture québécoises (version française)
- CDNS 2600 [0.5] Branding Canada
- INDG 2011 [0.5] Contemporary Indigenous Studies
- INDG 2012 [0.5] Anishinaabeg Studies
- INDG 2013 [0.5] Haudenosaunee Studies

4. 0.5 credit from:

- CDNS 3400 [0.5] Feminists and Feminism in Canada
- CDNS 3550 [0.5] Interfaces between English and French Canadian Cultures
- CDNS 3600 [0.5] Cultural Politics and Identities in Canada
- CDNS 3610 [0.5] The Canadian Political Economy Tradition
- CDNS 3620 [0.5] Canada-US Relations
- CDNS 3700 [0.5] Cultural Traditions in Canada
- CDNS 3901 [0.5] Selected Topics in Canadian Studies
- INDG 3901 [0.5] Selected Topics in Indigenous Studies
- INDG 3001 [0.5] Indigenous Governance
- INDG 3011 [0.5] Indigenous Rights, Resistance, and Resurgence
- INDG 3015 [0.5] Indigenous Ecological Ways of Knowing and the Academy

5. 0.5 credit from:

- CDNS 4010 [0.5] Language, Culture, and Power in Canada
- CDNS 4200 [0.5] Canadian Popular Culture
- CDNS 4300 [0.5] Contested Spaces and Communities
- CDNS 4400 [0.5] Cultural Landscape and Cultural Identity in Canada
- CDNS 4500 [0.5] Canada and the World
- CDNS 4510 [0.5] Québec Studies
- INDG 4001 [0.5] Indigeneity in the City
- INDG 4011 [0.5] Indigenous Representations

6. 1.0 credit at the 4000-level, from the list of Approved Canadian Studies or Indigenous Studies Electives below

7. 4.0 credits from the list of Approved Canadian Studies or Indigenous Studies Electives below

B. Credits Not Included in the Major CGPA (11.0 credits)

8. 8.0 credits not in Canadian Studies or Indigenous Studies

9. 3.0 credits in free electives

C. Additional Requirements

10. The School of Indigenous and Canadian Studies language requirement must be met.

Total Credits

20.0

Canadian Studies

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit from:

- CDNS 1000 [1.0] Introduction to Canadian Studies
- CDNS 1001 [0.5] Studying Canada
- CDNS 1002 [0.5] Themes in the Study of Canada
- CDNS 1101 [0.5] Ottawa: Exploring National Institutions
- CDNS 1102 [0.5] Introduction to Canada and the World
- FYSM 1409 [1.0] Social Change in Canada
### Indigenous Studies

**B.A. Combined Honours (20.0 Credits)**

**A. Credits Included in the Indigenous Studies Major (7.0 credits)**

1. **1.0 credit in:**
   - INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies
   - INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters

2. **1.5 credits from:**
   - INDG 2011 [0.5] Contemporary Indigenous Studies
   - INDG 2015 [0.5] Indigenous Ecological Ways of Knowing
   - INDG 2020 [0.5] Decolonizing Gender, Sex, and Sexuality

3. **1.0 credit from:**
   - INDG 3001 [0.5] Indigenous Governance
   - INDG 3015 [0.5] Indigenous Ecological Ways of Knowing and the Academy

4. **1.0 credit in:**
   - INDG 4001 [0.5] Indigeneity in the City
   - INDG 4011 [0.5] Indigenous Representations

5. **1.5 credits from:**
   - CDNS 2000 [0.5] Debating Canada
   - CDNS 3000 [0.5] Producing Knowledge
   - CDNS 4000 [0.5] Capstone Seminar in Advanced Research in Canadian Studies

6. **1.0 credit at the 4000-level, from the list of Approved Canadian Studies or Indigenous Studies Electives below**

7. **1.5 credits from the list of Approved Canadian Studies or Indigenous Studies Electives below**

8. The requirements for Combined Honours in the other discipline must be satisfied

9. Sufficient free electives to achieve a total of 20.0 credits for the program

10. The School of Indigenous and Canadian Studies language requirement must be met.

### Canadian Studies

**B.A. (15.0 credits)**

**A. Credits Included in the Major CGPA (7.0 credits)**

1. **1.0 credit from:**
   - CDNS 1000 [1.0] Introduction to Canadian Studies
   - CDNS 1001 [0.5] Studying Canada
   - CDNS 1002 [0.5] Themes in the Study of Canada
   - CDNS 1101 [0.5] Ottawa: Exploring National Institutions
   - CDNS 1102 [0.5] Introduction to Canada and the World
   - FYSM 1409 [1.0] Social Change in Canada

2. **1.0 credit in:**
   - CDNS 1010 [0.5] Indigenous Rights, Resistance, and Resurgence
   - CDNS 1011 [0.5] Indigenous Governance
   - CDNS 1015 [0.5] Indigenous Ecological Ways of Knowing and the Academy

3. **1.0 credit from:**
   - CDNS 2000 [0.5] Debating Canada
   - CDNS 3000 [0.5] Producing Knowledge
   - CDNS 4000 [0.5] Capstone Seminar in Advanced Research in Canadian Studies

4. **1.5 credits from:**
   - CDNS 2011 [0.5] Contemporary Indigenous Studies
   - CDNS 2015 [0.5] Indigenous Ecological Ways of Knowing
   - CDNS 2020 [0.5] Decolonizing Gender, Sex, and Sexuality

5. **1.5 credits from:**
   - CDNS 3001 [0.5] Indigenous Governance
   - CDNS 3015 [0.5] Indigenous Ecological Ways of Knowing and the Academy

6. **1.0 credit at the 4000-level, from the list of Approved Canadian Studies or Indigenous Studies Electives below**

7. The requirements for Combined Honours in the other discipline must be satisfied

8. Sufficient free electives to achieve a total of 20.0 credits for the program
**Minor in Canadian Studies (4.0 credits)**

The Minor in Canadian Studies is open to all undergraduate degree students not in Canadian Studies programs.

**Requirements:**

1. **1.0 credit from:**
   - CDNS 1000 [0.5] Introduction to Canadian Studies

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>CDNS 1000</td>
<td>Introduction to Canadian Studies</td>
<td>0.5</td>
</tr>
<tr>
<td>CDNS 1002</td>
<td>Themes in the Study of Canada</td>
<td>0.5</td>
</tr>
<tr>
<td>CDNS 1101</td>
<td>Ottawa: Exploring National Institutions</td>
<td>0.5</td>
</tr>
<tr>
<td>CDNS 1102</td>
<td>Introduction to Canada and the World</td>
<td>0.5</td>
</tr>
<tr>
<td>FYSM 1402</td>
<td>How Ottawa Works: Exploring National Institutions</td>
<td>0.5</td>
</tr>
<tr>
<td>FYSM 1409</td>
<td>Social Change in Canada</td>
<td>0.5</td>
</tr>
<tr>
<td>FYSM 1600</td>
<td>Contemporary Change in Canada</td>
<td>0.5</td>
</tr>
<tr>
<td>INDG 1010</td>
<td>Introduction to Indigenous Peoplehood Studies</td>
<td>0.5</td>
</tr>
<tr>
<td>INDG 1011</td>
<td>Introduction to Indigenous-Settler Encounters</td>
<td>0.5</td>
</tr>
</tbody>
</table>

2. **1.0 credit from:**
   - CDNS 2000 [0.5] Debating Canada
   - CDNS 2210 [0.5] Introduction to the Study of Canadian Culture
   - CDNS 2300 [0.5] Critical Nationalism
   - CDNS 2400 [0.5] Heritage Conservation in Canada
   - CDNS 2510 [0.5] Introduction to Québec Society (English version)
   - CDNS 2511 [0.5] Introduction à la société et à la culture québécoises (version française)
   - CDNS 2600 [0.5] Branding Canada
   - INDG 2011 [0.5] Contemporary Indigenous Studies
   - INDG 2013 [0.5] Haudenosaunee Studies
   - INDG 2012 [0.5] Anishinaabe Studies

3. **1.5 credits from:**
   - CDNS 3000 [0.5] Producing Knowledge
   - CDNS 3400 [0.5] Feminists and Feminism in Canada
   - CDNS 3550 [0.5] Interfaces between English and French Canadian Cultures
   - CDNS 3600 [0.5] Cultural Politics and Identities in Canada
   - CDNS 3610 [0.5] The Canadian Political Economy Tradition
   - CDNS 3620 [0.5] Canada-US Relations
   - CDNS 3700 [0.5] Cultural Traditions in Canada
   - CDNS 3901 [0.5] Selected Topics in Canadian Studies
   - INDG 3011 [0.5] Indigenous Rights, Resistance, and Resurgence
   - INDG 3015 [0.5] Indigenous Ecological Ways of Knowing and the Academy
   - INDG 3901 [0.5] Selected Topics in Indigenous Studies

4. **1.0 credit at the 3000- or 4000-level from:**
   - CDNS 3000 [0.5] Producing Knowledge
   - CDNS 3400 [0.5] Feminists and Feminism in Canada
   - CDNS 3550 [0.5] Interfaces between English and French Canadian Cultures
   - CDNS 3600 [0.5] Cultural Politics and Identities in Canada
   - CDNS 3610 [0.5] The Canadian Political Economy Tradition
   - CDNS 3620 [0.5] Canada-US Relations
   - CDNS 3700 [0.5] Cultural Traditions in Canada
   - CDNS 3901 [0.5] Selected Topics in Canadian Studies

5. **2.5 credits from:**
   - CDNS 4000 [0.5] Capstone Seminar in Advanced Research in Canadian Studies
   - CDNS 4002 [0.5] Internship Practicum
   - CDNS 4010 [0.5] Language, Culture, and Power in Canada
   - CDNS 4200 [0.5] Canadian Popular Culture
   - CDNS 4300 [0.5] Contested Spaces and Communities
   - CDNS 4400 [0.5] Cultural Landscape and Cultural Identity in Canada
   - CDNS 4500 [0.5] Canada and the World
   - CDNS 4510 [0.5] Québec Studies
   - CDNS 4800 [1.0] Internship Practicum
   - CDNS 4801 [0.5] Internship/Practicum
   - CDNS 4802 [0.5] Internship/Practicum
   - CDNS 4901 [0.5] Selected Topics in Canadian Studies

**Total Credits: 15.0**
### Minor in Indigenous Studies (4.0 credits)

The Minor in Indigenous Studies is open to all undergraduate degree students.

**Requirements**

1. **1.0 credit from** the list of approved Indigenous Studies Electives (below) 1.0

2. **1.0 credit from** the list of approved Indigenous Studies Electives (below) 1.0

3. **1.0 credit from**

   - INDG 1010 [0.5] Introduction to Indigenous-Settler Encounters
   - INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters

4. **1.0 credit from**

   - INDG 2011 [0.5] Contemporary Indigenous Studies
   - INDG 2012 [0.5] Anishinaabe Studies
   - INDG 2013 [0.5] Haudenosaunee Studies
   - INDG 2015 [0.5] Indigenous Ecological Ways of Knowing
   - INDG 2020 [0.5] Decolonizing Gender, Sex, and Sexuality

5. **The remaining requirements of the major discipline(s) and degree must be satisfied.**

**Total Credits** 4.0

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### Minor in Heritage and Conservation (4.0 credits)

The Minor in Heritage and Conservation is open to all undergraduate degree students.

**Requirements**

1. **2.0 credits in:**

   - CDNS 1101 [0.5] Ottawa: Exploring National Institutions
   - CDNS 2400 [0.5] Heritage Conservation in Canada
   - CDNS 3700 [0.5] Cultural Traditions in Canada
   - CDNS 4400 [0.5] Cultural Landscape and Cultural Identity in Canada

   **or**

   - CDNS 4403 [0.5] Heritage Conservation and Sustainability

2. **2.0 credits from** Approved Heritage Conservation Electives 2.0

**Total Credits** 4.0

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### Approved Heritage Conservation Electives

**African Studies**

- AFRI 3004 [0.5] The African City
- AFRI 3005 [0.5] African Migrations and Diasporas

**Architecture**

- ARCH 4200 [0.5] Architectural Conservation
  - Philosophy and Ethics

**Art History**

- ARTH 1200 [0.5] History and Theory of Architecture: Prehistory to 1500
- ARTH 1201 [0.5] History and Theory of Architecture: 1500 to Present
- ARTH 2510 [0.5] Architecture of the 18th and 19th Centuries
- ARTH 2610 [0.5] Twentieth-Century Architecture
- ARTH 3002 [0.5] Canadian Architecture
- ARTH 3005 [0.5] American Architecture
- ARTH 3701 [0.5] Art and Architecture on Site
- ARTH 3710 [0.5] Architecture and Empire
- ARTH 4610 [0.5] Topics in Modern Architecture or Design
- ARTH 4701 [0.5] Art and Architecture on Site

**Environmental Studies**

- ENST 1020 [0.5] People, Places and Environments

**Geography**

- GEOG 1020 [0.5] People, Places and Environments
- GEOG 2300 [0.5] Space, Place and Culture
- GEOG 3021 [0.5] Geographies of Culture and Identity
- GEOG 3023 [0.5] Cities in a Global World
- GEOG 4021 [0.5] Seminar in Culture, Identity and Place

**History**

- HIST 3209 [0.5] Canadian Urban History
- HIST 3809 [0.5] Historical Representations
- HIST 3814 [0.5] Crafting Digital History
- HIST 4302 [1.0] Canada: Ideas & Culture

**Indigenous Studies**

- INDG 2015 [0.5] Indigenous Ecological Ways of Knowing
- INDG 4001 [0.5] Indigeneity in the City
Minor in Quebec Studies (4.0 credits)

Open to all undergraduate degree students. Additional courses containing Quebec content may apply to the minor if approved by the Advisor in advance.

Requirements:
1. 2.0 credits in:
   - CDNS 2510/2510 [0.5] Introduction to Québec Society
   - CDNS 3550 [0.5] Interfaces between English and French Canadian Cultures
   - FREN 2203 [0.5] Introduction aux études littéraires 2
   - HIST 3301 [0.5] Quebec Since 1800

2. 1.5 credits in approved electives (see below) 1.5
3. 0.5 credit at the 3000-level or above in approved electives (see below) 0.5
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Approved Electives

Art History
ARTH 2002 [0.5] Canadian Historical Art

Canadian Studies
CDNS 2300 [0.5] Critical Nationalism
CDNS 4510/ FINS 4510 [0.5] Québec Studies

Film Studies
FILM 3209 [0.5] Topics in Canadian Cinema

French
FREN 2401 [1.0] Introduction à la linguistique française
FREN 2203 [0.5] Introduction aux études littéraires 2
FREN 3414 [0.5] Sociolinguistique du français
FREN 3417 [0.5] Le français au Canada
FREN 4213 [0.5] Littérature québécoise et canadienne d'expression française
FREN 4300 [0.5] Experiential learning in French and Francophone studies

History
HIST 2301 [0.5] Canadian Political History
HIST 3206 [0.5] Place and Politics in Canadian History
HIST 4303 [0.5] Society and Culture in Canada
HIST 4304 [1.0] Canada: Politics & Society

Political Science
PSCI 4005 [0.5] Canadian Federalism
PSCI 4009 [0.5] Quebec Politics

Mention : Français

Students who wish to qualify for the Mention : Français notation in Canadian Studies may do so by fulfilling the requirements listed below, in consultation with the Undergraduate Supervisor. Courses taken for the Mention : Français notation may be used to fulfill the Canadian Studies B.A. or the Canadian Studies B.A. Combined Honours program requirements.

Courses taught in French at the University of Ottawa or at another university and which are approved by the Undergraduate Supervisor may be used to satisfy Mention : Français requirements. Students who wish to enrol in University of Ottawa courses for this purpose must do so through the University of Ottawa Exchange Agreement. To enroll in courses in French at another university, a Letter of Permission is required from the Registrar’s Office.

Mention Français: Canadian Studies Honours (4.0 credits)

To graduate with the notation Mention : Français, Honours and Combined Honours students must include the following courses in their degree program:

1. 1.0 credit in the advanced study of the French language 1.0
2. 1.0 credit in French-Canadian culture and heritage such as:
   - FREN 2202 [0.5] Introduction aux études littéraires 1
   - FREN 2203 [0.5] Introduction aux études littéraires 2
   - FREN 2401 [1.0] Introduction à la linguistique française
or a course in another appropriate discipline, given in French, which is approved by the Undergraduate Supervisor. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

3. 1.0 credit on a Canadian subject at the 2000- or 3000-level, taught in French, in any appropriate discipline. For Carleton University courses that may be used to fulfill this requirement, consult the list of Approved Canadian Studies Electives (below). Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

4. 1.0 credit on a Canadian subject at the 4000-level, taught in French, including either:
   - CDNS 4903 [0.5] Études dirigées I
   - CDNS 4904 [0.5] Études dirigées II
or a directed studies, tutorial, research paper, or course in any appropriate discipline.

Total Credits 4.0

Notes:

1. All written work must be submitted in French. Note that directed studies, tutorials, and research papers are weighted differently in various departments. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

Mention Français: Canadian Studies Combined Honours (4.0 credits)

To graduate with the notation Mention : Français, Combined Honours students must include the following courses in their degree program:

1. 1.0 credit in the advanced study of the French language 1.0
2. 1.0 credit in French-Canadian culture and heritage such as:
   - FREN 2202 [0.5] Introduction aux études littéraires 1
   - FREN 2203 [0.5] Introduction aux études littéraires 2
   - FREN 2401 [1.0] Introduction à la linguistique française

Total Credits 4.0

Notes:

1. All written work must be submitted in French. Note that directed studies, tutorials, and research papers are weighted differently in various departments. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.
or a course in another appropriate discipline, given in French, which is approved by the Undergraduate Supervisor. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

3. 1.0 credit on a Canadian subject at the 2000- or 3000-level, taught in French, in any appropriate discipline. For Carleton University courses that may be used to fulfill this requirement, consult the list of Approved Canadian Studies Electives (below). Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

4. 1.0 credit on a Canadian subject at the 4000-level, taught in French, including either:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDNS 4903</td>
<td>Études dirigées I</td>
</tr>
<tr>
<td>CDNS 4904</td>
<td>Études dirigées II</td>
</tr>
</tbody>
</table>

or a directed studies, tutorial, research paper, or course in any appropriate discipline.

Total Credits: 4.0

Notes:

1. All written work must be submitted in French. Note that directed studies, tutorials, and research papers are weighted differently in various departments. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

2. Combined Honours program students must meet Mention : Français requirements of both disciplines.

Mention Français: Canadian Studies B.A. (3.0 credits)

To graduate with the notation Mention : Français, B.A., students must include the following courses in their degree program:

1. **1.0 credit in** the advanced study of the French language

2. **1.0 credit in** French-Canadian culture and heritage such as:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 2202</td>
<td>Introduction aux études littéraires 1</td>
</tr>
<tr>
<td>FREN 2203</td>
<td>Introduction aux études littéraires 2</td>
</tr>
<tr>
<td>FREN 2401</td>
<td>Introduction à la linguistique française</td>
</tr>
</tbody>
</table>

or a course in another appropriate discipline, given in French, which is approved by the Undergraduate Supervisor. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

3. 1.0 credit on a Canadian subject at the 2000- or 3000-level, taught in French, in any appropriate discipline. For Carleton University courses that may be used to fulfill this requirement, consult the list below of Approved Canadian Studies Electives. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

Total Credits: 3.0

Approved Canadian Studies Electives

The following courses are deemed by the School of Indigenous and Canadian Studies to have significant Canadian content, and can be included where appropriate as part of a Canadian Studies degree. Carleton courses not on this list may be applied as approved Canadian Studies electives, but they must be approved by the Undergraduate Supervisor. Students taking courses at the University of Ottawa should consult with the Undergraduate Supervisor to gain approval for substituting them as approved Canadian Studies electives.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>AFRI 3005</td>
<td>African Migrations and Diasporas</td>
</tr>
<tr>
<td>ARCH 4002</td>
<td>Canadian Architecture</td>
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<tr>
<td>ARTH 2002</td>
<td>Canadian Historical Art</td>
</tr>
<tr>
<td>ARTH 2003</td>
<td>Canadian Twentieth-Century and Contemporary Art</td>
</tr>
<tr>
<td>ARTH 2005</td>
<td>Arts of the First Peoples: The Subarctic</td>
</tr>
<tr>
<td>ARTH 2006</td>
<td>Arts of the First Peoples: The Southwest, the West Coast and the Arctic</td>
</tr>
<tr>
<td>ARTH 2008</td>
<td>Inuit Art</td>
</tr>
<tr>
<td>ARTH 3000</td>
<td>Themes in Canadian Art</td>
</tr>
<tr>
<td>ARTH 3002</td>
<td>Canadian Architecture</td>
</tr>
<tr>
<td>ARTH 3701</td>
<td>Art and Architecture on Site</td>
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<tr>
<td>ARTH 4000</td>
<td>Topics in Canadian Art</td>
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<td>ARTH 4005</td>
<td>Topics in Contemporary Indigenous Art</td>
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<td>ARTH 4008</td>
<td>Transnational Theory</td>
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<td>Internship/Practicum</td>
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<td>CDNS 4802</td>
<td>Internship/Practicum</td>
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<td>CDNS 4901</td>
<td>Selected Topics in Canadian Studies</td>
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<tr>
<td>CDNS 4902</td>
<td>Selected Topics in Canadian Studies</td>
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<td>CDNS 4903</td>
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<td>CDNS 4906</td>
<td>Directed Studies II</td>
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<tr>
<td>CDNS 4907</td>
<td>Directed Studies III</td>
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</table>

Students may use CDNS courses as approved Canadian Studies electives, provided they have met their core program requirements.

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<th>Course Code</th>
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<tbody>
<tr>
<td>CHST 3002</td>
<td>Special Topics in Child Studies</td>
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<tr>
<td>COMS 2600</td>
<td>Communication and Culture</td>
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<tr>
<td>COMS 3108</td>
<td>Media Industries and the Network Society (Communication &amp; Media Studies)</td>
</tr>
<tr>
<td>COMS 3401</td>
<td>Communications Regulation in Canada</td>
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<tr>
<td>COMS 3407</td>
<td>Comparative Media Studies</td>
</tr>
<tr>
<td>ECON 3201</td>
<td>Economic Thought and Policy in Canada</td>
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<tr>
<td>ECON 3220</td>
<td>Canadian Economic History</td>
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<tr>
<td>ECON 3300</td>
<td>Public Policy Toward Business</td>
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<td>ECON 3365</td>
<td>Introduction to Industrial Relations</td>
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<tr>
<td>ECON 3403 [0.5]</td>
<td>Introduction to Public Economics: Expenditures</td>
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<td>ECON 3405 [0.5]</td>
<td>Introduction to Public Economics: Taxation</td>
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<td>ECON 3420 [0.5]</td>
<td>Economic Theories of Federalism</td>
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<td>ECON 3450 [0.5]</td>
<td>Political Economy in the Modern State</td>
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<td>ECON 3607 [0.5]</td>
<td>Monetary and Financial Institutions</td>
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<td>ECON 3801 [0.5]</td>
<td>Regional Economics</td>
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<td>ECON 3820 [0.5]</td>
<td>Topics in Canadian Economic Policy</td>
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<td>ECON 3850 [0.5]</td>
<td>Economics of Information and the Media</td>
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<td>ECON 4309 [0.5]</td>
<td>Applied Industrial Economics</td>
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<td>ECON 4403 [0.5]</td>
<td>Public Economics: Expenditures</td>
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<td>ECON 4404 [0.5]</td>
<td>Public Economics: Taxation</td>
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<td>ECON 4460 [0.5]</td>
<td>Health Economics</td>
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<td>ECON 4700 [0.5]</td>
<td>Measurement Economics</td>
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<tr>
<td>ENGL 2802 [1.0]</td>
<td>Indigenous and Canadian Literatures</td>
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<tr>
<td>ENGL 2956 [0.5]</td>
<td>Literatures of the Americas I</td>
</tr>
<tr>
<td>ENGL 2957 [0.5]</td>
<td>Literatures of the Americas II</td>
</tr>
<tr>
<td>ENGL 3940 [0.5]</td>
<td>Studies in Diaspora Lit.</td>
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<tr>
<td>ENGL 3960 [0.5]</td>
<td>Studies in Indigenous Literature</td>
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<tr>
<td>ENGL 3965 [0.5]</td>
<td>Intro to Postcolonial Theory</td>
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<td>ENGL 3972 [0.5]</td>
<td>Studies in Postcolonial Literature</td>
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<tr>
<td>ENGL 4802 [0.5]</td>
<td>Race, Ethnicity and Canadian Lit.</td>
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<td>ENGL 4806 [0.5]</td>
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<tr>
<td>ENGL 4807 [0.5]</td>
<td>Studies in Canadian Literature II</td>
</tr>
<tr>
<td>ENGL 4960 [0.5]</td>
<td>Indigenous Literatures I</td>
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<tr>
<td>ENGL 4961 [0.5]</td>
<td>Indigenous Literatures II</td>
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<tr>
<td>FILM 3209 [0.5]</td>
<td>Topics in Canadian Cinema</td>
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<tr>
<td>First Year Seminar</td>
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<td>FYSM 1401 [1.0]</td>
<td>Multiculturalism in Canada</td>
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<tr>
<td>FYSM 1900 [1.0]</td>
<td>Selected Topics In the Study of Academic Discourses</td>
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<tr>
<td>FREN 2401 [1.0]</td>
<td>Introduction à la linguistique française</td>
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<tr>
<td>FREN 3215 [0.5]</td>
<td>Les éres du soupçon : contemporanéités de la littérature</td>
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<tr>
<td>FREN 3900 [0.5]</td>
<td>Apprentissage et enseignement du français langue seconde</td>
</tr>
<tr>
<td>FREN 4213 [0.5]</td>
<td>Littérature québécoise et canadienne d'expression française</td>
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<tr>
<td>ENST 1020 [0.5]</td>
<td>People, Places and Environments</td>
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<tr>
<td>ENST 2001 [0.5]</td>
<td>Sustainable Futures: Environmental Challenges and Solutions</td>
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<td>GEOG 2020 [0.5]</td>
<td>Ecosystems of Canada</td>
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<tr>
<td>GEOG 2200 [0.5]</td>
<td>Global Connections</td>
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<tr>
<td>GEOG 2500 [0.5]</td>
<td>Climate Change: Social Science Perspectives</td>
</tr>
<tr>
<td>GEOG 3026 [0.5]</td>
<td>Topics in the Geography of Canada</td>
</tr>
<tr>
<td>GEOG 3103 [0.5]</td>
<td>Watershed Hydrology</td>
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<tr>
<td>GEOG 3501 [0.5]</td>
<td>Geographies of the Canadian North</td>
</tr>
<tr>
<td>GEOG 4004 [0.5]</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>GEOG 4104 [0.5]</td>
<td>Microclimatologie</td>
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<tr>
<td>GEOG 4108 [0.5]</td>
<td>Permafrost</td>
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<tr>
<td>MGDS 2000 [0.5]</td>
<td>Global Migration and Transnationalism</td>
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<tr>
<td>HIST 2304 [1.0]</td>
<td>Social and Cultural History of Canada</td>
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<td>HIST 2311 [0.5]</td>
<td>Environmental History of Canada</td>
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<tr>
<td>HIST 3205 [0.5]</td>
<td>Canadian Business History</td>
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<td>HIST 3206 [0.5]</td>
<td>Place and Politics in Canadian History</td>
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<tr>
<td>HIST 3209 [0.5]</td>
<td>Canadian Urban History</td>
</tr>
<tr>
<td>HIST 3220 [0.5]</td>
<td>Canadian Economic History</td>
</tr>
<tr>
<td>HIST 3301 [0.5]</td>
<td>Quebec Since 1800</td>
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<tr>
<td>HIST 3304 [0.5]</td>
<td>Canada-United States Relations</td>
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<tr>
<td>HIST 3306 [0.5]</td>
<td>Canada's International Policies</td>
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<tr>
<td>HIST 3505 [0.5]</td>
<td>Women in Canada</td>
</tr>
<tr>
<td>HUMR 2401 [0.5]</td>
<td>Political Repression</td>
</tr>
<tr>
<td>HUMR 3302 [0.5]</td>
<td>Culture, Religion, and Women's Human Rights</td>
</tr>
<tr>
<td>HUMR 4404 [0.5]</td>
<td>Rights of Refugees and Displaced Persons</td>
</tr>
</tbody>
</table>

**Indigenous Studies**

Students may use INDG courses as approved Canadian Studies electives, provided they have met their core program requirements.

**Journalism**

JOUR 2501 [0.5] | Media Law |

**Law**

LAWS 1001 [0.5] | Introduction to Legal Studies 1 |
LAWS 1002 [0.5] | Introduction to Legal Studies 2 |
LAWS 2201 [0.5] | Persons and Property |
LAWS 2202 [0.5] | Obligations |
LAWS 2301 [0.5] | Criminal Justice System |
LAWS 2302 [0.5] | Criminal Law |
LAWS 2501 [0.5] | Law, State and Constitution |
LAWS 2502 [0.5] | Law, State and Citizen |
LAWS 3001 [0.5] | Women and the Legal Process |
LAWS 3003 [0.5] | Contracts |
LAWS 3205 [0.5] | Consumer Law |
LAWS 3209 [0.5] | Canadian Correctional Policies in Historical Perspective |
LAWS 3305 [0.5] | Crime and State in History |
LAWS 3306 [0.5] | Crime, Law, Process and Politics |
LAWS 3307 [0.5] | Youth and Criminal Law |
LAWS 3405 [0.5] | Labour Law |
LAWS 3500 [0.5] | Constitutional Law |
LAWS 3501 [0.5] | Law in the Information Society |
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>LAWS 3502</td>
<td>Regulating Freedom of Expression in Canada</td>
</tr>
<tr>
<td>LAWS 3503</td>
<td>Equality and Discrimination</td>
</tr>
<tr>
<td>LAWS 3504</td>
<td>Law and Aboriginal Peoples</td>
</tr>
<tr>
<td>LAWS 3506</td>
<td>Administrative Law</td>
</tr>
<tr>
<td>LAWS 3509</td>
<td>The Charter of Rights Topics</td>
</tr>
<tr>
<td>LAWS 3804</td>
<td>Law of the Family</td>
</tr>
<tr>
<td>LAWS 4006</td>
<td>Religion and State in Canada</td>
</tr>
<tr>
<td>LAWS 4100</td>
<td>Modern Legal Theory</td>
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<tr>
<td>LAWS 4303</td>
<td>Drugs, The User and The State</td>
</tr>
<tr>
<td>LAWS 4308</td>
<td>Sentencing</td>
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<tr>
<td>LAWS 4309</td>
<td>State Security and Dissent</td>
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<td>LAWS 4311</td>
<td>Human Rights in Canadian Prisons</td>
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<td>LAWS 4504</td>
<td>Indigenous Criminal Justice</td>
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<td>LAWS 4507</td>
<td>Administrative Law and Control</td>
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**Music**

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<tr>
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<tbody>
<tr>
<td>MUSI 3103</td>
<td>Music in Canada</td>
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<tr>
<td>MUSI 3104</td>
<td>Popular Musics of Canada</td>
</tr>
<tr>
<td>MUSI 3302</td>
<td>Music and Gender I</td>
</tr>
<tr>
<td>MUSI 4103</td>
<td>Ethnomusicology of Canadian Traditions</td>
</tr>
<tr>
<td>MUSI 4104</td>
<td>First Peoples Music in Canada</td>
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**Political Science**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>PSCI 2002</td>
<td>Canadian Politics and Civil Society</td>
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<tr>
<td>PSCI 2003</td>
<td>Canadian Political Institutions</td>
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<tr>
<td>PSCI 3000</td>
<td>Canadian Provincial Politics</td>
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<tr>
<td>PSCI 3004</td>
<td>Political Parties and Elections in Canada</td>
</tr>
<tr>
<td>PSCI 3005</td>
<td>Ontario Government and Politics</td>
</tr>
<tr>
<td>PSCI 3006</td>
<td>Social Power in Canadian Politics</td>
</tr>
<tr>
<td>PSCI 3007</td>
<td>Constitutional Politics in Canada</td>
</tr>
<tr>
<td>PSCI 3303</td>
<td>Feminist Political Theory</td>
</tr>
<tr>
<td>PSCI 3401</td>
<td>Canadian Public Administration</td>
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<td>PSCI 3402</td>
<td>Canadian Public Policy</td>
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<td>PSCI 3606</td>
<td>Canadian Foreign Policy</td>
</tr>
<tr>
<td>PSCI 3607</td>
<td>North American Security and Defence Policy</td>
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<tr>
<td>PSCI 3608</td>
<td>Migration Governance</td>
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<tr>
<td>PSCI 4001</td>
<td>Topics in Canadian Government and Politics</td>
</tr>
<tr>
<td>PSCI 4003</td>
<td>Politics and the Media</td>
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<tr>
<td>PSCI 4005</td>
<td>Canadian Federalism</td>
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<tr>
<td>PSCI 4006</td>
<td>Legislatures and Representation in Canada</td>
</tr>
<tr>
<td>PSCI 4009</td>
<td>Quebec Politics</td>
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<tr>
<td>PSCI 4010</td>
<td>Executive Power in Canadian Politics</td>
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<td>PSCI 4107</td>
<td>Political Participation in Canada</td>
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<tr>
<td>PSCI 4109</td>
<td>The Politics of the Canadian Charter of Rights and Freedoms</td>
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<tr>
<td>PSCI 4204</td>
<td>Elections</td>
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<tr>
<td>PSCI 4209</td>
<td>Westminster Democracies: Parliaments, Parties and Elections</td>
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**Religion**

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>RELI 2712</td>
<td>Religious Diversity of Canada</td>
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**Sexuality Studies**

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>SXST 2101</td>
<td>Sexuality Studies: A Critical Introduction</td>
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**Social Work**

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>SOWK 3804</td>
<td>Law of the Family</td>
</tr>
<tr>
<td>SOWK 4102</td>
<td>Indigenous Peoples and Social Policy</td>
</tr>
<tr>
<td>SOWK 4103</td>
<td>Practice and Policy in Immigration</td>
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**Sociology/Anthropology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ANTH 2020</td>
<td>Race and Ethnicity</td>
</tr>
<tr>
<td>ANTH 2620</td>
<td>Ethnography of Sub-Saharan Africa</td>
</tr>
<tr>
<td>ANTH 2630</td>
<td>Studies in Asian Societies: Current Issues in Anthropological Research</td>
</tr>
<tr>
<td>ANTH 2640</td>
<td>Andean Ethnography</td>
</tr>
<tr>
<td>ANTH 2650</td>
<td>Ethnography of Mesoamerica</td>
</tr>
<tr>
<td>ANTH 2660</td>
<td>Ethnography of North Africa</td>
</tr>
<tr>
<td>ANTH 2670</td>
<td>Ethnography of Brazil</td>
</tr>
<tr>
<td>ANTH 3020</td>
<td>Studies in Race and Ethnicity</td>
</tr>
<tr>
<td>ANTH 3045</td>
<td>Children and Childhood in a Globalized World</td>
</tr>
<tr>
<td>ANTH 3600</td>
<td>Studies in Anthropology and Indigenous Peoples</td>
</tr>
<tr>
<td>ANTH 3570</td>
<td>Studies in Art, Culture and Society</td>
</tr>
<tr>
<td>ANTH 4610</td>
<td>Advanced Studies in Indigenous Peoples</td>
</tr>
<tr>
<td>ANTH 4620</td>
<td>Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research</td>
</tr>
<tr>
<td>ANTH 4730</td>
<td>Colonialism and Post-Colonialism</td>
</tr>
<tr>
<td>ANTH 4750</td>
<td>Advanced Studies in Globalization and Citizenship</td>
</tr>
<tr>
<td>SOCI 1001</td>
<td>Introduction to Sociology I</td>
</tr>
<tr>
<td>SOCI 1002</td>
<td>Introduction to Sociology II</td>
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<tr>
<td>SOCI 1003</td>
<td>Introduction to Sociological Perspectives</td>
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<td>SOCI 2010</td>
<td>Critical Approaches to Economic Inequality</td>
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<td>SOCI 2020</td>
<td>Race and Ethnicity</td>
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<tr>
<td>SOCI 2043</td>
<td>Sociology of the Family</td>
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<tr>
<td>SOCI 2045</td>
<td>Gender and Society</td>
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<td>SOCI 3019</td>
<td>Sociology of International Migration</td>
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<td>SOCI 3020</td>
<td>Studies in Race and Ethnicity</td>
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<tr>
<td>SOCI 3040</td>
<td>Studies in the Sociology of Gender</td>
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<tr>
<td>SOCI 3045</td>
<td>Children and Childhood in a Globalized World</td>
</tr>
<tr>
<td>SOCI 3420</td>
<td>Studies in Gender and Criminal Justice</td>
</tr>
<tr>
<td>SOCI 3570</td>
<td>Studies in Art, Culture and Society</td>
</tr>
<tr>
<td>SOCI 4040</td>
<td>Feminist Sociology of Intersectionality</td>
</tr>
<tr>
<td>SOCI 4750</td>
<td>Advanced Studies in Globalization and Citizenship</td>
</tr>
</tbody>
</table>

**Indigenous Studies Electives**

The following courses are deemed by the School of Indigenous and Canadian Studies to have significant Indigenous content, and can be included where appropriate as part of a minor in Indigenous Studies. Carleton courses not on this list may be applied as

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approved Indigenous Studies electives, but they must be approved by the Undergraduate Supervisor. Students taking courses at the University of Ottawa should consult with the Undergraduate Supervisor to gain approval for substituting them as approved Indigenous Studies electives.

**African Studies**
- AFRI 1001 [0.5] Introduction to African Studies I
- AFRI 1002 [0.5] Introduction to African Studies II
- AFRI 3001 [0.5] Globalization and Popular Culture in Africa
- AFRI 3100 [0.5] African Studies Abroad: Selected Topics
- AFRI 4000 [0.5] Advanced Topics in African Studies
- AFRI 4050 [0.5] Selected Topics in African Studies

**Anthropology**
- ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
- ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa
- ANTH 2630 [0.5] Studies in Asian Societies: Current Issues in Anthropological Research
- ANTH 2640 [0.5] Andean Ethnography
- ANTH 2650 [0.5] Ethnography of Mesoamerica
- ANTH 2660 [0.5] Ethnography of North Africa
- ANTH 2670 [0.5] Ethnography of Brazil
- ANTH 3570 [0.5] Studies in Art, Culture and Society
- ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples
- ANTH 4610 [0.5] Advanced Studies in Indigenous Peoples
- ANTH 4620 [0.5] Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
- ANTH 4730 [0.5] Colonialism and Post-Colonialism

**Art History**
- ARTH 2005 [0.5] Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
- ARTH 2006 [0.5] Arts of the First Peoples: The Southwest, the West Coast and the Arctic
- ARTH 2008 [0.5] Inuit Art
- ARTH 4005 [0.5] Topics in Contemporary Indigenous Art

**Canadian Studies**
- CDNS 4800 [1.0] Internship Practicum
- CDNS 4801 [0.5] Internship/Practicum
- CDNS 4802 [0.5] Internship/Practicum
- CDNS 4901 [0.5] Selected Topics in Canadian Studies
- CDNS 4902 [0.5] Selected Topics in Canadian Studies
- CDNS 4903 [0.5] Études dirigées I
- CDNS 4904 [0.5] Études dirigées II
- CDNS 4905 [0.5] Directed Studies I
- CDNS 4906 [0.5] Directed Studies II
- CDNS 4907 [1.0] Directed Studies III
  (Provided they have Indigenous content)

**Child Studies**
- CHST 3002 [0.5] Special Topics in Child Studies

**English**
- ENGL 2709 [0.5] Indigenous Drama
- ENGL 2926 [0.5] African Literatures I
- ENGL 2927 [0.5] African Literatures II
- ENGL 2936 [0.5] South Asian Literatures I
- ENGL 2937 [0.5] South Asian Literatures II
- ENGL 2956 [0.5] Literatures of the Americas I
- ENGL 2957 [0.5] Literatures of the Americas II
- ENGL 3960 [0.5] Studies in Indigenous Literature
- ENGL 3965 [0.5] Intro to Postcolonial Theory
- ENGL 3972 [0.5] Studies in Postcolonial Literature
- ENGL 4960 [0.5] Indigenous Literatures I
- ENGL 4961 [0.5] Indigenous Literatures II
- ENGL 4975 [0.5] Issues in Postcolonial Theory
- ENGL 4976 [0.5] Issues in Postcolonial Literature

**First Year Seminar**
- FYSM 1900 [1.0] Selected Topics In the Study of Academic Discourses (specifically the section on Aboriginal Topics)

**Geography**
- GEG 3209 [0.5] Sustainability and Environment in the South
- GEG 3501 [0.5] Geographies of the Canadian North

**History**
- HIST 2308 [0.5] Colonial Latin America
- HIST 2309 [0.5] Modern Latin America
- HIST 2311 [0.5] Environmental History of Canada
- HIST 2706 [0.5] Ancient and Pre-Colonial Africa
- HIST 2707 [0.5] Modern Africa
- HIST 2710 [0.5] Introduction to Caribbean History
- HIST 3505 [0.5] Women in Canada
- HIST 3510 [0.5] Indigenous Peoples of Canada
- HIST 3511 [0.5] Themes in Indigenous History
- HIST 3704 [0.5] Aztecs
- HIST 3710 [0.5] Themes in Caribbean History
- HIST 3712 [0.5] Mexico: Aztecs to Narcos
- HIST 3713 [0.5] Gender and Sexuality in Latin America
- HIST 3715 [0.5] Themes in South Asian History
- HIST 3717 [0.5] Gender and Sexuality in Africa

**Human Rights**
- HUMR 3503 [0.5] Global Environmental Justice
- HUMR 4502 [0.5] Global Indigenous Knowledges and Movements

**Latin and Carribean Studies**
- LACS 1001 [0.5] Introduction to Latin American and Caribbean Studies I
- LACS 1002 [0.5] Introduction to Latin American and Caribbean Studies II
- LACS 4001 [0.5] Issues in Latin American and Caribbean Studies

**Law**
- LAWS 2201 [0.5] Persons and Property
- LAWS 2202 [0.5] Obligations
- LAWS 2501 [0.5] Law, State and Constitution
- LAWS 2502 [0.5] Law, State and Citizen
LAWS 3504 [0.5] Law and Aboriginal Peoples
LAWS 4504 [0.5] Indigenous Criminal Justice

**Linguistics and Language Studies**

- LANG 1010 [0.5] Introduction to a Language I
- LANG 1020 [0.5] Introduction to a Language II
  (When the language offered is an Indigenous language of Canada)

**Music**

- MUSI 3106 [0.5] Popular Musics of the World
- MUSI 4104 [0.5] First Peoples Music in Canada
- MUSI 4105 [0.5] Issues and Processes in African Music

**Political Science**

- PSCI 3101 [0.5] Politics of War in Africa
- PSCI 3105 [0.5] Imperialism
- PSCI 3203 [0.5] Government and Politics in the Middle East
- PSCI 3204 [0.5] Politics of Latin America
- PSCI 3205 [0.5] Mexican Politics
- PSCI 3700 [0.5] Government and Politics of South Asia
- PSCI 4109 [0.5] The Politics of the Canadian Charter of Rights and Freedoms
- PSCI 4203 [0.5] Southern Africa After Apartheid
- PSCI 4206 [0.5] Indigenous Politics of North America
- PSCI 4207 [0.5] Globalization, Adjustment and Democracy in Africa

**Religion**

- RELI 2720 [0.5] Indigenous Religions of Canada
- RELI 2800 [0.5] Indigenous Traditions

**Sexuality Studies**

- SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
- SXST 3104 [0.5] Transnational Sexualities

**Social Work**

- SOWK 4102 [0.5] Indigenous Peoples and Social Policy

**South Asian Studies**

- SAST 1001 [0.5] Introduction to South Asian Studies I
- SAST 1002 [0.5] Introduction to South Asian Studies II

**Women’s and Gender Studies**

- WGST 2800 [0.5] Intersectional Identities
- WGST 3803 [0.5] Feminisms and Transnationalism
- WGST 3807 [0.5] Gendered Violence

**Language Requirement**

The School of Indigenous and Canadian Studies requires students in its Honours, Combined Honours and 15 credit programs to demonstrate proficiency in a language other than English, normally French or an Indigenous language. Proficiency is normally demonstrated through the completion of 1.0 credit in FREN, or FINS 2105 and FINS 3105; or approved equivalent. For students who consider that they have proficiency in French, the School of Canadian Studies conducts a French language examination in September and January. For students who consider that they have proficiency in an Indigenous language, the onus is on the student to provide suitable documentary evidence of proficiency to the School of Canadian Studies.

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESNA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**


**Subject codes:** AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**

**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOL, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECON, ELEC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, SYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**

**Subject codes:** ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

**Declared and Undeclared Students**
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

**Change of Program Within the B.A. Degree**
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfill the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Admissions Information**
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific
course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

• Bachelor of Arts (B.A.)(Honours)
• Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.
The six 4U or M courses must include a 4U course in English (or anglais ). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement.
Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Canadian Studies (CDNS) Courses

CDNS 1000 [1.0 credit]
Introduction to Canadian Studies
Introduction to interdisciplinary Canadian Studies and diversity's role in defining Canada. Examination of the relationship between national identity and values in an evolving Canada. Topics include: Indigenous peoples, language and ethnicity, race, technology, gender, the arts, and international relations.
Two hour lecture, one hour weekly discussion group.

CDNS 1001 [0.5 credit]
Studying Canada
Introduction to interdisciplinary Canadian Studies and approaches to the critical study of Canada.
Lectures/groups three hours a week.

CDNS 1002 [0.5 credit]
Themes in the Study of Canada
Examination of various themes and issues that affect Canadians and Canadian society. Topics may include Indigenous peoples, literature, language and ethnicity, race, gender, culture and cultural producers, the environment, and international relations.
Lectures/groups three hours a week.

CDNS 1101 [0.5 credit]
Ottawa: Exploring National Institutions
An interdisciplinary examination of Ottawa, looking at its history, evolution, and role as Canada's capital. This course investigates various national institutions related to public policy, governance, history, culture and the arts.
Field trips and topics vary from year to year.
Includes: Experiential Learning Activity
Lecture/groups three hours a week.

CDNS 1102 [0.5 credit]
Introduction to Canada and the World
Introductory examination of interdisciplinary themes, ideas, and debates related to Canada and its place in the world.
Topics vary from year to year.
Lecture/groups three hours a week.

CDNS 2000 [0.5 credit]
Debating Canada
An in-depth examination of key debates that have shaped the nature of Canada, focusing on major thinkers and the debates their ideas produced. Topics vary annually.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.

CDNS 2210 [0.5 credit]
Introduction to the Study of Canadian Culture
The challenges of constructing a national culture in Canada. Topics may include: colonialism and its cultural legacies, cultural nationalism, cultural policies and institutions, popular culture, technology, regionalism, fears of Americanization, gender, multiculturalism, globalization and cultural hybridity.
Precludes additional credit for CDNS 2200.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.
CDNS 2300 [0.5 credit]
Critical Nationalism
This course questions whether a national identity is possible or even desirable within an increasingly diverse and complex Canada. Examination of the construction of Canadian identities, competing nationalism within Canadian borders and critical evaluation of the role of nationalism.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.

CDNS 2400 [0.5 credit]
Heritage Conservation in Canada
Approaches to heritage conservation. Topics include built heritage, movable heritage, collections and museums, and intangible heritage. Heritage as a source of memory and identity in Canadian and Aboriginal life.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.

CDNS 2510 [0.5 credit]
Introduction to Québec Society (English version)
This course surveys geographical, historical, demographic, cultural, political and social developments in Québec, relations with English Canada and debates on identity and nationalism. Also available in French as CDNS 2511/ FINS 2511.
Also listed as FINS 2510.
Precludes additional credit for CDNS 2511 and FINS 2511.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours per week.

CDNS 2511 [0.5 credit]
Introduction à la société et à la culture québécoises (version française)
Ce cours permettra de découvrir et d'analyser des référents dominants de la trame historique du Québec de même que les débats entourant l'identité et le nationalism et les relations avec le Canada anglais.
Also listed as CDNS 2510/FINS 2510 (English), FINS 2511 (French).
Precludes additional credit for CDNS 2510/ FINS 2510.
Prerequisite(s): niveau de deuxième année ou permission de L'École d'études canadiennes.
Exclusivement en ligne. Équivalent d'un cours de trois heures par semaine, accessible toute la semaine.

CDNS 2600 [0.5 credit]
Branding Canada
What does it mean to sell a country the same way one sells coffee? This course examines the rise of national-branding in Canada. It discusses the ways governments brand Canada internationally and domestically and the ways corporations brand themselves as "Canadian" to customers.
Two hour lecture and one hour discussion group a week.

CDNS 3000 [0.5 credit]
Producing Knowledge
Investigates the theory and methods used in qualitative approaches to research, offering hands-on experience and discussion of the underlying beliefs and claims implicit in scholarly work. Examines the ethical and practical dilemmas confronting researchers and develops student skills in gathering, interpreting, and presenting knowledge.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Canadian Studies or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3400 [0.5 credit]
Feminists and Feminism in Canada
Interdisciplinary examination of feminism's impact on Canadian history, culture and politics, and Canadian approaches to feminism in a global context. Surveys the role of feminist thinkers, activists and organizations in shaping Canadian society.
Also listed as WGST 3400.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3550 [0.5 credit]
Interfaces between English and French Canadian Cultures
Exploration of intercultural encounters between French and English Canadians in political, popular and "official" cultures, through an examination of media, art, music, literature, cinema and the built environment.
Also listed as FINS 3550.
Precludes additional credit for CDNS 2500 and FINS 2500.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3600 [0.5 credit]
Cultural Politics and Identities in Canada
Interdisciplinary study of questions related to identity, belonging, and Canadianness. Intersections of individual and group dimensions of "being Canadian" and state efforts to define the Canadian identity. Topics may include: religion, sexuality, immigrant and diasporic relations, race and ethnicity, region, nationalisms, and multiculturalism.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3610 [0.5 credit]
The Canadian Political Economy Tradition
An examination of the political economy tradition in Canada, looking at explanations of Canada's political, economic, social and cultural development, and Canada's evolving position in the global economy.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.
CDNS 3620 [0.5 credit]  
*Canada-US Relations*  
Comparative, interdisciplinary examination of Canada and the United States, including the evolution of the Canada-US relationship. Historical, sociological, cultural, and political approaches are used. Topics covered may include the economy, defence, foreign policy, diplomacy, borderlands, Indigenous peoples, and culture.  
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.  
Seminar three hours a week.

CDNS 3700 [0.5 credit]  
*Cultural Traditions in Canada*  
Aspects of cultural heritage, folklore and/or cultural traditions in Canadian folk art, music, dance, storytelling and performance. The genesis of these various expressions, and the cultural contexts that have ensured their survival.  
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.  
Seminar three hours a week.

CDNS 3901 [0.5 credit]  
*Selected Topics in Canadian Studies*  
Topics vary from year to year.  
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.  
Seminar three hours a week.

CDNS 4000 [0.5 credit]  
*Capstone Seminar in Advanced Research in Canadian Studies*  
Emphasis on refining analytic and research skills, including teamwork skills and using knowledge to solve problems outside the university. Students will engage in a collective research project in partnership with a local, national or international organization.  
Includes: Experiential Learning Activity  
Prerequisite(s): CDNS 3000 and fourth-year standing in Canadian Studies or permission of the School of Indigenous and Canadian Studies.  
Seminar three hours a week.

CDNS 4010 [0.5 credit]  
*Language, Culture, and Power in Canada*  
The relationship between language use and political, economic, and cultural power in Canada. Topics may include cultural and linguistic pluralism, bilingualism, Aboriginal language revitalization, discourses of endangerment, the role of media and the state and in legitimizing language use.  
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.  
Seminar three hours a week.

CDNS 4200 [0.5 credit]  
*Canadian Popular Culture*  
An interdisciplinary seminar using cultural studies methods to explore how popular cultural texts, images, rituals and practices are constructed, disseminated, regulated, consumed and reappropriated by Canadian institutions, corporations, cultural groups and individuals.  
Prerequisite(s): fourth-year honours standing, or permission of the School.  
Seminar three hours a week.

CDNS 4300 [0.5 credit]  
*Contested Spaces and Communities*  
Exploration of the relationship between space, culture, and identities in Canada. Analysis of concepts, practices and conflicts which may include: urban/rural space, the suburbs, regionalism, gender and space, public/private space, national spaces, borderlands, Indigenous territories, cultural survival, collective identity, and memory.  
Prerequisite(s): fourth-year honours standing or permission of the School of Indigenous and Canadian Studies.  
Seminar three hours a week.

CDNS 4400 [0.5 credit]  
*Cultural Landscape and Cultural Identity in Canada*  
Cultural landscape appreciation and the development of Canadian individual and collective cultural identities, through the lenses of history, geography, planning, and representational/literary sources of expression. Cultural landscapes as a tool for understanding physical and mental landscapes and their shaping of identity.  
Precludes additional credit for CDNS 3200.  
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.  
Seminar three hours a week.

CDNS 4403 [0.5 credit]  
*Heritage Conservation and Sustainability*  
Exploration of the recent shift in heritage conservation discourse that embraces objectives of environmental, social, and economic sustainability. Investigation of synergies and gaps between natural and cultural conservation ideas. Introduction to theory, principles and practices through analysis of Canadian and international research, policy and projects.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.  
Also offered at the graduate level, with different requirements, as CDNS 5403, for which additional credit is precluded.  
Seminar three hours a week.
CDNS 4500 [0.5 credit]
Canada and the World
Interdisciplinary examination of Canada's role in the global political economy and its impact on issues such as work, community, public services, and the state.
Precludes additional credit for CDNS 3301.
Prerequisite(s): fourth-year honours standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 4510 [0.5 credit]
Québec Studies
Advanced seminar focusing on selected aspects of Québec history, society, culture and/or politics.
Also listed as FINS 4510.
Precludes additional credit for CDNS 3510 (no longer offered), FINS 3510 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 4800 [1.0 credit]
Internship Practicum
Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.
Includes: Experiential Learning Activity
Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.
Prerequisite(s): permission of the School and fourth-year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4801 [0.5 credit]
Internship/Practicum
Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.
Includes: Experiential Learning Activity
Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.
Prerequisite(s): permission of the School and fourth-year Honours standing in a Indigenous and Canadian Studies program.

CDNS 4802 [0.5 credit]
Internship/Practicum
Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.
Includes: Experiential Learning Activity
Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.
Prerequisite(s): permission of the School and fourth year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4901 [0.5 credit]
Selected Topics in Canadian Studies
Topics vary from year to year.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4902 [0.5 credit]
Selected Topics in Canadian Studies
Topics vary from year to year.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4903 [0.5 credit]
Études dirigées I
Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (Mention : Français). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4904 [0.5 credit]
Études dirigées II
Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (Mention : Français). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.
Prerequisite(s): permission of the School.

CDNS 4905 [0.5 credit]
Directed Studies I
An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year Graduate students. Includes supervised reading and written work in a Canadian Studies area.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.
CDNS 4906 [0.5 credit]
Directed Studies II
An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4907 [1.0 credit]
Directed Studies III
An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

Indigenous Studies (INDG) Courses
INDG 1000 [1.0 credit]
Introduction to Indigenous Studies
Survey of historical and contemporary issues relating to Indigenous peoples in Canada. Cultural traditions and the social interactions between Indigenous and non-Indigenous societies are approached from an interdisciplinary perspective.
Precludes additional credit for INDG 1010 and INDG 1011.
Online only.

INDG 1010 [0.5 credit]
Introduction to Indigenous Peoplehood Studies
This course begins by looking at Creation Stories of different Indigenous peoples and builds to discuss Indigenous worldviews, ways of living, ecological relationships, inter-Indigenous relations and diplomacy among Indigenous peoples. Course materials are rooted in self-situated and collective understandings of Indigenous peoples.
Precludes additional credit for INDG 1000.
Lecture/groups, three hours a week.

INDG 1011 [0.5 credit]
Introduction to Indigenous-Settler Encounters
An interdisciplinary examination of the history of relations between different Indigenous peoples and settler populations from first meetings to the mid-20th century. Topics vary by year, but may include diplomatic relations, trade, spirituality and religion, military alliances, policy, education.
Precludes additional credit for INDG 1000.
Lecture/groups, three hours a week.

INDG 2011 [0.5 credit]
Contemporary Indigenous Studies
Indigenous and non-Indigenous perspectives on issues since the 1960s. Topics include: contemporary explorations of treaty relationship and governance, cultural appropriation, identity politics, urban Aboriginality and contemporary social and cultural issues.
Precludes additional credit for CDNS 2100 and CDNS 2011.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.

INDG 2012 [0.5 credit]
Anishinaabe Studies
In-depth look at the Anishinaabe peoples. Topics may include: Anishinaabe creation stories, migration, the clan system, worldviews; oral, written, and recorded history; treaties, contemporary events, ecological knowing, cultural production, relations with settler-colonies and other nations, self-governance, diplomatic relations.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lecture/groups three hours a week.

INDG 2013 [0.5 credit]
Haudenosaunee Studies
Focuses on the Haudenosaunee from the founding of the Confederacy to present. Discussion of the culture, language, and structure of Haudenosaunee society, the Kaianerekowa (Great Law of Peace) and the Code of Handsome Lake, symbolism, and contemporary issues, including the impact of Euro-Canadian government policies.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lecture/groups, three hours a week.

INDG 2015 [0.5 credit]
Indigenous Ecological Ways of Knowing
Indigenous peoples’ relationships with the non-human world in both historical and contemporary contexts. Topics may include: the origins of Indigenous ecological ways of knowing, Indigenous languages, collective stewardship, water, land, and challenges to maintaining traditional knowledge.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lecture/groups, three hours a week.

INDG 2020 [0.5 credit]
Decolonizing Gender, Sex, and Sexuality
Effects of colonization in unbalancing Indigenous peoples’ lives through the imposition of constructions of gender, sex, and sexuality, and the ways that Indigenous peoples are working to restore balance to their families and communities. Topics vary by year.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lecture/groups, three hours a week.
INDG 2709 [0.5 credit]
Indigenous Drama
A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors and other practitioners. Also listed as ENGL 2709. Prerequisite(s): second-year standing or permission of the School. Lecture three hours per week.

INDG 3001 [0.5 credit]
Indigenous Governance
An examination and discussion of different Indigenous forms of governance. Topics will vary by year and may include: Indigenous ways of knowing and forms of governance, community leadership, diplomatic relations, and struggles for self-determination. Precludes additional credit for INDG 3000 (no longer offered). Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours per week.

INDG 3011 [0.5 credit]
Indigenous Rights, Resistance, and Resurgence
Indigenous approaches to restoring balance within their nations. Topics include: direct action; political organizing; land claims; rights, courts, and legal action; everyday acts of resistance and resurgence such as petitioning, social media, arts-based movements, and community initiatives. Includes: Experiential Learning Activity Precludes additional credit for INDG 3010 (no longer offered). Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours per week.

INDG 3015 [0.5 credit]
Indigenous Ecological Ways of Knowing and the Academy
The relationship between Indigenous traditional ecological knowledges and the academy. Topics include: linguistic barriers, tensions in diffuse ways of knowing, research ethics with respect to Indigenous traditional knowledge, and working with knowledge holders. Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours per week.

INDG 3901 [0.5 credit]
Selected Topics in Indigenous Studies
Topics vary from year to year. Prerequisite(s): third- or fourth-year standing, or permission of the School of Indigenous and Canadian Studies. Seminar three hours per week.

INDG 4001 [0.5 credit]
Indigeneity in the City
This course begins with an examination of the relationship between Indigenous peoples and the construction of cities and urban space. Culminates in the undertaking of research projects that directly link students to the urban Indigenous community in Ottawa. Includes: Experiential Learning Activity Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours per week.

INDG 4011 [0.5 credit]
Indigenous Representations
Through an examination of instances of Indigenous misrepresentation, students will explore how Indigenous peoples have used cultural production in various forms (such as literature, film, television, visual arts, music, performance) to put forth their own visions of their peoples, worldviews, and lives. Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

INDG 4015 [0.5 credit]
Land as a Relation
This is an intensive 14-day field course that brings students together with knowledge holders on the land. The connections between Indigenous ways of knowing, the land, Indigenous languages, and the land’s non-human inhabitants, will be explored. Locations and course fee varies by year. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies. Fourteen-day field course.

INDG 4020 [0.5 credit]
Practicum
Students will learn to apply their knowledge of topics in Indigenous Studies with a local organization whose mandate involves working with and/or for Indigenous peoples. To be arranged in consultation with the Program Coordinator. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

INDG 4901 [0.5 credit]
Selected Topics in Indigenous Studies
Topics vary from year to year. Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours per week.
INDG 4905 [0.5 credit]
Directed Studies I
An optional course normally restricted to fourth-year Honours students in Canadian Studies or Indigenous Studies and to Qualifying-year Graduate students. Includes supervised reading and written work in an Indigenous Studies area. Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Certificate in Nunavut Public Service Studies (C.N.P.S.S.)

This section presents the requirements for programs in:
- Certificate in Nunavut Public Service Studies C.N.P.S.S.

Program Requirements
Certificate in Nunavut Public Service Studies C.N.P.S.S. (5.0 credits)

Requirements:
1. 1.0 credit in:
   - PADM 1501 [0.5] Public Administration in Nunavut
   - PADM 1502 [0.5] Management of Federal-Territorial Relations

2. 1.0 credit in:
   - ENGL 1002 [0.5] Writing and Language I
   - ENGL 1003 [0.5] Writing and Language II

3. 1.0 credit in:
   - BUSI 1001 [0.5] Principles of Financial Accounting
   - BUSI 2101 [0.5] Organizational Behaviour

4. 1.0 credit in:
   - ECON 1001 [0.5] Introduction to Microeconomics
   - ECON 1002 [0.5] Introduction to Macroeconomics

5. 0.5 credit in:
   - HIST 1010 [0.5] History of Northern Canada

6. 0.5 credit in:
   - PSCI 1100 [0.5] Democracy in Theory and Practice

Total Credits: 5.0

Regulations
See the Academic Regulations of the University section of this Calendar.

This Certificate program is designed primarily for prospective or practicing public employees in Nunavut who seek special training in public service subjects at the undergraduate level.

Courses taken for the Certificate may be credited towards a Bachelor of Arts degree. A transfer student from the Certificate program into the Bachelor of Arts program normally will be required to take at least 10.0 further credits. At least 5.0 of the credits required for the degree must be completed after awarding of the Certificate.

Academic Standing
A candidate for the Certificate must obtain a grade of C or higher in at least half of the credits taken at Carleton University for the Certificate.

Admissions Information

Certificate
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais) with a grade of 60 percent or higher. For applicants whose first language is not English, the requirement of 4U English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar. Special consideration will be extended to other applicants under Mature Applicant regulations (see Mature and Special Admissions, in the Admissions Regulations and Procedures section of this Calendar).

Candidates may be admitted with advanced standing, but must take at least 3.0 credits for the Certificate from Carleton University.

Certificate in Science and Policy

This section presents the requirements for programs in:
- Certificate in Science and Policy

Certificate in Science and Policy (5.0 credits)

May be taken following successful completion of a college diploma or equivalent with a minimum average grade of B or concurrently with an Honours degree or Bachelor of Engineering degree, with completion of a minimum of 4.0 credits, and a minimum CGPA of 7.0.

Requirements
1. 1.5 credits in:
   - ISAP 2001 [0.5] Foundations in Critical Inquiry
   - PAPM 1001 [0.5] Policy: Analysis, Implementation, and Evaluation
   - PSCI 2003 [0.5] Canadian Political Institutions
Chemistry

This section presents the requirements for programs in:
- Chemistry B.Sc. Honours
- Chemistry B.Sc.
- Chemistry with Concentration in Chemical Toxicology B.Sc. Honours
- Chemistry with Concentration in Nanotechnology B.Sc. Honours
- Chemistry and Earth Sciences B.Sc. Combined Honours
- Chemistry and Physics B.Sc. Combined Honours
- Minor in Chemistry

Graduation Requirements

In addition to the requirements listed below, students must satisfy:

1. the University regulations (see the Academic Regulations of the University section of this Calendar),
2. the common regulations applying to all B.Sc. programs including those relating to Science Continuation and Breadth requirements (see the Academic Regulations for the Bachelor of Science Degree).

Students should consult with the Department when planning their program and selecting courses.

Program Requirements

Chemistry

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 6.5 credits in:

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<tr>
<th>Course Code</th>
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2. 0.5 credit in ISCI 1001 for students in a non-science program or any 1000-level Approved Science course for students in a science or engineering program

3. 1.5 credits in:

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4. 0.5 credit in:

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5. 0.5 credit in Science Approved Electives for students in a non-science program or Public Affairs Approved Electives for students in a science or engineering program

6. 0.5 credit in Science or Public Affairs Approved Electives

Total Credits: 20.0

Chemistry

B.Sc. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 5.0 credits in:

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2. 1.0 credit from:

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<tr>
<td>CHEM 4908</td>
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3. 1.0 credit from:

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<td>CHEM 3106</td>
<td>1.0</td>
</tr>
</tbody>
</table>

4. 0.5 credit in:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 3401</td>
<td>0.5</td>
</tr>
</tbody>
</table>

5. 1.0 credit in CHEM at the 4000 level, or 0.5 credit in CHEM at the 4000 level and:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 3102</td>
<td>0.5</td>
</tr>
</tbody>
</table>

6. 0.5 credit in CHEM at the 3000 or 4000 level

B. Credits Not Included in the Major CGPA (9.5 credits)

7. 2.0 credits in:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1004</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 1107</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 1005</td>
<td>0.5</td>
</tr>
</tbody>
</table>

8. 1.0 credit from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1003</td>
<td>0.5</td>
</tr>
<tr>
<td>PHYS 1007</td>
<td>0.5</td>
</tr>
<tr>
<td>NSCI 1000</td>
<td>0.5</td>
</tr>
</tbody>
</table>

9. 0.5 credit in Science Continuation (not CHEM)

10. 1.0 credit in Science Faculty Electives at the 1000 level

11. 2.0 credits in Science Faculty Electives or Science Continuation Courses

12. 0.5 credit in:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSCI 1000</td>
<td>0.5</td>
</tr>
</tbody>
</table>

13. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000 if not used above)

14. 1.0 credit in free elective.

Total Credits: 20.0
### B.Sc. Honours (20.0 credits) with Concentration in Chemical Toxicology

#### Chemistry

**A. Credits Included in the Major CGPA (11.5 credits)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1001</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 2102</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 2203</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2501</td>
<td>Introduction to Inorganic and Bioorganic Chemistry</td>
</tr>
<tr>
<td>CHEM 3100</td>
<td>Physical Chemistry II</td>
</tr>
<tr>
<td>CHEM 3101</td>
<td>Quantum Chemistry</td>
</tr>
</tbody>
</table>

**2. 0.5 credit from:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 3106</td>
<td>Computational Chemistry Methods Laboratory</td>
</tr>
<tr>
<td>CHEM 3205</td>
<td>Experimental Organic Chemistry</td>
</tr>
<tr>
<td>CHEM 3305</td>
<td>Advanced Analytical Chemistry Laboratory</td>
</tr>
<tr>
<td>CHEM 3503</td>
<td>Inorganic Chemistry I</td>
</tr>
<tr>
<td>CHEM 3107</td>
<td>Experimental Methods in Nanoscience</td>
</tr>
</tbody>
</table>

**3. 0.5 credit in CHEM at the 3000-level**

**B. Credits Not Included in the Major CGPA (9.0 credits)**

**4. 2.0 credits in:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1004</td>
<td>Calculus for Engineering or Physics</td>
</tr>
<tr>
<td>MATH 1107</td>
<td>Linear Algebra I</td>
</tr>
<tr>
<td>MATH 1005</td>
<td>Differential Equations and Infinite Series for Engineering or Physics</td>
</tr>
<tr>
<td>or MATH 2007</td>
<td>Elementary Calculus II</td>
</tr>
<tr>
<td>MATH 2008</td>
<td>Intermediate Calculus</td>
</tr>
</tbody>
</table>

**5. 1.0 credit from:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1003</td>
<td>Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td>&amp; PHYS 1004</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td>PHYS 1007</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td>&amp; PHYS 1008</td>
<td>Elementary University Physics II</td>
</tr>
</tbody>
</table>

**6. 0.5 credit in Science Continuation (not CHEM)**

**7. 1.0 credit in Science Faculty Electives at the 1000 level**

**8. 1.5 credit in Science Faculty Electives or Science Continuation Courses**

**9. 0.5 credit in NSCI 1000 or approved courses outside the faculties of Science and Engineering and Design**

**10. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000, if not used above)**

**11. 1.0 credit in free electives.**

**Total Credits** 15.0

---

### B.Sc. Honours (20.0 credits) with Concentration in Nanotechnology

#### Chemistry

**A. Credits Included in the Major CGPA (10.5 credits)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1001</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 2102</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 2203</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2501</td>
<td>Introduction to Inorganic and Bioorganic Chemistry</td>
</tr>
<tr>
<td>CHEM 3100</td>
<td>Physical Chemistry II</td>
</tr>
<tr>
<td>CHEM 3101</td>
<td>Quantum Chemistry</td>
</tr>
</tbody>
</table>

**2. 0.5 credits from:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 3205</td>
<td>Experimental Organic Chemistry</td>
</tr>
<tr>
<td>CHEM 3305</td>
<td>Advanced Analytical Chemistry Laboratory</td>
</tr>
<tr>
<td>BIOC 3103</td>
<td>Practical Biochemistry I</td>
</tr>
</tbody>
</table>

**3. 1.0 credit in CHEM or BIOC at the 3000 or 4000 level**

**B. Credits Not Included in the Major CGPA (8.5 credits)**

**4. 1.5 credits in:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1004</td>
<td>Calculus for Engineering or Physics</td>
</tr>
<tr>
<td>MATH 1107</td>
<td>Linear Algebra I</td>
</tr>
<tr>
<td>MATH 1005</td>
<td>Differential Equations and Infinite Series for Engineering or Physics</td>
</tr>
<tr>
<td>or MATH 2007</td>
<td>Elementary Calculus II</td>
</tr>
</tbody>
</table>

**5. 1.0 credit from:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1003</td>
<td>Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td>&amp; PHYS 1004</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td>PHYS 1007</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td>&amp; PHYS 1008</td>
<td>Elementary University Physics II</td>
</tr>
</tbody>
</table>

**6. 1.0 credit in:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOI 1103</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOI 1104</td>
<td>Foundations of Biology II</td>
</tr>
</tbody>
</table>

**7. 0.5 credits in:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD 2004</td>
<td>Scientific Communication in Food Science</td>
</tr>
</tbody>
</table>

**8. 1.5 credits in Science Continuation Courses (not CHEM)**

**9. 2.0 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000, if not used above)**

**10. 1.0 credit in free electives**

**Total Credits** 20.0

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UNOFFICIAL 2021-22 Undergraduate Calendar
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2103</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2203</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2501</td>
<td>Introduction to Inorganic and Bioinorganic Chemistry</td>
</tr>
<tr>
<td>CHEM 3100</td>
<td>Physical Chemistry II</td>
</tr>
<tr>
<td>CHEM 3101</td>
<td>Quantum Chemistry</td>
</tr>
<tr>
<td>CHEM 3107</td>
<td>Experimental Methods in Nanoscience</td>
</tr>
<tr>
<td>CHEM 3201</td>
<td>Advanced Organic Chemistry</td>
</tr>
<tr>
<td>CHEM 3503</td>
<td>Inorganic Chemistry I</td>
</tr>
<tr>
<td>CHEM 3600</td>
<td>Introduction to Nanotechnology</td>
</tr>
<tr>
<td>CHEM 4103</td>
<td>Surface Chemistry and Nanostructures</td>
</tr>
<tr>
<td>CHEM 4104</td>
<td>Physical Methods of Nanotechnology</td>
</tr>
<tr>
<td>CHEM 4908</td>
<td>Research Project and Seminar</td>
</tr>
<tr>
<td>MATH 1004</td>
<td>Calculus for Engineering or Physics</td>
</tr>
<tr>
<td>MATH 1107</td>
<td>Linear Algebra I</td>
</tr>
<tr>
<td>MATH 1005</td>
<td>Differential Equations and Infinite Series for Engineering or Physics</td>
</tr>
<tr>
<td>PHYS 1003</td>
<td>Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td>PHYS 1004</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td>PHYS 1007</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td>PHYS 1008</td>
<td>Elementary University Physics II</td>
</tr>
<tr>
<td>MATH 2008</td>
<td>Intermediate Calculus</td>
</tr>
<tr>
<td>ERTH 1009</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 2104</td>
<td>Igneous Systems, Geochemistry and Processes</td>
</tr>
<tr>
<td>ERTH 2105</td>
<td>Geodynamics</td>
</tr>
<tr>
<td>ERTH 2314</td>
<td>Sedimentation and Stratigraphy</td>
</tr>
<tr>
<td>ERTH 2406</td>
<td>Geology and Map Interpretation</td>
</tr>
<tr>
<td>ERTH 2802</td>
<td>Field Geology I</td>
</tr>
<tr>
<td>ERTH 3203</td>
<td>Sedimentology</td>
</tr>
<tr>
<td>ERTT 3206</td>
<td>Sedimentary Depositional Systems (See Note, below)</td>
</tr>
<tr>
<td>ERTT 3003</td>
<td>Geochronology</td>
</tr>
<tr>
<td>ERTT 3204</td>
<td>Mineral Deposits</td>
</tr>
<tr>
<td>ERTT 3207</td>
<td>Metamorphic Petrology and Processes</td>
</tr>
<tr>
<td>ERTT 3806</td>
<td>Structural Geology</td>
</tr>
<tr>
<td>ERTT 1009</td>
<td>The Earth System Through Time</td>
</tr>
<tr>
<td>ERTT 2102</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTT 3806</td>
<td>Structural Geology</td>
</tr>
<tr>
<td>CHEM 4907</td>
<td>Honours Essay and Research Proposal</td>
</tr>
<tr>
<td>CHEM 4908</td>
<td>Research Project and Seminar</td>
</tr>
<tr>
<td>CHEM 4909</td>
<td>Research in Earth Sciences (and 0.5 credit in ERTH at the 4000-level)</td>
</tr>
</tbody>
</table>

### Chemistry and Earth Sciences

**B.Sc. Combined Honours (20.0 credits)**

#### A. Credits Included in the Major CGPA (13.5 credits)

1. **4.0 credits in:**
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - CHEM 2103 [0.5] Physical Chemistry I
   - CHEM 2302 [0.5] Analytical Chemistry I
   - CHEM 2303 [0.5] Analytical Chemistry II
   - CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry
   - CHEM 3100 [0.5] Physical Chemistry II
   - CHEM 3503 [0.5] Inorganic Chemistry

2. **1.0 credit in CHEM at the 4000-level**
   - CHEM 4908 [1.0] Research Project and Seminar

3. **1.0 credits in:**
   - ERTT 1006 [0.5] Exploring Planet Earth
   - ERTT 1009 [0.5] The Earth System Through Time

4. **3.0 credits in:**
   - ERTT 2102 [0.5] Mineralogy to Petrology
   - ERTT 2104 [0.5] Igneous Systems, Geochemistry and Processes
   - ERTT 2105 [0.5] Geodynamics
   - ERTT 2314 [0.5] Sedimentation and Stratigraphy
   - ERTT 2406 [0.5] Geology and Map Interpretation
   - ERTT 2802 [0.5] Field Geology I

5. **0.5 credit from:**
   - ERTT 3203 [0.5] Sedimentology
   - ERTT 3206 [0.5] Sedimentary Depositional Systems (See Note, below)

6. **2.0 credits in:**
   - ERTT 3003 [0.5] Geochronology
   - ERTT 3204 [0.5] Mineral Deposits
   - ERTT 3207 [0.5] Metamorphic Petrology and Processes
   - ERTT 3806 [0.5] Structural Geology

7. **1.0 credit in ERTT at the 4000-level**

8. **1.0 credit from:**
   - CHEM 4907 [1.0] Honours Essay and Research Proposal
   - CHEM 4908 [1.0] Research Project and Seminar
   - ERTT 4908 [1.0] Honours Thesis
   - ERTT 4909 [0.5] Research in Earth Sciences (and 0.5 credit in ERTT at the 4000-level)

#### B. Credits Not Included in the Major CGPA (6.5 credits)

9. **1.0 credit in:**
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1107 [0.5] Linear Algebra I

10. **0.5 credit from:**
    - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
    - MATH 2007 [0.5] Elementary Calculus II

11. **0.5 credit in:**
    - STAT 2507 [0.5] Introduction to Statistical Modeling I

12. **0.5 credit in:**
    - ERTT 2004 [0.5] Maps, Satellites and the Geospatial Revolution

13. **1.0 credit from:**
    - MATH 2007 [0.5] Elementary Calculus II
    - ERTT 1009 [0.5] The Earth System Through Time

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**Total Credits**: 20.0
PHYS 1003 [0.5]  Introductory Mechanics and Thermodynamics  
& PHYS 1004 [0.5]  Introductory Electromagnetism and Wave Motion

PHYS 1007 [0.5]  Elementary University Physics I  
& PHYS 1008 [0.5]  Elementary University Physics II

14. 0.5 credit in:  0.5
    BIOL 1104 [0.5]  Foundations of Biology II

15. 0.5 credit in:  0.5
    Science Faculty Electives (not CHEM or ERTH)

16. 0.5 credit in:  0.5
    NSCI 1000 [0.5]  Seminar in Science (or approved course outside the faculties of Science and Engineering and Design)

17. 1.5 credits in:  1.5
    approved courses outside the faculties of Science and Engineering and Design

Total Credits  20.0

Note: for Item 5 above, ERTH 3203 is required if prerequisite conditions are met.

Chemistry and Physics
B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)

1. 1.0 credit from:

   PHYS 1001 [0.5]  Foundations of Physics I  
   & PHYS 1002 [0.5]  Foundations of Physics II (recommended)

   PHYS 1003 [0.5]  Introductory Mechanics and Thermodynamics  
   & PHYS 1004 [0.5]  Introductory Electromagnetism and Wave Motion

   PHYS 1007 [0.5]  Elementary University Physics I  
   & PHYS 1008 [0.5]  Elementary University Physics II (with an average grade of B- or higher)

2. 3.0 credits in:

   PHYS 2202 [0.5]  Wave Motion and Optics
   PHYS 2305 [0.5]  Electricity and Magnetism
   PHYS 2604 [0.5]  Modern Physics I
   PHYS 3007 [0.5]  Third Year Physics Laboratory: Selected Experiments and Seminars
   PHYS 3701 [0.5]  Elements of Quantum Mechanics
   PHYS 3807 [0.5]  Mathematical Physics I

3. 1.5 credits from:

   PHYS 3308 [0.5]  Electromagnetism
   PHYS 3606 [0.5]  Modern Physics II
   PHYS 3802 [0.5]  Advanced Dynamics
   PHYS 4707 [0.5]  Introduction to Quantum Mechanics I

4. 0.5 credit in PHYS at the 4000 level  0.5

5. 5.0 credits in:  5.0

   CHEM 1001 [0.5]  General Chemistry I
   CHEM 1002 [0.5]  General Chemistry II
   CHEM 2103 [0.5]  Physical Chemistry I
   CHEM 2203 [0.5]  Organic Chemistry I
   CHEM 2204 [0.5]  Organic Chemistry II
   CHEM 2501 [0.5]  Introduction to Inorganic and Bioinorganic Chemistry

   CHEM 3100 [0.5]  Physical Chemistry II
   CHEM 3102 [0.5]  Methods of Computational Chemistry
   CHEM 3503 [0.5]  Inorganic Chemistry I
   CHEM 4102 [0.5]  Advanced Topics in Physical Chemistry II

6. 0.5 credit from:  0.5

   CHEM 3106 [0.5]  Computational Chemistry Methods Laboratory
   CHEM 3107 [0.5]  Experimental Methods in Nanoscience

7. 0.5 credit in CHEM at the 4000 level  0.5

8. 1.0 credit from:

   CHEM 4908 [1.0]  Research Project and Seminar
   PHYS 4909 [1.0]  Fourth-Year Project
   PHYS 4907 plus 0.5 credit in PHYS at the 4000 level
   PHYS 4908 plus 0.5 credit in PHYS at the 4000 level

B. Credits Not Included in the Major CGPA (7.0 credits)

9. 3.0 credits in:

   MATH 1004 [0.5]  Calculus for Engineering or Physics
   MATH 1005 [0.5]  Differential Equations and Infinite Series for Engineering or Physics
   MATH 1104 [0.5]  Linear Algebra for Engineering or Science
   MATH 2004 [0.5]  Multivariable Calculus for Engineering or Physics
   STAT 3502 [0.5]  Probability and Statistics
   MATH 3705 [0.5]  Mathematical Methods I

10. 0.5 credit from:  0.5

    COMP 1005 [0.5]  Introduction to Computer Science I
    ECOR 1606 [0.5]  Problem Solving and Computers

11. 0.5 credit from:  0.5

    MATH 3800 [0.5]  Mathematical Modeling and Computational Methods
    ECOR 2606 [0.5]  Numerical Methods

12. 0.5 credit from:  0.5

    NSCI 1000 [0.5]  Seminar in Science
    Approved courses outside the faculties of Science and Engineering and Design

13. 1.5 credits in:  1.5

    approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000, if not used above)

14. 1.0 credit in free electives.  1.0

Total Credits  20.0

Minor in Chemistry (4.0 credits)
The Minor in Chemistry is available to degree students registered in programs other than those associated with the Department of Chemistry.

Requirements

1. 1.0 credit from:  1.0

   CHEM 1001 [0.5]  General Chemistry I
   & CHEM 1002 [0.5]  General Chemistry II
   or
   CHEM 1005 [0.5]  Elementary Chemistry I
   & CHEM 1006 [0.5]  Elementary Chemistry II
   with a grade of B- or higher in CHEM 1006

2. 3.0 credits in Chemistry at 2000-level or higher  3.0
3. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

**B.Sc. Regulations**

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

**Breadth Requirement for the B.Sc.**

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors.
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

**Declared and Undeclared Students**

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

**Change of Program within the B.Sc. Degree**

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

**Experimental Science Requirement**

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

**Approved Experimental Science Courses**

<table>
<thead>
<tr>
<th>Section</th>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biochemistry</strong></td>
<td>BIOC 2200</td>
<td>[0.5] Cellular Biochemistry</td>
</tr>
<tr>
<td></td>
<td>BIOC 4001</td>
<td>[0.5] Methods in Biochemistry</td>
</tr>
<tr>
<td></td>
<td>BIOC 4201</td>
<td>[0.5] Advanced Cell Culture and Tissue Engineering</td>
</tr>
<tr>
<td><strong>Biology</strong></td>
<td>BIOL 1103</td>
<td>[0.5] Foundations of Biology I</td>
</tr>
<tr>
<td></td>
<td>BIOL 1104</td>
<td>[0.5] Foundations of Biology II</td>
</tr>
<tr>
<td></td>
<td>BIOL 2001</td>
<td>[0.5] Animals: Form and Function</td>
</tr>
<tr>
<td></td>
<td>BIOL 2002</td>
<td>[0.5] Plants: Form and Function</td>
</tr>
<tr>
<td></td>
<td>BIOL 2104</td>
<td>[0.5] Introductory Genetics</td>
</tr>
<tr>
<td></td>
<td>BIOL 2200</td>
<td>[0.5] Cellular Biochemistry</td>
</tr>
<tr>
<td></td>
<td>BIOL 2600</td>
<td>[0.5] Ecology</td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td>CHEM 1001</td>
<td>[0.5] General Chemistry I</td>
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<tr>
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<td>CHEM 1002</td>
<td>[0.5] General Chemistry II</td>
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<td>CHEM 1005</td>
<td>[0.5] Elementary Chemistry I</td>
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<td>CHEM 1006</td>
<td>[0.5] Elementary Chemistry II</td>
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<tr>
<td></td>
<td>CHEM 2103</td>
<td>[0.5] Physical Chemistry I</td>
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<td></td>
<td>CHEM 2203</td>
<td>[0.5] Organic Chemistry I</td>
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<td></td>
<td>CHEM 2204</td>
<td>[0.5] Organic Chemistry II</td>
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<td></td>
<td>CHEM 2302</td>
<td>[0.5] Analytical Chemistry I</td>
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<tr>
<td></td>
<td>CHEM 2303</td>
<td>[0.5] Analytical Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2800</td>
<td>[0.5] Foundations for Environmental Chemistry</td>
</tr>
<tr>
<td><strong>Earth Sciences</strong></td>
<td></td>
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</tr>
</tbody>
</table>

**Good Standing**

Academic Warning
### Course Categories for B.Sc. Programs

#### Science Geography Courses
- **GEOG 1010 [0.5]** Global Environmental Systems
- **GEOG 2006 [0.5]** Introduction to Quantitative Research
- **GEOG 2013 [0.5]** Weather and Water
- **GEOG 2014 [0.5]** The Earth's Surface
- **GEOG 3003 [0.5]** Quantitative Geography
- **GEOG 3010 [0.5]** Field Methods in Physical Geography
- **GEOG 3102 [0.5]** Geomorphology
- **GEOG 3103 [0.5]** Watershed Hydrology
- **GEOG 3104 [0.5]** Principles of Biogeography
- **GEOG 3105 [0.5]** Climate and Atmospheric Change
- **GEOG 3106 [0.5]** Aquatic Science and Management
- **GEOG 3108 [0.5]** Soil Properties
- **GEOG 4000 [0.5]** Field Studies
- **GEOG 4005 [0.5]** Directed Studies in Geography
- **GEOG 4013 [0.5]** Cold Region Hydrology
- **GEOG 4017 [0.5]** Global Biogeochemical Cycles
- **GEOG 4101 [0.5]** Two Million Years of Environmental Change
- **GEOG 4103 [0.5]** Water Resources Engineering
- **GEOG 4104 [0.5]** Microclimatology
- **GEOG 4108 [0.5]** Permafrost

#### Science Psychology Courses
- **PSYC 2001 [0.5]** Introduction to Research Methods in Psychology
- **PSYC 2002 [0.5]** Introduction to Statistics in Psychology
- **PSYC 2700 [0.5]** Introduction to Cognitive Psychology
- **PSYC 3000 [1.0]** Design and Analysis in Psychological Research
- **PSYC 3506 [0.5]** Cognitive Development
- **PSYC 3700 [1.0]** Cognition (Honours Seminar)
- **PSYC 3702 [0.5]** Perception
- **PSYC 2307 [0.5]** Human Neuropsychology I
- **PSYC 3307 [0.5]** Human Neuropsychology II

#### Science Continuation Courses
- A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:
  - **BIOC (Biochemistry)**
  - **BIOL (Biology)**
  - **CHEM (Chemistry)**
  - **COMP (Computer Science)** A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
  - **ERTH (Earth Sciences), except ERTH 2415** which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
  - **Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.**
  - **ENSC (Environmental Science)**
  - **FOOD (Food Science and Nutrition)**
  - **GEOM (Geomatics)**
  - **HLTH (Health Sciences)**
  - **ISAP (Interdisciplinary Science Practice)**
  - **MATH (Mathematics)**
  - **NEUR (Neuroscience)**
  - **PHYS (Physics), except PHYS 2903**
  - **Science Geography Courses (see list above)**
  - **Science Psychology Courses (see list above)**
  - **STAT (Statistics)**
  - **TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.**
## Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

- BIOC (Biochemistry)
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

## Engineering

- ENSC 2001

## Food (Food Science and Nutrition)

- FOOD

## Health Science

- HLTH (Health Science)

## Interdisciplinary Science Practice

- ISAP

## Mathematics

- MATH

## Neuroscience

- NEUR

## Physics (Physics)

- PHYS

## Science Geography

- STAT

## Science Psychology

- TSES

## Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

### Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

## Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

### Courses Allowable Only as Free Electives in any B.Sc. Program

- **Biol 4810 [0.5]** Education Research in Biology
- **Chem 1003 [0.5]** The Chemistry of Food, Health and Drugs
- **Chem 1004 [0.5]** Drugs and the Human Body
- **Chem 1007 [0.5]** Chemistry of Art and Artifacts
- **Erth 1010 [0.5]** Our Dynamic Planet Earth
- **Erth 1011 [0.5]** Evolution of the Earth
- **Erth 2415 [0.5]** Natural Disasters
- **Isct 1001 [0.5]** Introduction to the Environment
- **Isct 2000 [0.5]** Natural Laws
- **Isct 2002 [0.5]** Human Impacts on the Environment
- **Math 0107 [0.5]** Algebra and Geometry
- **Phys 1901 [0.5]** Planetary Astronomy
- **Phys 1902 [0.5]** From our Star to the Cosmos
- **Phys 1905 [0.5]** Physics Behind Everyday Life
- **Phys 2903 [0.5]** Physics Towards the Future

### Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

- **COMP 1001 [0.5]** Introduction to Computational Thinking for Arts and Social Science Students
- **Math 0005 [0.5]** Precalculus: Functions and Graphs
- **Math 0006 [0.5]** Precalculus: Trigonometric Functions and Complex Numbers
- **Math 1009 [0.5]** Mathematics for Business
- **Math 1119 [0.5]** Linear Algebra: with Applications to Business
- **Math 1401 [0.5]** Elementary Mathematics for Economics I
- **Math 1402 [0.5]** Elementary Mathematics for Economics II

### Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

### Undergraduate Co-operative Education Policy

#### Admission Requirements

Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.
Participation Requirements

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

**Employment**

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.
International Students
All International Students are required to possess a Co- op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Chemistry: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Chemistry students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: CHEM 3999

Work/Study Pattern:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
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<td>Summer **O/W</td>
<td>Summer *W</td>
<td>Summer O/W</td>
<td>Summer O/W</td>
<td>Summer O/W</td>
</tr>
</tbody>
</table>

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees
- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements
B. Sc. Honours Program

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements
For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing
For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be
granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**B.Sc. Major Program**

**B.Sc. Program**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**
For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Chemistry (CHEM) Courses**

**CHEM 1001 [0.5 credit]**

*General Chemistry I*
This maths-intensive course covers introduction to periodicity, gas laws, equilibrium, bonding, electrochemistry, and organic chemistry. This is a specialist course for students intending to take second year chemistry.

Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1005, CHEM 1101.
Prerequisite(s): Ontario 4U/M in Chemistry or equivalent.
Lectures and tutorial four hours a week, laboratory three hours every other week.

**CHEM 1002 [0.5 credit]**

*General Chemistry II*
This maths-intensive course covers an introduction to solution chemistry, acids and bases, thermodynamics, and kinetics. Specialist course for students intending to take second year chemistry.

Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1006.
Prerequisite(s): CHEM 1005 with a minimum grade of B-.
Lectures and tutorial four hours a week, laboratory three hours every other week.

**CHEM 1003 [0.5 credit]**

*The Chemistry of Food, Health and Drugs*
Aspects of chemistry relating to food, food additives, drugs (illicit and beneficial) and their relation to metabolism and health. Topics may include: proteins, carbohydrates, fats, vitamins, cofactors, enzymes, steroids, electrolyte and pH balance, trace elements. Available only as a free option for Science students.
Prerequisite(s): a course in Chemistry (e.g. Ontario Grade 11).
Lectures three hours a week.

**CHEM 1004 [0.5 credit]**

*Drugs and the Human Body*
No science background required. Topics include drug origins, laws, metabolism and dependence, pharmaceutical industry, over the counter medications, placebo effect, antibiotics, pain killers, stimulants, alcohol, marijuana, hallucinogens, birth control and steroids. Students in Science programs may use this course only as a free elective.
Lectures three hours a week.
CHEM 1005 [0.5 credit]
Elementary Chemistry I
Introduction to stoichiometry, periodicity, gas laws, equilibrium, bonding, and organic chemistry with emphasis on examples of relevance to the life sciences. For students who lack the prerequisite for CHEM 1001 or who are not intending to take upper year chemistry.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1001, CHEM 1101.
Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1006 [0.5 credit]
Elementary Chemistry II
Introduction to solution chemistry, acids and bases, thermodynamics, and kinetics, with emphasis on examples of relevance to the life sciences. For students who lack the prerequisite for CHEM 1002 or who are not intending to take upper year chemistry.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1002.
Prerequisite(s): CHEM 1001 or CHEM 1005.
Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1007 [0.5 credit]
Chemistry of Art and Artifacts
The chemistry of arts and artifacts created throughout the ages (Paleolithic, Neolithic, Bronze, Iron, Middle and Modern) will be examined. Basic chemical principles will be explored and reviewed when required. Students in Science programs may use this course only as a free elective.
Lectures three hours a week.

CHEM 1101 [0.5 credit]
Chemistry for Engineering Students
Topics include stoichiometry, atomic and molecular structure, thermodynamics and chemical equilibrium, acid-base chemistry, carbon dioxide in water, alkalinity, precipitation, electrochemistry, kinetics and basic organic chemistry. Laboratory component emphasizes techniques and methods of basic experimental chemistry.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1001, and CHEM 1005.
Prerequisite(s): Ontario 4U/M in Chemistry or equivalent.
Lectures three hours a week, laboratory three hours every other week.

CHEM 2103 [0.5 credit]
Physical Chemistry I
Basic principles of thermodynamics. Development of the laws of thermodynamics, enthalpy, entropy and free energy, and their applications to phase equilibria, electrochemistry, and kinetics. Brief introduction to quantum mechanics.
Includes: Experiential Learning Activity
Precludes additional credit for BIOC 2300, CHEM 2101 (no longer offered) and CHEM 2102 (no longer offered).
Prerequisite(s): CHEM 1006 with a minimum grade of B- or CHEM 1002, MATH 1004, MATH 1107, PHYS 1007 and PHYS 1008 or PHYS 1003 and PHYS 1004.
Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 2203 [0.5 credit]
Organic Chemistry I
Structure, organization, and scope of organic chemistry including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification. Training in the handling and purification of organic compounds, organic chemical reactions, and the use of infrared spectroscopy.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2207.
Prerequisite(s): CHEM 1006 with a minimum grade of B- or CHEM 1002.
Lectures three hours a week and laboratory three hours a week.

CHEM 2204 [0.5 credit]
Organic Chemistry II
Further discussion of chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of the chemical reactions of organic functional groups. Laboratory experience in organic chemical reactions, use of infrared spectroscopy and other techniques to determine the structure of unknown organic compounds.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2208 and CHEM 2206.
Prerequisite(s): CHEM 2203.
Lectures three hours a week and laboratory three hours a week.

CHEM 2207 [0.5 credit]
Introduction to Organic Chemistry I
Structure, organization, and scope of organic chemistry, including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification.
Precludes additional credit for CHEM 2203.
Prerequisite(s): CHEM 1006 with a minimum grade of B- or CHEM 1002.
Lectures three hours a week.
CHEM 2208 [0.5 credit]
Introduction to Organic Chemistry II
Further discussion of the chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of chemical reactions of the organic functional groups.
Precludes additional credit for CHEM 2204 and CHEM 2206.
Prerequisite(s): CHEM 2207 or CHEM 2203.
Lectures three hours a week.

CHEM 2302 [0.5 credit]
Analytical Chemistry I
Introduction to quality assurance measures, calibration strategies and the fundamentals of solution-based analytical measurement processes. Qualitative and quantitative analysis using potentiometric and electrolysis techniques including ion selective electrodes, coulometry, amperometry and voltammetry. Redox, acid/base and EDTA titrations in the context of various buffer systems.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2300.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002 or CHEM 1101 and (MATH 1007 or MATH 1004).
Lectures three hours a week, laboratory three hours a week.

CHEM 2303 [0.5 credit]
Analytical Chemistry II
Spectrophotometric analysis using Uv-Vis, fluorescence and FTIR instrumentation. Modern separation methods including CE, GC and LC. Recent techniques and applications using mass spectrometry. Applications of all of the above to real-world analysis including the advancement of environmental, biochemistry and health-related research.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2300 and CHEM 2301.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002, or CHEM 1101, and (MATH 1007 or MATH 1004).
Lectures three hours a week, laboratory three hours a week.

CHEM 2400 [0.5 credit]
Independent Research I
Students carry out a laboratory research project under the supervision of a faculty member from the Department of Chemistry. A research report must be submitted by the last day of classes for evaluation by the Chair and Faculty supervisor.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to Honours students having second-year standing in a Chemistry program with an overall CGPA of 10.0 or higher, and approval of the Chair and a Faculty supervisor.
Laboratory research for at least three hours a week over two terms.

CHEM 2501 [0.5 credit]
Introduction to Inorganic and Bioinorganic Chemistry
The basic concepts of inorganic chemistry, including the origins of elemental properties, simple theories of bonding, intermolecular forces, main group and transition metal chemistry, coordination chemistry. Inorganic ions in biochemistry, including ion transport and storage, oxygen carriers and hydrolases, redox proteins.
Precludes additional credit for CHEM 3506.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.
Lectures three hours a week, tutorial one hour a week.

CHEM 2800 [0.5 credit]
Foundations for Environmental Chemistry
A basis of chemistry needed to understand the environment: composition of the atmosphere and natural waters; equilibrium; surface properties; kinetics and spectroscopy; physical and chemical properties of chemicals in the environment. Limited enrolment course. Priority is given to students in Environmental Science/Engineering.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 1006 with a minimum grade of B- or CHEM 1002, or CHEM 1101, (MATH 1007 or MATH 1004).
Lectures three hours a week, laboratory three hours a week.

CHEM 3100 [0.5 credit]
Physical Chemistry II
Further development of thermodynamic equations and their applications to mass changes, chemical potential, chemical equilibria, transport properties and advanced phase equilibria. Use of partial differentials and development of Maxwell's relations will also be covered.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2102.
Prerequisite(s): CHEM 2103 or BIOC 2300, and MATH 1005 or MATH 2007.
Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 3101 [0.5 credit]
Quantum Chemistry
Classical equations of motion, harmonic oscillator, diatomic and polyatomic molecules, molecular mechanics, quantum mechanics, Schrödinger equation and wave functions, vibrational spectra, hydrogen atom, quantum numbers, electronic spectra, bonding in small molecules.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 2103, MATH 2007 and MATH 2008.
Lectures three hours a week, tutorial one hour per week.
CHEM 3102 [0.5 credit]
Methods of Computational Chemistry
Molecular orbital theory of organic and inorganic chemistry. Applications of computational chemistry to chemical bonding, aromaticity, molecular spectra. Semi-empirical and ab initio electronic structure theory. Comparison of theoretical methods used to obtain molecular properties. Introduction to statistical thermodynamics.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 3101 or PHYS 3701.
Lectures and problems three hours a week.

CHEM 3106 [0.5 credit]
Computational Chemistry Methods Laboratory
Industry-standard quantum chemistry software is used for Hartree-Fock, density functional, and post Hartree-Fock correlation calculations. Results are applied to problems in molecular structure, thermodynamics, vibrational spectroscopy, and kinetics. The UNIX operating system, Bourne-shell programming, and Python scripting are also introduced.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 3102 (may be taken concurrently).
Laboratory three hours a week.

CHEM 3107 [0.5 credit]
Experimental Methods in Nanoscience
Thin film production and characterization, scanning electron microscopy, synthesis of metal nanoparticles and particle size determination, computational modeling of nanostructures.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 3100.
Laboratory four hours a week.

CHEM 3201 [0.5 credit]
Advanced Organic Chemistry I
Instrumental methods for determining organic structures. Selected organic reactions with emphasis on mechanisms and reactive intermediates.
Prerequisite(s): CHEM 2204 or CHEM 2206 or CHEM 2208.
Lectures three hours a week, tutorial one and a half hours per week.

CHEM 3202 [0.5 credit]
Advanced Organic Chemistry II
Continued mechanistic survey of additional organic reactions with emphasis on synthetic usefulness and stereochemistry. Interspersed with selected topics such as instrumental methods, photochemistry, literature of organic chemistry, natural and synthetic polymers, heterocycles, terpenes and alkaloids.
Prerequisite(s): CHEM 3201 or equivalent.
Lectures three hours a week, tutorial one and a half hours per week.

CHEM 3205 [0.5 credit]
Experimental Organic Chemistry
A laboratory-based course including advanced concepts and techniques in organic synthesis, structure determination, and the rates and mechanisms of reactions. Students are responsible for literature surveys, acquisition of theoretical background, and design of experimental procedures.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 2204 or CHEM 2206 and CHEM 3201.
Laboratory four hours a week.

CHEM 3305 [0.5 credit]
Advanced Analytical Chemistry Laboratory
Advanced instrumentally based techniques of analysis. Emphasis on identification and quantitation of low-level contaminants in environmental matrices using chromatographic and spectroscopic methods, including sampling, cleanup, measurement and reporting of results.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 2302 or CHEM 2303.
Laboratory four hours a week.

CHEM 3400 [0.5 credit]
Independent Research II
Students carry out a laboratory research project supervised by a Chemistry faculty member. A research report must be submitted by the last day of classes for evaluation by the Chair and Faculty supervisor; expectations of student performance and evaluation exceed that of CHEM 2400.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to Honours students having third-year standing in a Chemistry program with an overall CGPA of 10.0 or higher, and approval of the Chair and a Faculty supervisor.
Laboratory research for at least three hours a week over two terms.

CHEM 3401 [0.5 credit]
Physical Aspects of Biochemistry
Chemistry, structure and function of nucleic acids, proteins, carbohydrates, and lipids. Thermodynamics of biological systems, chemical mechanisms and organic transformations. Intended for Chemistry Majors.
Precludes additional credit for BIOC 2200, BIOL 2200, and BIOC 3101.
Prerequisite(s): CHEM 2103 and CHEM 2204.
Lectures three hours a week.
CHEM 3503 [0.5 credit]
Inorganic Chemistry I
Symmetry, identification of Raman and infrared active vibrations, symmetry-adapted molecular orbital theory of polyatomic molecules, electron deficient bonding, bonding in coordination complexes, solid state bonding, ionic lattices. Laboratory will introduce the student to a range of synthetic techniques and physical methods of characterization.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 3507.
Prerequisite(s): CHEM 2501.
Lectures three hours a week, tutorial one hour a week and laboratory four hours a week.

CHEM 3504 [0.5 credit]
Inorganic Chemistry II
Physical properties of coordination complexes, ligand substitutions and electron transfer reaction mechanisms, organometallic chemistry: bonding, nomenclature and catalysis. Laboratory will introduce the student to a range of synthetic techniques and physical methods of characterization.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 3508.
Prerequisite(s): CHEM 3503.
Lectures three hours a week, tutorial one hour a week and laboratory four hours a week.

CHEM 3507 [0.5 credit]
General Inorganic Chemistry I
Symmetry, identification of Raman and infrared active vibrations, symmetry-adapted molecular orbital theory of polyatomic molecules, electron deficient bonding, bonding in coordination complexes, solid state bonding, ionic lattices.
Precludes additional credit for CHEM 3503.
Prerequisite(s): CHEM 2501.
Lectures three hours a week, tutorial one hour a week.

CHEM 3508 [0.5 credit]
General Inorganic Chemistry II
Physical properties of coordination complexes, ligand substitutions and electron transfer reaction mechanisms, organometallic chemistry: bonding, nomenclature and catalysis.
Precludes additional credit for CHEM 3504.
Prerequisite(s): CHEM 3503 or CHEM 3507.
Lectures three hours a week, tutorial one hour a week.

CHEM 3600 [0.5 credit]
Introduction to Nanotechnology
Nanoscale units, bulk vs. nanoproperties, electrons, atoms and ions, metals, band structure, electrical conduction, biosystems, molecular devices, quantum mechanics and optics, tools for measuring nanostructures. Production of nanostructures: self assembly, nanoscale crystal growth, polymerization. Applications to sensors, magnets, electronics, drug delivery. Toxicology of nanostructures.
Prerequisite(s): CHEM 3100.
Lectures three hours a week.

CHEM 3700 [0.5 credit]
Industrial Applications of Chemistry
Uses of chemistry in a number of industries: fertilizers, electrochemical, metallurgical, petrochemical, pulp and paper, plastics, pharmaceutical. Interaction of chemistry with economic, political, engineering, environmental, health, legal considerations. Guest lecturers.
Prerequisite(s): (BIOC 2300 or CHEM 2103) and one of CHEM 2207 or CHEM 2203.
Lecture three hours a week.

CHEM 3800 [0.5 credit]
The Chemistry of Environmental Pollutants
Prerequisite(s): CHEM 2207 or CHEM 2203 or CHEM 2800.
Lectures three hours a week.

CHEM 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

CHEM 4100 [0.5 credit]
Advanced Topics in Physical Chemistry I
Principles of Group Theory as applied to Chemistry. Point groups, character tables, symmetry orbitals, molecular orbitals, aromaticity, allowed and forbidden reactions, sandwich complexes. Selection rules in spectroscopy, molecular vibrations.
Prerequisite(s): CHEM 3102.

CHEM 4102 [0.5 credit]
Advanced Topics in Physical Chemistry II
Prerequisite(s): CHEM 3102.
Lectures and seminars three hours a week.

CHEM 4103 [0.5 credit]
Surface Chemistry and Nanostructures
Surface structure, thermodynamics, energy states, equilibrium, partition functions for diatomic molecules. Chemical kinetics: rate laws, solution of differential equations, transition state theory, bimolecular reactions in gases and in solution, chain reactions, catalysis, atmospheric chemical reactions and photochemistry.
Prerequisite(s): CHEM 3102. Also offered at the graduate level, with different requirements, as CHEM 5108, for which additional credit is precluded.
Lectures three hours a week.
CHEM 4104 [0.5 credit]
Physical Methods of Nanotechnology
An overview of methods used in nanotechnology. Principles of scanning probe techniques ranging from surface physics to biology. State of the art methods to create nanostructures for future applications in areas such as nanolithography, nano-electronics, nano-optics, data storage and bio-analytical nanosystems.
Prerequisite(s): CHEM 3600 and CHEM 3107.
Lectures three hours a week.

CHEM 4201 [0.5 credit]
Macromolecular Nanotechnology
Prerequisite(s): CHEM 3600 or permission of the department.
Also offered at the graduate level, with different requirements, as CHEM 5207, CHEM 5208, for which additional credit is precluded.
Lectures three hours a week.

CHEM 4202 [0.5 credit]
Advanced Topics in Organic Chemistry I
Topics include 2-dimensional 1H and 13CNMR spectroscopy and structure determination of complex organic molecules.
Prerequisite(s): CHEM 3201.
Also offered at the graduate level, with different requirements, as CHEM 5407, for which additional credit is precluded.
Lectures three hours a week.

CHEM 4203 [0.5 credit]
Synthetic Organic Chemistry
The application of reactions to the synthesis of organic molecules. Emphasis on design of synthetic sequences, new reagents, and stereoselectivity. Topics include advanced methods for synthesis and reactions of alkenes, carbonyls, and enolates, functional group interconversion, oxidation and reduction, protecting groups, rearrangements, and metal-catalyzed cross-coupling.
Prerequisite(s): CHEM 3201 and CHEM 3202.
Lectures and seminars three hours a week.

CHEM 4204 [0.5 credit]
Organic Polymer Chemistry
Introduction to basic principles of polymer chemistry, industrial and synthetic polymers, different types of polymerization and polymer characterization. Study of commodity plastics, engineering thermoplastics, and specialty polymers, with emphasis on their synthesis.
Prerequisite(s): CHEM 3201 or equivalent.
Also offered at the graduate level, with different requirements, as CHEM 5406, for which additional credit is precluded.
Lectures three hours a week.

CHEM 4205 [0.5 credit]
Reactivity and Mechanism in Organic Chemistry
The application of frontier molecular orbital theory (HOMO-LUMO interactions) to organic reactions, including thermal and photochemical cycloadditions of pi-systems (including 1,3-dipoles) and rearrangements. Reactions of radicals and carbenes; conformational analysis, stereochemical effects, and methods for the determination of reaction mechanisms.
Prerequisite(s): CHEM 3202 and CHEM 3503 (may be taken concurrently).
Lectures and seminars three hours a week.

CHEM 4206 [0.5 credit]
Natural Products Chemistry
A survey of the major classes of natural products with respect to their structural elucidation, synthesis, biosynthesis and bioactivity, with emphasis on compounds that have medicinal importance.
Prerequisite(s): CHEM 3201 and CHEM 3202.
Lectures and seminars three hours a week.

CHEM 4301 [0.5 credit]
Advanced Topics in Analytical Chemistry I
Prerequisite(s): CHEM 2103 and one of CHEM 2302 or CHEM 2303.
Lectures and seminars three hours a week.

CHEM 4302 [0.5 credit]
Advanced Topics in Analytical Chemistry II
Prerequisite(s): CHEM 2103 and one of CHEM 2302 or CHEM 2303.
Lectures and seminars three hours a week.
CHEM 4304 [0.5 credit]  
Advanced Applications In Mass Spectrometry  
Detailed breakdown of the physical, electrical and chemical operation of mass spectrometers. Applications in MS ranging from the analysis of small molecules to large biological macromolecules. Descriptions of the use of mass spectrometry in industry as well as commercial opportunities in the field.  
Prerequisite(s): CHEM 2103 or BIOC 2300, and one of CHEM 2302 or CHEM 2303.  
Also offered at the graduate level, with different requirements, as CHEM 5109, for which additional credit is precluded.  
Lectures and seminars three hours a week.

CHEM 4305 [0.5 credit]  
Environmental Chemistry and Toxicology  
Overview of environmental chemistry and toxicology principles including chemical sources, fate, and effects in the environment. Examining organic reactions occurring in abiotic environments and biological systems, and studying aspects of toxicant disposition and biotransformation. Emphasis on contemporary problems in human health and the environment.  
Prerequisite(s): CHEM 2203 or CHEM 2207, and CHEM 2800 or CHEM 2103, or BIOC 3101 or permission of the department.  
Also offered at the graduate level, with different requirements, as CHEM 5606, for which additional credit is precluded.  
Lectures three hours per week.

CHEM 4406 [0.5 credit]  
Pharmaceutical Drug Design  
Important elements of rational drug design. Ligand-receptor interactions, structure-activity relationships, molecular modeling of pharmacophores, structure and mechanism-based approaches to drug design. Enzyme inhibition in chemotherapy and design of anti-viral drugs. Includes: Experiential Learning Activity  
Prerequisite(s): CHEM 2103 and (CHEM 2203 or CHEM 2207), BIOC 3101 and (BIOC 3102 or BIOC 3008).  
Lectures and laboratory five hours a week.

CHEM 4407 [0.5 credit]  
Polymer Modeling  
Polymer architectures; Flexible and rigid rod polymers; Rotational isomeric states (RIS); Molecular mechanics, Ramachandran Map, Helix parameters; internal and external parameters; regular and random coil structures; molecular dynamics; calculation of end-to-end distance, NMR chemical shifts; conformational entropy and properties.  
Prerequisite(s): MATH 1107 and CHEM 2204 or permission of the department.  
Lectures three hours per week.

CHEM 4502 [0.5 credit]  
Radiochemistry  
A study of nuclear stability and decay; chemical studies of nuclear phenomena. Applications of radioactivity.  
Prerequisite(s): CHEM 2302, CHEM 2303, and CHEM 3100, or permission of the Department.  
Also offered at the graduate level, with different requirements, as CHEM 5905, for which additional credit is precluded.  
Lectures and seminars three hours a week.

CHEM 4503 [0.5 credit]  
Advanced Topics in Inorganic Chemistry I  
A quantitative basis for ligand field theory; unreal and real wavefunctions of d-orbitals; derivation of the energies of d-orbitals using variational principle, secular determinants, and lined field operators; the effect of ligand field on free ion term symbols, wavefunction descriptions of terms symbols; applications.  
Prerequisite(s): CHEM 3504 and CHEM 3101.  
Lectures three hours a week.

CHEM 4504 [0.5 credit]  
Advanced Topics in Inorganic Chemistry II  
Reactivity of inorganic coordination compounds. Thermodynamic and kinetic factors affecting reactivity. Industrial and biochemical processes catalyzed by metal coordination compounds. Experimental methodologies, data analysis and rate law evaluation used to obtain reaction mechanisms leading to improved methods of catalysis.  
Prerequisite(s): CHEM 3504 or equivalent.  
Lectures three hours a week.

CHEM 4505 [0.5 credit]  
Application of Physical Methods to Electron Transfer Chemistry  
Spectroscopic techniques (i.e. UV-visible NIR, IR, EPR) and electrochemistry methods that are used to study photochemical and thermal intermolecular and intramolecular electron transfer in transition metal complexes are presented. Electron transfer theory and redox-active (non-innocent) ligands are discussed.  
Prerequisite(s): CHEM 3504.  
Lectures three hours a week.

CHEM 4700 [0.5 credit]  
Special Topics in Chemistry  
A topic of current interest in any branch of chemistry. Only one special topics course may be presented for credit.  
Prerequisite(s): permission of the Department.
CHEM 4800 [0.5 credit]
Atmospheric Chemistry
Properties of natural atmospheric constituents; biogeochemical cycles involving gases; chemical reactions in the atmosphere; anthropogenic atmospheric pollutants (e.g., chlorofluorocarbons, sulphur and nitrogen oxides, photochemical smog sources and effects on the biosphere. Relation between the structure of molecules and their spectral and reactive properties.
Prerequisite(s): CHEM 2103 or CHEM 2800.
Lectures three hours a week.

CHEM 4907 [1.0 credit]
Honours Essay and Research Proposal
Students conduct an independent research study using library resources, and prepare a critical review and study proposal on a topic approved by a faculty supervisor. A written report and oral poster presentation of the work are required before a grade can be assigned.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 4908, FOOD 4907 and FOOD 4908.
Prerequisite(s): fourth year standing in an Honours Chemistry program and permission of the department.

CHEM 4908 [1.0 credit]
Research Project and Seminar
Senior students in Honours Chemistry carry out a research project under the direction of one of the members of the Department. A written report and an oral presentation of the work are required before a grade can be assigned.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 4907, FOOD 4907 and FOOD 4908.
Prerequisite(s): any two of CHEM 3106, CHEM 3107, CHEM 3205, CHEM 3305 and CHEM 3504 and permission of the department.
Laboratory and associated work equivalent to at least eight hours a week for two terms.

Childhood and Youth Studies
This section presents the requirements for programs in:
- Childhood and Youth Studies B.A. Honours
- Childhood and Youth Studies B.A.

Childhood and Youth Studies
B.A. Honours (20.0 credits)
Requirements:
A. Credits Included in the Major CGPA (8.0 credits)
1. 1.0 credit in:
   CHST 1003 [1.0] Introduction to Childhood and Youth Studies
2. 1.0 credit in:
   CHST 2001 [0.5] Experiential Learning in Childhood and Youth Studies
   CHST 2003 [0.5] Introduction to Research Methods in Childhood and Youth Studies
3. 1.5 credits in:
   CHST 3103 [0.5] Critical Approaches to Child Development
   CHST 3302 [0.5] Children, Policy, and Practice
   CHST 3303 [0.5] Children's Rights

4. 1.0 credit from:
   CHST 3000 [0.5] Conceptualizing Adolescence in Childhood and Youth Studies
   CHST 3003 [0.5] Theoretical Advances in Developmental Sciences
   CHST 3201 [0.5] Children's Knowledges, Cultures, and Representations
   CHST 3202 [0.5] Reconceptualizing Early Childhood Education and Care

5. 1.0 credit from:
   CHST 3002 [0.5] Special Topics in Child Studies
   CHST 3203 [0.5] Youth Culture and Activism
   CHST 3304 [0.5] Disability and Childhood: Transnational Perspectives
   CHST 4003 [0.5] History of 'The African Child'
   CHST 4004 [0.5] Theories of Inclusion in Childhood and Youth Education
   HIST 3115 [0.5] Childhood and Youth in History
   SOCI 3300 [0.5] Studies in the Sociology of Education

6. 1.0 credit from:
   CHST 3204 [0.5] Literary Representations of Childhood and Youth
   CHST 3205 [0.5] Race, Childhood, and Youth
   CHST 3305 [0.5] Childhood and Youth in Indigenous Contexts
   CHST 4001 [0.5] Advanced Topics in Child Studies
   CHST 4102 [0.5] Queer and Trans Youth
   CHST 4101 [0.5] Children, Youth, and Popular Culture
   SOCI 3045 [0.5] Children and Childhood in a Globalized World

7. 1.5 credits from:
   CHST 3101 [0.5] Research Seminar
   CHST 4908 [1.0] Honours Research Project
   Or
   1.5 credits CHST courses at the 3000 or 4000 level, which may include:
   CHST 3904 [1.0] Service-Learning in Community Settings

B. Credits Not Included in the Major CGPA (12.0 credits)
8. 8.0 credits in electives not in CHST
9. 4.0 credits in free electives
Total Credits 20.0

Notes:
1. Registration in the Honours Research Project requires a Major CGPA of at least 10.0.

Childhood and Youth Studies
B.A. (15.0 credits)
Requirements
A. Credits Included in the Major CGPA (6.0 credits)
1. 1.0 credit in:
   CHST 1003 [1.0] Introduction to Childhood and Youth Studies
2. 1.0 credit in:

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B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURLR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCJ, BIOL, BIT, CHEM, CIVE, CMPS, COMP, COR, ELEC, ENVE, ERNG, FOOD, HLTH, IDES, IMD, IPM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada.

The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements
Degrees
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or \textit{anglais}). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

**Advanced Standing**

**B.A. and B.A. (Honours) Program**

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**Child and Youth Studies**

Students who have obtained an Ontario College diploma with a B+ average or higher will be granted up to a maximum of 5.0 credits on admission to the Child and Youth Studies program.

**Childhood and Youth Studies (CHST) Courses**

**CHST 1003 [1.0 credit]**

\textbf{Introduction to Childhood and Youth Studies}

An introduction to multiple approaches to studying childhood and youth through a diverse range of historical periods and cultural contexts. Students will apply an interdisciplinary lens to explore the ways that children and youth have been discussed, researched, and understood. Precludes additional credit for CHST 1000 (no longer offered), CHST 1002 (no longer offered).

Lecture and discussion groups three hours a week.

**CHST 2001 [0.5 credit]**

\textbf{Experiential Learning in Childhood and Youth Studies}

An examination of the philosophies, purposes, methods, techniques, and issues of childhood and youth studies through engagement with children and youth in campus and community settings. Students will make connections to theoretical and curriculum frameworks and current debates and perspectives.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in Childhood and Youth Studies.

Lecture and discussion three hours a week.

**CHST 2003 [0.5 credit]**

\textbf{Introduction to Research Methods in Childhood and Youth Studies}

An introduction to the foundations of research involving children and youth. Students will learn research paradigms and strategies for designing and conducting research with children and young people. Ethical considerations and the involvement of children as co-researchers will be emphasized.

Precludes additional credit for CHST 2000 (no longer offered).

Prerequisite(s): second-year standing in Childhood and Youth Studies.

Lectures and discussion groups three hours a week.

**CHST 2011 [0.5 credit]**

\textbf{Children’s Literature}

Introduction to the critical study of children’s literature. Also listed as ENGL 2011.

Precludes additional credit for ENGL 2006 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

**CHST 3000 [0.5 credit]**

\textbf{Conceptualizing Adolescence in Childhood and Youth Studies}

A comprehensive interdisciplinary overview of key issues, research, and theoretical developments in the study of childhood and youth. Students will explore the different and often conflicting conceptualizations of adolescence and examine youth theories and their implications.

Prerequisite(s): Third year standing in Childhood and Youth Studies.

Lectures three hours a week.

**CHST 3002 [0.5 credit]**

\textbf{Special Topics in Child Studies}

Analysis of selected topics relevant to theory, research, and practice involving children and youth. The choice of topics will vary from year to year. Students should consult with the Institute regarding the topic offered.

Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.

Lectures three hours a week.

**CHST 3003 [0.5 credit]**

\textbf{Theoretical Advances in Developmental Sciences}

Developments and advances in theories of human development and their applications. Population-based models of child development, bio-ecological frameworks, and epigenetic theories with emphasis on interdisciplinary frameworks relating to childhood and youth.

Prerequisite(s): Third year standing in the Childhood and Youth Studies Program or permission of the department.

Lecture three hours a week.
CHST 3101 [0.5 credit]
Research Seminar
This seminar is designed for students who wish to complete an Honours research project in their 4th year. Students will select a topic of study, investigate methodological and ethical considerations, and implement the key steps involved in designing rigorous research projects in diverse settings.
Precludes additional credit for CHST 3100 (no longer offered).
Prerequisite(s): CHST 2003 or CHST 2000 (no longer offered), and third-year standing in Childhood and Youth Studies.
Seminar three hours a week.

CHST 3103 [0.5 credit]
Critical Approaches to Child Development
A critical examination of philosophical, ideological, and discursive perspectives on childhood and youth. Students will analyze normative constructs reproduced in developmental discourses and research, particularly concerning gender, racism, disability, and oppressive practices.
Precludes additional credit for CHST 3001 (no longer offered).
Prerequisite(s): Third-year standing in Childhood and Youth Studies.
Lecture three hours a week.

CHST 3201 [0.5 credit]
Children's Knowledges, Cultures, and Representations
An analysis of the ways children construct social relations through cultures and systems of representations. Students will investigate how children’s knowledges and identities are constructed through their relationships with the world and develop theoretical and practical approaches for working with children from diverse cultures.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Childhood and Youth Studies.
Seminar three hours a week.

CHST 3202 [0.5 credit]
Reconceptualizing Early Childhood Education and Care
A study of historical, contemporary, global, and local conversations about the professional field of early childhood education and care and its diverse practices and contexts. Topics may include reconciliation, anti-racist pedagogies, asset-based practices, inclusiveness, caring in context, and critical reflection.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Childhood and Youth Studies.
Seminar three hours a week.

CHST 3203 [0.5 credit]
Youth Culture and Activism
An exploration of youth cultures and participation in local, national, and global contexts. Students will examine youth engagement and advocacy, including definitions of citizenship, theories of resistance, the construction of “youth” as a social category, and the impact of technology and social media.
Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 3204 [0.5 credit]
Literary Representations of Childhood and Youth
An examination of the ways in which childhood, children, and youth have been represented in creative literature (fiction, poetry, drama, and/or creative nonfiction).
Also listed as ENGL 3204.
Prerequisite(s): third-year standing, or permission of the department.
Seminar three hours a week.

CHST 3205 [0.5 credit]
Race, Childhood, and Youth
An examination of historical and contemporary issues, debates, and methodologies pertaining to the studies of race, ethnicities, and racialization in childhood and youth studies. Students will also theorize the intersectionality of race, racism, racialization, racial and ethnic formations, nationalism, and colonialism in a contemporary context.
Prerequisite(s): third-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 3302 [0.5 credit]
Children, Policy, and Practice
An introduction to the concepts of policy and practice and how these are influenced by history, economy, geography, and culture. Topics may include provincial, national, and international economic, social, and educational policies concerning children and youth.
Precludes additional credit for CHST 4000 (no longer offered).
Prerequisite(s): third-year standing in Childhood and Youth Studies.
Lecture three hours a week.

CHST 3303 [0.5 credit]
Children’s Rights
This course examines children’s rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts.
Also listed as HUMR 3303.
Precludes additional credit for CHST 3901 (no longer offered).
Prerequisite(s): third-year standing in Childhood and Youth Studies.
Lecture three hours a week.
CHST 3304 [0.5 credit]
Disability and Childhood: Transnational Perspectives
Drawing on theory and research in disabled children's childhood studies, sociology of childhood, disability studies, and girlhood studies, this course examines the discursive and material constructions of disabled youth and childhood in transnational contexts in relation to emerging neo-colonial, neo-imperialist, and neo-liberal ideologies.
Also listed as DBST 3304.
Prerequisite(s): third-year standing in Childhood and Youth Studies or Disability Studies, or permission of the department.
Lecture three hours a week.

CHST 3305 [0.5 credit]
Childhood and Youth in Indigenous Contexts
An introduction to indigenous perspectives and contexts, both historical and contemporary, in relation to practice with Indigenous children, youth, families, and communities. Students will explore critical theory and necessary protocols for respectful entry into child and youth care practice within Indigenous contexts.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Childhood and Youth Studies or Indigenous Studies, or permission of the department.
Seminar three hours a week.

CHST 3904 [1.0 credit]
Service-Learning in Community Settings
Students will learn to apply their knowledge pertaining to children and youth to a policy- or practice-oriented work environment. Students will complete a term paper and other assignments documenting gains in experiential knowledge. Graded SAT/UNS.
Includes: Experiential Learning Activity
Prerequisite(s): students with third- or fourth-year standing in Childhood and Youth Studies may apply to the Undergraduate Advisor for permission.
Field placement six hours per week in a community setting, and regular class forum.

CHST 4001 [0.5 credit]
Advanced Topics in Child Studies
In-depth analysis of theoretical, empirical, and applied topics related to children and youth in Canada and/or internationally. Topics may include poverty and social inequality, child and youth health, social media and social change. This course is repeatable when the topic changes.
Prerequisite(s): fourth-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 4003 [0.5 credit]
History of 'The African Child'
Students will analyze the history of the figure of ‘the African child’ using a range of visual, sources from colonial officials, anthropologists, historians, advertisers, charity and development workers, and African children themselves.
Includes: Experiential Learning Activity
Also listed as AFRI 4003.
Precludes additional credit for CHST 4001 if taken in 2014-15.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

CHST 4004 [0.5 credit]
Theories of Inclusion in Childhood and Youth Education
An examination of the ways that educational discourses construct and perpetuate marginalization of disadvantaged individuals across historical, political, and educational contexts. Students will explore inclusive and exclusive approaches to education and care and how these discursive and material conditions shape the learning experiences of children.
Prerequisite(s): third-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 4101 [0.5 credit]
Children, Youth, and Popular Culture
A critical examination how popular culture, including consumer culture and digital media, mediates the identities, aspirations, and experiences of children and youth. Students will engage in critical dialogue about media culture and ideology and use cultural production to explore counter-narratives to problematic media representations.
Prerequisite(s): fourth-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 4102 [0.5 credit]
Queer and Trans Youth
An examination of the ways that queer and trans youth have been conceptualized in research, media, literature, policy, and education. A range of multimedia sources will be used to explore the ways queer and trans youth are using language to render themselves intelligible.
Prerequisite(s): fourth-year standing in Childhood and Youth Studies or Women's and Gender Studies, or permission of the department.
Seminar three hours a week.
CHST 4900 [0.5 credit]
Independent Study
A reading or research course for students who wish to investigate a particular topic of interest within Childhood and Youth Studies. Students may not take more than one credit of Independent Study in their total program.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in Childhood and Youth Studies and permission of the CHST Program Advisor.

CHST 4908 [1.0 credit]
Honours Research Project
Interdisciplinary research project for students in the Honours Research Project stream. Projects will be completed under the supervision of a CHST faculty member. Students must contact the CHST Program Advisor to request approval to register in this course.
Includes: Experiential Learning Activity
Prerequisite(s): CHST 3101, fourth-year standing in Childhood and Youth Studies with a Major CGPA of 10.0 or higher, and permission of the CHST Program Advisor.

Cognitive Science
This section presents the requirements for programs in:
• Cognitive Science with Concentration in Philosophical and Conceptual Issues Bachelor of Cognitive Science Honours
• Cognitive Science with Concentration in Language and Linguistics Bachelor of Cognitive Science Honours
• Cognitive Science with Concentration in the Biological Foundations of Cognition Bachelor of Cognitive Science Honours
• Cognitive Science with Concentration in Cognition and Psychology Bachelor of Cognitive Science Honours
• Cognitive Science with Concentration in Cognition and Computation Bachelor of Cognitive Science Honours
• Cognitive Science Bachelor of Cognitive Science
• Post-Baccalaureate Diploma in Cognitive Science

Program Requirements
Cognitive Science with Concentration in Philosophical and Conceptual Issues
Bachelor of Cognitive Science Honours (20.0 credits)
A. Credits Included in the Major CGPA (15.5 credits)
1. 1.0 credit from:
   1.0
   - CGSC 1001 [0.5] Mysteries of the Mind
   - FYSM 1607 [1.0] Cognitive Science: Thinking and Knowing
   - PHIL 1301 [0.5] Mind, World, and Knowledge

2. 1.0 credit in:
   1.0
   - CGSC 2001 [0.5] Theories in Cognitive Science
   - CGSC 2002 [0.5] Methods in Cognitive Science

3. 1.0 credit in:
   1.0
   - CGSC at the 3000-level or above

4. 0.5 credit from:
   0.5
   - CGSC 1005 [0.5] Computational Methods in Cognitive Science

B. 0.5 credit from:
   0.5
   - CGSC 3908 [0.5] Honours Seminar in Cognitive Science
   - CGSC 4909 [1.0] Honours Thesis

OR
b. Project pathway
   - CGSC 4909 [1.0] Honours Project
   and 0.5 credit in CGSC at the 3000-level or above

OR
c. Coursework pathway
   1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above

13. 4.5 credits in the concentration:
   4.5
   a. 4.0 credits from:
      - CGSC 3004 [0.5] Philosophy and Cognitive Science
      - PHIL 2301 [0.5] Introduction to the Philosophy of Science
      - PHIL 2504 [0.5] Language and Communication
      - PHIL 3104 [0.5] The Roots of Analytic Philosophy
      - PHIL 3301 [0.5] Issues in the Philosophy of Science
      - PHIL 3306 [0.5] Symbolic Logic
      - PHIL 3501 [0.5] Philosophy of Cognitive Science
      - PHIL 3502 [0.5] Mind and Action
      - PHIL 3504 [0.5] Pragmatics
      - PHIL 3506 [0.5] Semantics
      - PHIL 3530 [0.5] Philosophy of Language

5. 0.5 credit in:
   0.5
   - CGSC 3601 [0.5] Artificial Intelligence and Cognitive Science

6. 0.5 credit in:
   0.5
   - LING 1001 [0.5] Introduction to Linguistics I

7. 1.0 credit in:
   1.0
   - LING 2005 [0.5] Linguistic Analysis
   - LING 2007 [0.5] Phonetics

8. 1.0 credit in:
   1.0
   - PHIL 2001 [0.5] Introduction to Logic
   - PHIL 2501 [0.5] Introduction to Philosophy of Mind

9. 0.5 credit from:
   0.5
   - CGSC 3004 [0.5] Philosophy and Cognitive Science
   - PHIL 2301 [0.5] Introduction to the Philosophy of Science
   - PHIL 2504 [0.5] Language and Communication
   - PHIL 3104 [0.5] The Roots of Analytic Philosophy
   - PHIL 3301 [0.5] Issues in the Philosophy of Science
   - PHIL 3306 [0.5] Symbolic Logic
   - PHIL 3501 [0.5] Philosophy of Cognitive Science
   - PHIL 3502 [0.5] Mind and Action
   - PHIL 3504 [0.5] Pragmatics
   - PHIL 3506 [0.5] Semantics
   - PHIL 3530 [0.5] Philosophy of Language

10. 2.0 credits in:
    2.0
    - PSYC 1001 [0.5] Introduction to Psychology I
    - PSYC 1002 [0.5] Introduction to Psychology II
    - PSYC 2001 [0.5] Introduction to Research Methods in Psychology
    - PSYC 2700 [0.5] Introduction to Cognitive Psychology

11. 0.5 credit from:
    0.5
    - NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease
    - PSYC 2307 [0.5] Human Neuropsychology I

12. 1.5 credits from:
    1.5
    a. Thesis pathway
       - CGSC 3908 [0.5] Honours Seminar in Cognitive Science
       - CGSC 4909 [1.0] Honours Thesis

    OR

    b. Project pathway
       - CGSC 4909 [1.0] Honours Project
       and 0.5 credit in CGSC at the 3000-level or above

    OR

    c. Coursework pathway
       1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above

13. 4.5 credits in the concentration:
    4.5
    a. 4.0 credits from:
       - CGSC 3004 [0.5] Philosophy and Cognitive Science
       - PHIL 2301 [0.5] Introduction to the Philosophy of Science
       - PHIL 2504 [0.5] Language and Communication
       - PHIL 2540 [0.5] Personal Identity and the Self
       - PHIL 3104 [0.5] The Roots of Analytic Philosophy
       - PHIL 3140 [0.5] Epistemology
PHIL 3301 [0.5] Issues in the Philosophy of Science
PHIL 3306 [0.5] Symbolic Logic
PHIL 3501 [0.5] Philosophy of Cognitive Science
PHIL 3502 [0.5] Mind and Action
PHIL 3504 [0.5] Pragmatics
PHIL 3506 [0.5] Semantics
PHIL 3530 [0.5] Philosophy of Language
b. 0.5 credit from:
PHIL 4055 [0.5] Lexical Semantics
PHIL 4210 [0.5] Seminar in Philosophy of Language or Linguistics
PHIL 4220 [0.5] Seminar in philosophy of Mind or Cognition
PHIL 4230 [0.5] Seminar in Metaphysics, Epistemology, or Philosophy of Science
PHIL 4503 [0.5] Special Topic in Philosophy of Computing
PHIL 4505 [0.5] Formal Semantics

B. Credits not included in the Major (4.5 credits)

14. 4.5 credits in free electives. 4.5

Total Credits 20.0

Note: normally, students may not offer more than one credit of independent study (eg. CGSC 4801 Independent Study and CGSC 4802 Independent Study) in their total program, including independent study credits taken through other departments.

Cognitive Science with Concentration in Language and Linguistics
Bachelor of Cognitive Science Honours (20.0 credits)

A. Credits Included in the Major CGPA (15.5 credits)

1. 1.0 credit from:
   CGSC 1001 [0.5] Mysteries of the Mind
   FYSM 1607 [1.0] Cognitive Science: Thinking and Knowing
   PHIL 1301 [0.5] Mind, World, and Knowledge

2. 1.0 credit in:
   CGSC 2001 [0.5] Theories in Cognitive Science
   CGSC 2002 [0.5] Methods in Cognitive Science

3. 1.0 credit in:
   CGSC at the 3000-level or above

4. 0.5 credit from:
   CGSC 1005 [0.5] Computational Methods in Cognitive Science
   COMP 1005 [0.5] Introduction to Computer Science I

5. 0.5 credit in:
   CGSC 3601 [0.5] Artificial Intelligence and Cognitive Science

6. 0.5 credit in:
   LING 1001 [0.5] Introduction to Linguistics I

7. 1.0 credit in:
   LING 2005 [0.5] Linguistic Analysis
   LING 2007 [0.5] Phonetics

8. 1.0 credit in:
   PHIL 2001 [0.5] Introduction to Logic
   PHIL 2501 [0.5] Introduction to Philosophy of Mind

9. 0.5 credit from:
   CGSC 3004 [0.5] Philosophy and Cognitive Science
   PHIL 2301 [0.5] Introduction to the Philosophy of Science
   PHIL 2504 [0.5] Language and Communication
   PHIL 3104 [0.5] The Roots of Analytic Philosophy
   PHIL 3301 [0.5] Issues in the Philosophy of Science
   PHIL 3306 [0.5] Symbolic Logic
   PHIL 3501 [0.5] Philosophy of Cognitive Science
   PHIL 3502 [0.5] Mind and Action
   PHIL 3504 [0.5] Pragmatics
   PHIL 3506 [0.5] Semantics
   PHIL 3530 [0.5] Philosophy of Language

10. 2.0 credits in:
    PSYC 1001 [0.5] Introduction to Psychology I
    PSYC 1002 [0.5] Introduction to Psychology II
    PSYC 2001 [0.5] Introduction to Research Methods in Psychology
    PSYC 2700 [0.5] Introduction to Cognitive Psychology

11. 0.5 credit from:
    NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease
    PSYC 2307 [0.5] Human Neuropsychology I

12. 1.5 credits from:
    a. Thesis pathway
       CGSC 3908 [0.5] Honours Seminar in Cognitive Science
       CGSC 4908 [1.0] Honours Thesis
       OR
    b. Project pathway
       CGSC 4909 [1.0] Honours Project
       and 0.5 credit in CGSC at the 3000-level or above
       OR
    c. Coursework pathway
       1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above

13. 4.5 credits in the concentration: 4.5
    a. 2.5 credits in:
       LING 3004 [0.5] Syntax I
       LING 3005 [0.5] Morphology I
       LING 3007 [0.5] Phonology I
       LING 3505 [0.5] Semantics
       LING 3601 [0.5] Language Processing and the Brain
    b. 1.0 credit from:
       LING 2604 [0.5] Communication Disorders I
       LING 3604 [0.5] Communication Disorders II
       LING 3504 [0.5] Pragmatics
       LING 3603 [0.5] Child Language
    c. 1.0 credit from:
       LING 4004 [0.5] Syntax II
       LING 4005 [0.5] Morphology II
       LING 4007 [0.5] Phonology II
       LING 4505 [0.5] Formal Semantics
       LING 4510 [0.5] Lexical Semantics
       LING 4601 [0.5] Cognitive Neuroscience of Language
B. Credits not included in the Major (4.5 credits)

14. 4.5 credits in free electives 4.5

Total Credits 20.0

Note: Normally, students may not offer more than one credit of independent study (eg. CGSC 4801 [0.5] Independent Study and CGSC 4802 [0.5] Independent Study) in their total program, including independent study credits taken through other departments.

Cognitive Science with Concentration in the Biological Foundations of Cognition Bachelor of Cognitive Science Honours (20.0 credits)

A. Credits Included in the Major GPA (15.5 credits)

1. 1.0 credit from:
   - CGSC 1001 [0.5] Mysteries of the Mind
   - FYSM 1607 [1.0] Cognitive Science: Thinking and Knowing
   - PHIL 1301 [0.5] Mind, World, and Knowledge

2. 1.0 credit in:
   - CGSC 2001 [0.5] Theories in Cognitive Science
   - CGSC 2002 [0.5] Methods in Cognitive Science

3. 1.0 credit in:
   - CGSC at the 3000-level or above

4. 0.5 credit from:
   - CGSC 1005 [0.5] Computational Methods in Cognitive Science
   - COMP 1005 [0.5] Introduction to Computer Science I

5. 0.5 credit in:
   - CGSC 3601 [0.5] Artificial Intelligence and Cognitive Science

6. 0.5 credit in:
   - LING 1001 [0.5] Introduction to Linguistics I

7. 1.0 credit in:
   - LING 2005 [0.5] Linguistic Analysis
   - LING 2007 [0.5] Phonetics

8. 1.0 credit in:
   - PHIL 2001 [0.5] Introduction to Logic
   - PHIL 2501 [0.5] Introduction to Philosophy of Mind

9. 0.5 credit from:
   - CGSC 3004 [0.5] Philosophy and Cognitive Science
   - PHIL 2301 [0.5] Introduction to the Philosophy of Science
   - PHIL 2504 [0.5] Language and Communication
   - PHIL 3104 [0.5] The Roots of Analytic Philosophy
   - PHIL 3301 [0.5] Issues in the Philosophy of Science
   - PHIL 3306 [0.5] Symbolic Logic
   - PHIL 3501 [0.5] Philosophy of Cognitive Science
   - PHIL 3502 [0.5] Mind and Action
   - PHIL 3504 [0.5] Pragmatics
   - PHIL 3506 [0.5] Semantics
   - PHIL 3530 [0.5] Philosophy of Language

10. 2.0 credits in:
    - PSYC 1001 [0.5] Introduction to Psychology I

PSYC 1002 [0.5] Introduction to Psychology II
PSYC 2001 [0.5] Introduction to Psychology
PSYC 2002 [0.5] Introduction to Research Methods in Psychology
PSYC 2700 [0.5] Introduction to Cognitive Psychology

11. 0.5 credit in:
    - NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease

12. 1.5 credits from:
    a. Thesis pathway
    - CGSC 3908 [0.5] Honours Seminar in Cognitive Science
    - CGSC 4908 [1.0] Honours Thesis
    OR
    b. Project Pathway
    - CGSC 4909 [1.0] Honours Project
    and 0.5 credit in CGSC at the 3000-level or above
    OR
    c. Coursework pathway
    1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above

13. 4.5 credits in the concentration: 4.5
    a. 0.5 credit in:
       - NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease
    b. 2.5 credits in:
       - NEUR 2002 [0.5] Introduction to Statistics in Neuroscience
       - NEUR 2201 [0.5] Cellular and Molecular Neuroscience
       - NEUR 2202 [0.5] Neurodevelopment and Plasticity
       - NEUR 3001 [0.5] Data Analysis in Neuroscience I
       - NEUR 3002 [0.5] Data Analysis in Neuroscience II
    c. 1.0 credit from:
       - NEUR 2801 [0.5] Neuroscience and Creativity
       - NEUR 3004 [0.5] Neuropharmacology
       - NEUR 3206 [0.5] Sensory and Motor Neuroscience
       - NEUR 3207 [0.5] Systems Neuroscience
       - NEUR 3303 [0.5] The Neuroscience of Consciousness
       - PSYC 3307 [0.5] Human Neuropsychology II
       - PSYC 3709 [0.5] Language Processing and the Brain
    d. 0.5 credit in NEUR at the 3000-level or above

B. Credits Not Included in the Major CGPA (4.5 credits)

14. 4.5 credits in free electives. 4.5

Total Credits 20.0

Note: normally, students may not offer more than one credit of independent study (eg. CGSC 4801 Independent Study and CGSC 4802 Independent Study) in their total program, including independent study credits taken through other departments.
# Cognitive Science with Concentration in Cognition and Psychology

## Bachelor of Cognitive Science Honours (20.0 credits)

### A. Credits Included in the Major CGPA (15.5 credits)

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<thead>
<tr>
<th>1.</th>
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<tbody>
<tr>
<td>CGSC 1001 [0.5]</td>
<td>Mysteries of the Mind</td>
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<tr>
<td>FYSM 1607 [1.0]</td>
<td>Cognitive Science: Thinking and Knowing</td>
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<tr>
<td>PHIL 1301 [0.5]</td>
<td>Mind, World, and Knowledge</td>
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<td>CGSC 2002 [0.5]</td>
<td>Methods in Cognitive Science</td>
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<td>LING 2007 [0.5]</td>
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<tr>
<td>8.</td>
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<tr>
<td>PHIL 2001 [0.5]</td>
<td>Introduction to Logic</td>
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<tr>
<td>PHIL 2501 [0.5]</td>
<td>Introduction to Philosophy of Mind</td>
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<tr>
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<td>PHIL 2504 [0.5]</td>
<td>Language and Communication</td>
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<tr>
<td>PHIL 3104 [0.5]</td>
<td>The Roots of Analytic Philosophy</td>
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<tr>
<td>PHIL 3301 [0.5]</td>
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<td>PHIL 3501 [0.5]</td>
<td>Philosophy of Cognitive Science</td>
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<tr>
<td>PHIL 3502 [0.5]</td>
<td>Mind and Action</td>
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<tr>
<td>PHIL 3504 [0.5]</td>
<td>Pragmatics</td>
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<td>PHIL 3506 [0.5]</td>
<td>Semantics</td>
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<td>PHIL 3530 [0.5]</td>
<td>Philosophy of Language</td>
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<tr>
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<tr>
<td>PSYC 1002 [0.5]</td>
<td>Introduction to Psychology II</td>
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<tr>
<td>PSYC 2001 [0.5]</td>
<td>Introduction to Research Methods in Psychology</td>
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</tr>
<tr>
<td>PSYC 2700 [0.5]</td>
<td>Introduction to Cognitive Psychology</td>
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<tr>
<td>11.</td>
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<tr>
<td>NEUR 1202 [0.5]</td>
<td>Neuroscience of Mental Health and Psychiatric Disease</td>
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<tr>
<td>PSYC 2307 [0.5]</td>
<td>Human Neuropsychology I</td>
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<td>12.</td>
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<tr>
<td>CGSC 3908 [0.5]</td>
<td>Honours Seminar in Cognitive Science</td>
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</tr>
</tbody>
</table>

### CGSC 4908 [1.0] Honours Thesis

**OR**

### b. Project pathway

CGSC 4909 [1.0] Honours Project and 0.5 credit in CGSC at the 3000-level or above

**OR**

### c. Coursework pathway

1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above

<table>
<thead>
<tr>
<th>13.</th>
<th>4.5 credits in the concentration:</th>
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<tbody>
<tr>
<td>a.</td>
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</tr>
<tr>
<td>PSYC 2002 [0.5]</td>
<td>Introduction to Statistics in Psychology</td>
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</tr>
<tr>
<td>PSYC 3000 [1.0]</td>
<td>Design and Analysis in Psychological Research</td>
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</tr>
<tr>
<td>b.</td>
<td>0.5 credit in PSYC at the 2000-level or above</td>
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</tr>
<tr>
<td>c.</td>
<td>2.0 credits from:</td>
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<tr>
<td>PSYC 3700 [1.0]</td>
<td>Cognition (Honours Seminar)</td>
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</tr>
<tr>
<td>PSYC 3307 [0.5]</td>
<td>Human Neuropsychology II</td>
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<tr>
<td>PSYC 3506 [0.5]</td>
<td>Cognitive Development</td>
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<td>Child Language</td>
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</tr>
<tr>
<td>PSYC 3702 [0.5]</td>
<td>Perception</td>
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<tr>
<td>PSYC 3709 [0.5]</td>
<td>Language Processing and the Brain</td>
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</tr>
<tr>
<td>NEUR 3303 [0.5]</td>
<td>The Neuroscience of Consciousness</td>
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</tbody>
</table>

d. 0.5 credit in PSYC at the 4000-level or above

### B. Credits Not Included in the Major CGPA (4.5 credits)

| 14. | 4.5 credits in free electives. | 4.5 |

**Total Credits** 20.0

**Note:** Normally, students may not offer more than one credit of independent study (eg. CGSC 4801 [0.5] Independent Study and CGSC 4802 [0.5] Independent Study) in their total program, including independent study credits taken through other departments.

# Cognitive Science with Concentration in Cognition and Computation

## Bachelor of Cognitive Science Honours (20.0 credits)

### A. Credits Included in the Major CGPA (15.5 credits)

<table>
<thead>
<tr>
<th>1.</th>
<th>1.0 credit from:</th>
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<tbody>
<tr>
<td>CGSC 1001 [0.5]</td>
<td>Mysteries of the Mind</td>
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<tr>
<td>FYSM 1607 [1.0]</td>
<td>Cognitive Science: Thinking and Knowing</td>
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</tr>
<tr>
<td>PHIL 1301 [0.5]</td>
<td>Mind, World, and Knowledge</td>
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<td>2.</td>
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<tr>
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<tr>
<td>CGSC 2002 [0.5]</td>
<td>Methods in Cognitive Science</td>
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<td>3.</td>
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<td>4.</td>
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<tr>
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<td>Human Neuropsychology I</td>
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<td>11.</td>
<td>0.5 credit from:</td>
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</table>

CGSC 4908 [1.0] Honours Thesis

**OR**

### b. Project pathway

CGSC 4909 [1.0] Honours Project and 0.5 credit in CGSC at the 3000-level or above

**OR**

### c. Coursework pathway

1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above

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</table>

d. 0.5 credit in PSYC at the 4000-level or above

### B. Credits Not Included in the Major CGPA (4.5 credits)

| 14. | 4.5 credits in free electives. | 4.5 |

**Total Credits** 20.0

**Note:** Normally, students may not offer more than one credit of independent study (eg. CGSC 4801 [0.5] Independent Study and CGSC 4802 [0.5] Independent Study) in their total program, including independent study credits taken through other departments.
### Bachelor of Cognitive Science (15.0 credits)

#### A. Credits Included in the Major CGPA (9.0 credits)

<table>
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<td>[1.0] Cognitive Science: Thinking and Knowing</td>
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<tr>
<td>PHIL 1301</td>
<td>[0.5] Mind, World, and Knowledge</td>
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</table>

**Total Credits:** 9.0

**B. Credits not included in the Major CGPA (4.5 credits)**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>CGSC 4803</td>
<td>[0.5] Methods in Cognitive Science</td>
</tr>
<tr>
<td>CGSC 4804</td>
<td>[1.0] Theories in Cognitive Science</td>
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</table>

**Total Credits:** 4.5

**Note:** Normally, students may not offer more than one credit of independent study (eg. CGSC 4801 Independent Study and CGSC 4802 Independent Study) in their total program, including independent study credits taken through other departments.

### Cognitive Science

#### Bachelor of Cognitive Science (15.0 credits)

#### A. Credits Included in the Major CGPA (9.0 credits)

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<tbody>
<tr>
<td>CGSC 1001</td>
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</tr>
</tbody>
</table>

**Total Credits:** 9.0

#### B. Credits not included in the Major CGPA (4.5 credits)

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<tr>
<td>CGSC 4804</td>
<td>[1.0] Theories in Cognitive Science</td>
</tr>
</tbody>
</table>

**Total Credits:** 4.5
Post-Baccalaureate Diploma in Cognitive Science (4.0 credits)

Admission to this program requires the permission of the Department of Cognitive Science. Normally, students are required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Requirements:
1. 0.5 credit from:
   - CGSC 2001 [0.5] Theories in Cognitive Science
   - CGSC 2002 [0.5] Methods in Cognitive Science
2. 1.0 credit in:
   - CGSC 3601 [0.5] Artificial Intelligence and Cognitive Science
   - CGSC 3908 [0.5] Honours Seminar in Cognitive Science
3. 1.5 credits in CGSC at the 3000-level or above
4. 1.0 credit from:
   - CGSC 4908 [1.0] Honours Thesis
   - CGSC 4909 [1.0] Honours Project

Total Credits 4.0

Regulations

In addition to the program requirements listed in this section, students must satisfy the academic regulations of the university, and the faculty regulations for the Bachelor of Cognitive Science.

Academic Regulations and Requirements for the Bachelor of Cognitive Science Degree

The regulations presented below apply to all Bachelor of Cognitive Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.Cog.Sc. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM (one 1.0-credit FYSM or two 0.5-credit FYSM's) and can only register in a FYSM while they have first-year standing in their B.Cog.Sc. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Change of Program Within the B.Cog.Sc. Degree

Students may transfer to a program within the B.Cog.Sc. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.Cog.Sc. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français

Students registered in the B.Cog.Sc. may earn the notation Mention: Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below.

Students in the B.Cog.Sc. Honours program must present:
1. 1.0 credit in the French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level taken in French. These credits may come from any of Philosophy, Psychology, Computer Science, Linguistics, Neuroscience, or Cognitive Science, without restriction.

Students in the B.Cog.Sc. program must present:
1. 1.0 credit in the French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level taken in French. This credit may come from any of Philosophy, Psychology, Computer Science, Linguistics, Neuroscience, or Cognitive Science, without restriction.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:
• qualify a candidate for consideration for entry into a master’s program, or
• bring a candidate who already possesses a bachelor’s degree up to a level of a bachelor’s degree of 20.0 credits or more in another discipline, or
• provide a candidate who already possesses a twenty-credit bachelor’s degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
• provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements
- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement
In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation
All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation
- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study.

The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job.

It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.
Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account. Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:
1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit.

Students are advised to discuss the application process and requirements with the International Student Services Office.

**Bachelor of Cognitive Science Honours: Co-op Admission and Continuation Requirements**
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the Bachelor of Cognitive Science program;
2. Obtained and maintained an overall CGPA of 8.50 or higher;

Bachelor of Cognitive Science Honours students must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Report Course:** CGSC 3999 [0.0]

**Work/Study Pattern:**

<table>
<thead>
<tr>
<th>Year 1 Term</th>
<th>Pattern</th>
<th>Year 2 Term</th>
<th>Pattern</th>
<th>Year 3 Term</th>
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<th>Year 4 Term</th>
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**Legend**
- **S:** Study
- **W:** Work
- **O:** Optional
- * indicates recommended work study pattern
Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

• Bachelor of Cognitive Science (Honours)
• Bachelor of Cognitive Science

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section "English Language Requirements" in the Admissions Requirements and Procedures section of this Calendar. The cut-off average for admission will be set annually and will normally be above the minimum requirement.

Advanced Standing

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Cognitive Science;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma

• Post-Baccalaureate Diploma in Cognitive Science

Admission to this program requires the permission of the Department of Cognitive Science. Normally, students are required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Cognitive Science (CGSC) Courses

CGSC 1001 [0.5 credit]
Mysteries of the Mind

Challenges faced in understanding the mind, and some of the approaches cognitive science has brought to bear on them. Topics may include the nature of knowledge, how we learn, the extent to which human thinking is rational, biases in thinking, and evolutionary influences on cognition.

Lectures three hours per week.

CGSC 1005 [0.5 credit]
Computational Methods in Cognitive Science

Introduction to computational methods, with an emphasis on programming. Topics and assignments will focus on applications in cognitive science. No prior computing experience required.

Includes: Experiential Learning Activity

Lecture three hours and tutorial one and a half hours a week.
CGSC 2001 [0.5 credit]
Theories in Cognitive Science
An integrated background of the discipline of Cognitive Science, with an historical overview (1940's onward) and examination of the extent to which the discipline has assimilated the collective knowledge of contributing disciplines (e.g., psychology, philosophy, linguistics, artificial intelligence and neuroscience).
Prerequisite(s): second-year standing and FYSM 1607 or CGSC 1001, or permission of the Department.
Lectures three hours a week.

CGSC 2002 [0.5 credit]
Methods in Cognitive Science
Selected topics in cognitive science covered from the perspectives of psychology, computer science, linguistics, philosophy, and other related disciplines. Students may be required to complete independent research projects. Includes: Experiential Learning Activity
Prerequisite(s): CGSC 1001 or FYSM 1607, second year standing, or permission of the Department. Restricted to students enrolled in B.Cog.Sc. programs.
Seminars and tutorials six hours per week.

CGSC 3004 [0.5 credit]
Philosophy and Cognitive Science
An examination of the significance and role of philosophy in cognitive science. Topics may include: philosophical methods for studying the mind, prospects for naturalizing consciousness and intentionality, assessing competing models of the mind.
Prerequisite(s): CGSC 2001 and PHIL 2501, and third-year standing.
Seminar three hours per week.

CGSC 3201 [0.5 credit]
Cognitive Processes
An examination of research findings on cognitive processes. Topics may include attention, speech perception, memory, intelligence, reasoning, learning, working memory, reading, and mathematics.
Prerequisite(s): third-year standing, and CGSC 2001 or PSYC 2700.
Seminar three hours per week.

CGSC 3301 [0.5 credit]
Language and Cognitive Science
Issues related to language and cognitive science are examined through a detailed consideration of selected topics.
Prerequisite(s): third-year standing, and CGSC 2001.
Seminar three hours per week.

CGSC 3501 [0.5 credit]
Cognitive Neuroscience
Issues related to the role of cognitive neuroscience research in cognitive science are examined through a detailed consideration of selected topics.
Prerequisite(s): third-year standing and CGSC 2001.
Seminar, three hours per week.

CGSC 3601 [0.5 credit]
Artificial Intelligence and Cognitive Science
An introduction to the contribution of artificial intelligence and computer modeling of cognitive processes to cognitive science.
Includes: Experiential Learning Activity
Precludes additional credit for CGSC 4001.
Prerequisite(s): third-year standing and CGSC 2002 and (CGSC 1005 or COMP 1005). Restricted to students enrolled in B.Cog.Sc. Honours.
Seminars and labs six hours per week.

CGSC 3704 [0.5 credit]
Cognitive Science and the Digital Humanities
Exploration of the roles of human and artificial cognition in the digital humanities. Topics may include virtual and augmented reality as applied to the humanities, cognitive issues in hypertext and hypermedia; linguistic and philosophical considerations in digital media, cognitive narratology, and artificial intelligence.
Also listed as DIGH 3704.
Prerequisite(s): CGSC 1001; CGSC 2001 or DIGH 2001; and third-year standing.
Seminar three hours per week.

CGSC 3908 [0.5 credit]
Honours Seminar in Cognitive Science
Major theories and empirical approaches within Cognitive Science are examined through a detailed consideration of selected topics. Students are required to complete independent research projects to prepare for their fourth-year honours theses.
Includes: Experiential Learning Activity
Precludes additional credit for CGSC 3001 (no longer offered) and CGSC 3002 (no longer offered).
Prerequisite(s): third year standing, CGSC 2001 and CGSC 2002, and enrolment in B. Cog. Sc. Honours with a CGPA in the major requirements of 8.0.
Seminars and tutorials six hours per week.

CGSC 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

CGSC 4601 [0.5 credit]
Cognitive Modelling in Cognitive Science
Introduction to the field of cognitive modelling. Different modelling systems and how to evaluate them against human data; how to create cognitive models using the ACT-R cognitive architecture.
Prerequisite(s): third year standing, CGSC 2001, and (CGSC 1005 or COMP 1005).
Also offered at the graduate level, with different requirements, as CGSC 5106, for which additional credit is precluded.
Seminar three hours per week, tutorial one and a half hours per week.
CGSC 4801 [0.5 credit]
Independent Study
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program (including independent study credits taken through other departments).
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and permission of the Department.

CGSC 4802 [0.5 credit]
Independent Study
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program (including independent study credits taken through other departments).
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and permission of the Department.

CGSC 4900 [0.5 credit]
Special Topics in Cognitive Science
The topic of this course will vary from year to year. Students may register in more than one section of CGSC 4900 but may register in each section only once. Prerequisite(s): each section will have its own prerequisites and permission of the department if is required.
Seminar three hours per week.

CGSC 4908 [1.0 credit]
Honours Thesis
Interdisciplinary thesis. In developing a thesis, students must consult the Undergraduate Supervisor. Only the Undergraduate Supervisor can assign a supervisor or grant approval to register in this course. Faculty regulations governing Honours Research Essays and Honours Theses apply.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year standing, CGSC 3908, and enrollment in B.Cog.Sc. Honours with a major CGPA of 8.0.

CGSC 4909 [1.0 credit]
Honours Project
Interdisciplinary project. Students engage in one or more group research projects.
Includes: Experiential Learning Activity
Precludes additional credit for CGSC 4908.
Prerequisite(s): 4th year standing, enrollment in B.Cog.Sc. Honours.
Seminar

Communication and Media Studies
This section presents the requirements for programs in:
### A. Credits Included in the Communication Studies Major CGPA (7.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>COMS 1001 [0.5]</td>
<td>Foundations in Communication and Media Studies</td>
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<td>COMS 1002 [0.5]</td>
<td>Current Issues in Communication and Media</td>
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<tr>
<td>JOUR 1001 [0.5]</td>
<td>Foundations: Journalism in Context</td>
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<td>JOUR 1002 [0.5]</td>
<td>Foundations: Practicing Journalism in a Diverse Society</td>
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<tr>
<td>COMS 2003 [0.5]</td>
<td>Theoretical Foundations in Communication and Media Studies</td>
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<td>COMS 2004 [0.5]</td>
<td>Introduction to Communication Research</td>
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<td>COMS 3001 [0.5]</td>
<td>Quantitative Research in Communication</td>
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<td>COMS 3002 [0.5]</td>
<td>Qualitative Research in Communication</td>
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<td>COMS 3500 [0.5]</td>
<td>Current Issues in Communication and Media Theory</td>
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### B. Credits Not Included in the Major CGPA (11.0 credits):

1. **8.0 credits in electives not in Communication and Media Studies**
2. **3.0 credits in free electives**

### Total Credits

**20.0**

### Communication and Media Studies

#### B.Co.M.S. Combined Honours (20.0 credits)

Students already admitted to the B.CO.M.S. may register for a combined honours degree in Communication and Media Studies and any other discipline offered within the B.A. Honours degree as a Combined Honours.

#### A. Credits Included in the Communication Studies Major CGPA (7.0 credits)

1. **1.0 credit from:**
   - COMS 1001 [0.5] Foundations in Communication and Media Studies
   - COMS 1002 [0.5] Current Issues in Communication and Media
   - JOUR 1001 [0.5] Foundations: Journalism in Context
   - JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society

2. **1.0 credit in:**
   - COMS 2003 [0.5] Theoretical Foundations in Communication and Media Studies
   - COMS 2004 [0.5] Introduction to Communication Research

3. **1.5 credits in:**
   - COMS 3001 [0.5] Quantitative Research in Communication
   - COMS 3002 [0.5] Qualitative Research in Communication
   - COMS 3500 [0.5] Current Issues in Communication and Media Theory

4. **1.5 credits from** the following, including at least 0.5 credit at the 3000-level:
   - FYSM 1217 [0.5] Selected Topics in Communication and Media Studies
   - COMS 2200 [0.5] Big Data and Society
   - COMS 2300 [0.5] Communication as Propaganda
   - COMS 2500 [0.5] Communication and Science
   - COMS 2501 [0.5] Media Law
   - COMS 2504 [0.5] Language and Communication
   - COMS 2600 [0.5] Communication and Culture
   - COMS 2700 [0.5] Global Media and Communication
   - COMS 3100 [0.5] Introduction to Political Management
   - COMS 3108 [0.5] Media Industries and the Network Society
   - COMS 3109 [0.5] Communication, Culture and Identity
The Academic Year (Graduate and Undergraduate Studies)

### B.Co.M.S. (15.0 credits)

The B.Co.M.S. is for students in second year or above who have been previously in the B.Co.M.S. Honours.

#### A. Credits Included in the Major CGPA (6.0 credits):

1. **1.0 credit from:**  
   - **COMS 1001 [0.5]** Foundations in Communication and Media Studies
   - **COMS 1002 [0.5]** Current Issues in Communication and Media
   - **JOUR 1001 [0.5]** Foundations: Journalism in Context
   - **JOUR 1002 [0.5]** Foundations: Practicing Journalism in a Diverse Society

2. **1.0 credit in:**  
   - **COMS 2003 [0.5]** Theoretical Foundations in Communication and Media Studies
   - **COMS 2004 [0.5]** Introduction to Communication Research

3. **1.5 credits in:**  
   - **COMS 3001 [0.5]** Quantitative Research in Communication
   - **COMS 3002 [0.5]** Qualitative Research in Communication
   - **COMS 3500 [0.5]** Current Issues in Communication and Media Theory

4. 2.5 credits, including at least 1.0 credit at the 3000 level, chosen from:
   - **FYSM 1217 [0.5]** Selected Topics in Communication and Media Studies
   - **COMS 2200 [0.5]** Big Data and Society
   - **COMS 2300 [0.5]** Communication as Propaganda
   - **COMS 2500 [0.5]** Communication and Science
   - **COMS 2501 [0.5]** Media Law
   - **COMS 2504 [0.5]** Language and Communication
   - **COMS 2600 [0.5]** Communication and Culture
   - **COMS 2700 [0.5]** Global Media and Communication
   - **COMS 3100 [0.5]** Introduction to Political Management
   - **COMS 3108 [0.5]** Media Industries and the Network Society

### Communication and Media Studies

#### B. Additional Requirements (13.0 credits)  13.0

1. The requirements from the other discipline must be satisfied.
2. Sufficient credits in free electives to total 20.0 credits for the program.

#### Total Credits  20.0
COMS 3109 [0.5] Communication, Culture and Identity
COMS 3302 [0.5] Political Communication
COMS 3308 [0.5] Critical Studies in Advertising and Consumer Culture
COMS 3310 [0.5] Critical Perspectives of Public Relations
COMS 3311 [0.5] Media and Communication in Regional Contexts
COMS 3400 [0.5] Ethical Controversies in Media and Communication
COMS 3401 [0.5] Communications Regulation in Canada
COMS 3403 [0.5] Communication, Technology and Culture
COMS 3404 [0.5] Music Industries
COMS 3406 [0.5] Media Audiences and Users
COMS 3407 [0.5] Comparative Media Studies
COMS 3410 [0.5] Visual Media and Communication
COMS 3411 [0.5] Alternative Media and Social Activism
COMS 3800 [0.5] Special Topic in Communication and Media Studies

B. Credits Not Included in the Major CGPA (9.0 credits):
5. 7.0 credits in electives not in communication and media studies 7.0
6. 2.0 credits in free electives 2.0
Total Credits 15.0

Specialization in Global Media and Communication
B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)
1. 4.5 credits in: Core Courses 4.5
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   GINS 4090 [0.5] Honours Seminar in Global and International Studies
2. 0.0 credit in: International Experience Requirement Preparation
   GINS 1300 [0.0] International Experience Requirement Preparation
3. 7.5 credits in: the Specialization
   a. 1.5 credits in: Foundations 1.5
      COMS 1001 [0.5] Foundations in Communication and Media Studies
      COMS 1002 [0.5] Current Issues in Communication and Media
      COMS 2700 [0.5] Global Media and Communication
   b. 1.0 credit in: Introductory Theory and Methods 1.0

B. Credits Not Included in the Major CGPA (8.0 credits)
4. 8.0 credits in: free electives 8.0
C. Additional Requirements
5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits 20.0

Stream in Global Media and Communication
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in: Core Courses 4.0
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from: the Stream 4.0
   a. Foundations
**Minor in Communication and Media Studies (4.0 credits)**

This Minor is open to all undergraduate degree students in programs other than Communication and Media Studies, and B.G.In.S. Global Media and Communication.

**Requirements:**

1. **1.0 credit from:**
   - COMS 1001 [0.5] Foundations in Communication and Media Studies
   - COMS 1002 [0.5] Current Issues in Communication and Media
   - JOUR 1001 [0.5] Foundations: Journalism in Context
   - JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society

2. **1.0 credit in:**
   - COMS 2003 [0.5] Theoretical Foundations in Communication and Media Studies
   - COMS 2004 [0.5] Introduction to Communication Research

3. **2.0 credits, including at least 1.5 credit at the 3000 level, chosen from:**
   - FYSM 1217 [0.5] Selected Topics in Communication and Media Studies
   - COMS 2200 [0.5] Big Data and Society
   - COMS 2300 [0.5] Communication as Propaganda
   - COMS 2500 [0.5] Communication and Science
   - COMS 2501 [0.5] Media Law
   - COMS 2504 [0.5] Language and Communication
   - COMS 2600 [0.5] Communication and Culture

4. The Language requirement must be met.

**Total Credits** 15.0

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**B. Credits Not Included in the Major CGPA (7.0 credits)**

3. **7.0 credits in:**
   - free electives

**C. Additional Requirements**

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

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**Journalism and Communication and Media Studies**

**B.J. Combined Honours (20.0 credits)**

This program is available only to students registered in the Bachelor of Journalism program.

**A. Credits Included in the Journalism Major CGPA (8.0 credits):**

1. **6.0 credits in:**
   - JOUR 1001 [0.5] Foundations: Journalism in Context
   - JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society
   - JOUR 2201 [1.0] Fundamentals of Reporting
   - JOUR 2202 [0.5] Digital Journalism Toolkit
   - JOUR 2501 [0.5] Media Law
   - JOUR 3207 [0.5] Audio Journalism
   - JOUR 3208 [0.5] Video Journalism
   - JOUR 3225 [0.5] Reporting in Depth
   - JOUR 3235 [0.5] Digital Journalism
   - JOUR 3300 [0.5] Media Ethics in a Digital World
   - JOUR 4001 [0.5] Journalism Now - and Next

2. **2.0 credits from:**
   - Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism (at least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses)
   - Journalism Publications
### Major CGPA (7.0 credits):

1. **3.0 credits from:**
   - COMS 3001 [0.5] Quantitative Research in Communication
   - COMS 3002 [0.5] Qualitative Research in Communication
   - COMS 3500 [0.5] Current Issues in Communication and Media Theory

2. **2.5 credits, including at least 0.5 credit at the 3000 level, from:**
   - COMS 2200 [0.5] Big Data and Society
   - COMS 2300 [0.5] Communication as Propaganda
   - COMS 2500 [0.5] Communication and Science
   - COMS 2501 [0.5] Media Law
   - COMS 2504 [0.5] Language and Communication
   - COMS 2600 [0.5] Communication and Culture
   - COMS 2700 [0.5] Global Media and Communication
   - COMS 3100 [0.5] Introduction to Political Management
   - COMS 3108 [0.5] Media Industries and the Network Society
   - COMS 3109 [0.5] Communication, Culture and Identity
   - COMS 3302 [0.5] Political Communication
   - COMS 3308 [0.5] Critical Studies in Advertising and Consumer Culture
   - COMS 3310 [0.5] Critical Perspectives of Public Relations
   - COMS 3311 [0.5] Media and Communication in Regional Contexts
   - COMS 3400 [0.5] Ethical Controversies in Media and Communication
   - COMS 3401 [0.5] Communications Regulation in Canada
   - COMS 3403 [0.5] Communication, Technology and Culture
   - COMS 3404 [0.5] Music Industries
   - COMS 3406 [0.5] Media Audiences and Users
   - COMS 3407 [0.5] Comparative Media Studies
   - COMS 3410 [0.5] Visual Media and Communication
   - COMS 3411 [0.5] Alternative Media and Social Activism
   - COMS 3412 [0.5] Communication and Health

3. **2.0 credits from:**
   - COMS 4004 [0.5] Communication and Discourse
   - COMS 4006 [0.5] Professional Communication Research
   - COMS 4306 [0.5] Media and Conflict
   - COMS 4307 [0.5] Politics, Communication, and the Publicity State
   - COMS 4311 [0.5] Environmental Communication
   - COMS 4312 [0.5] Crisis and Risk Communication
   - COMS 4313 [0.5] Screen Studies
   - COMS 4315 [0.5] Communication and the Built Environment
   - COMS 4316 [0.5] Indigenous Media in Global Contexts
   - COMS 4317 [0.5] Digital Media and Global Network Society
   - COMS 4337 [0.5] Communication and Public Affairs Strategies
Communication and Media Studies

B.A. Combined Honours (20.0 credits)

Students enrolled in a single discipline within a B.A. Honours program may add Communication and Media Studies as a second discipline within a B.A. Combined Honours. Communication and Media Studies course requirements for the B.A. Combined Honours are the same as those for the B.Co.M.S. Combined Honours.

Regulations

The regulations presented in this section apply to all Bachelor of Communication Studies (B.Co.M.S.) programs.

In addition to program requirements, B.Co.M.S. students must satisfy the Academic Regulations of the University, and the same Breadth requirements that apply to students enrolled in B.A. programs, described below. Students should consult with the School of Journalism and Communication when selecting courses and planning their program.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew,
Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**


**Subject codes:** AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**


**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISIS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**


**Subject codes:** ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GECO, GEM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

**Declared and Undeclared Students**

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

**Change of Program Within the B.A. Degree**

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this
Calendar for information regarding study on Exchange or Letter of Permission.

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.
All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy
Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.
If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements
COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job.

It is the student’s responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.
Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**Bachelor of Communication and Media Studies Honours: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Communication and Media Studies Honours program;
2. Obtained and maintained an overall CGPA of 9.00 or higher.

Bachelor of Communication and Media Studies Honours students must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Course:** COMS 3999

**Work/Study Pattern:**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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</thead>
<tbody>
<tr>
<td>Term Pattern</td>
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<td>Summer W</td>
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<td>Summer W</td>
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<td>Summer S</td>
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</tbody>
</table>

**Legend**

- **S:** Study
- **W:** Work
- **O:** Optional
- * indicates recommended work study pattern
- **student finds own employer for this work-term.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as **recommended** are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degrees**

- Bachelor of Communication and Media Studies (Honours)
- Bachelor of Communication and Media Studies

**Admission Requirements**

**First Year**

**B. Co.M.S. (Honours)**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or **anglais**). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section English.
Language Requirements in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

**B. Co.M.S.**

Access to the B.Co.M.S. degree is limited to B.Co.M.S. (Honours) students who apply to transfer.

**Advanced Standing**

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Communication and Media Studies (Honours);
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Communication and Media Studies (COMS) Courses**

**COMS 1001 [0.5 credit]**

**Foundations in Communication and Media Studies**

An exploration of past and present media, patterns of change, and key approaches to their study.

Includes: Experiential Learning Activity

Precludes additional credit for COMS 1000, COMM 1101. Lecture and discussion groups.

**COMS 1002 [0.5 credit]**

**Current Issues in Communication and Media**

An exploration of communication and media in relation to contemporary political, technological and cultural issues, with a focus on Canada.

Includes: Experiential Learning Activity

Precludes additional credit for COMS 1000, COMM 1101. Lecture and discussion groups.

**COMS 2003 [0.5 credit]**

**Theoretical Foundations in Communication and Media Studies**

The development of communication theory in the context of major social, economic and cultural periods and events. Emphasis on the central debates and traditions that have shaped and defined the field.

Precludes additional credit for COMM 2101 (no longer offered) and COMM 2100 (no longer offered).

Prerequisite(s): COMS 1001 and COMS 1002, or JOUR 1001 and JOUR 1002, and second-year standing in Communication and Media Studies (including BGInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures and discussion groups three hours a week.

**COMS 2004 [0.5 credit]**

**Introduction to Communication Research**

Introduction to the scientific method as interpreted through major traditions in Communication and Media Studies. The course addresses the relationship between theory and evidence, research design, ethics and data management.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 2000 (no longer offered), COMM 2001 (no longer offered).

Prerequisite(s): COMS 1001 and COMS 1002, or JOUR 1001 and JOUR 1002, and second-year standing in Communication and Media Studies (including BGInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures and discussion three hours a week.

**COMS 2200 [0.5 credit]**

**Big Data and Society**

How big data and small data shape society. Databases as a form of media. Topics may include: data policy and regulation, the politics and ethics of big data, data and decision-making, and data as discourse.

Includes: Experiential Learning Activity

Prerequisite(s): Second-year standing or permission of the School of Journalism and Communication.

Lectures three hours a week.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Lecture Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMS 2300</td>
<td>0.5</td>
<td>Communication as Propaganda</td>
<td>How business, government, and civil society actors have used media messages to persuade, influence, and manipulate the public. The impacts of propaganda on individuals and society, the roles of different media technologies in facilitating propaganda, and public resistance to propaganda. Precludes additional credit for COMM 2301 (no longer offered). Prequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002 or PAPM 1000, and second-year standing in Communication and Media Studies (including BPAPM and BGInS related specializations and streams), or permission of the School of Journalism and Communication.</td>
<td>Lectures three hours a week.</td>
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<tr>
<td>COMS 2500</td>
<td>0.5</td>
<td>Communication and Science</td>
<td>How expert knowledge (particularly scientific, medical, and technical) is communicated in the public realm. Topics may include scientific advances and new technologies, health risks, environmental/climate change, and cultural/ideological positioning of science. Prequisite(s): second-year standing or permission of the School of Journalism and Communication.</td>
<td>Lectures three hours a week.</td>
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<tr>
<td>COMS 2501</td>
<td>0.5</td>
<td>Media Law</td>
<td>A survey of laws that affect the Canadian media including the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common-law limitations on freedoms of the press, including publication bans, libel and contempt of court. Also listed as JOUR 2501, MPAD 2501. Precludes additional credit for COMM 2501 (no longer offered). Prequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002 or PAPM 1000, and second-year standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.</td>
<td>Lecture three hours a week.</td>
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<tr>
<td>COMS 2504</td>
<td>0.5</td>
<td>Language and Communication</td>
<td>Some of the central topics in the study of language and communication as pursued by linguists and philosophers, including the nature of meaning, the connections between language, communication and cognition, and language as a social activity. Also listed as PHIL 2504, LING 2504. Precludes additional credit for COMM 2504 (no longer offered). Prequisite(s): second-year standing.</td>
<td>Lectures three hours a week.</td>
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<tr>
<td>COMS 2600</td>
<td>0.5</td>
<td>Communication and Culture</td>
<td>An introduction to the major industries, institutions, regulatory frameworks and key organizations responsible for cultural production in Canada. Precludes additional credit for COMM 2401 (no longer offered), COMM 2601 (no longer offered). Prequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002, and second-year standing in Communication and Media Studies, or permission of the School of Journalism and Communication.</td>
<td>Lectures three hours a week.</td>
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<tr>
<td>COMS 2700</td>
<td>0.5</td>
<td>Global Media and Communication</td>
<td>An introduction to global media and communication, with an emphasis on debates about media power and expansion, digitalization, technology transfer, and societal implications/changes. Students will investigate historical and contemporary contexts of global and transnational communication through a variety of approaches and perspectives. Precludes additional credit for COMM 3405/JOUR 3405 (no longer offered). Prequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002, and second-year standing in Communication and Media Studies (including BGInS related specializations and streams), or permission of the School of Journalism and Communication.</td>
<td>Lectures three hours a week.</td>
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<tr>
<td>COMS 3001</td>
<td>0.5</td>
<td>Quantitative Research in Communication</td>
<td>An introduction to basic statistical methods in media and communication studies. Includes: Experiential Learning Activity Precludes additional credit for COMM 3001 (no longer offered). Prequisite(s): COMS 2004, or PAPM 2000, and third-year standing in Communication and Media Studies (including BPAPM and BGInS related specializations and streams), or permission of the School of Journalism and Communication.</td>
<td>Lecture and lab three hours a week.</td>
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<tr>
<td>COMS 3002</td>
<td>0.5</td>
<td>Qualitative Research in Communication</td>
<td>An introduction to interpretive methods in media and communication studies. Includes: Experiential Learning Activity Precludes additional credit for COMM 3002 (no longer offered). Prequisite(s): COMS 2004, or PAPM 2000, and third-year standing in Communication and Media Studies (including BPAPM and BGInS related specializations and streams), or permission of the School of Journalism and Communication.</td>
<td>Lectures and discussion three hours a week.</td>
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</tbody>
</table>
COMS 3100 [0.5 credit]
Introduction to Political Management
Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills. Also listed as POLM 3000, PSCI 3410. Precludes additional credit for COMM 3100 (no longer offered).
Prerequisite(s): third-year standing.
Lectures three hours a week.

COMS 3108 [0.5 credit]
Media Industries and the Network Society
Examines the theoretical frameworks and major issues and debates relating to media industries and institutions in Canada and internationally. Includes: Experiential Learning Activity Precludes additional credit for COMM 3108 (no longer offered).
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGInS related specializations and streams), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3109 [0.5 credit]
Communication, Culture and Identity
Examines the relationship between media, communication, and identity categories. The course explores identity formation as a cultural phenomenon including questions of race, ethnicity, gender, class, and sexuality. Precludes additional credit for COMM 3109 (no longer offered).
Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM and BGInS related specializations and streams) or in the Minor in Critical Race Studies, or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3302 [0.5 credit]
Political Communication
Examines the relationship between various kinds of communication and political activity in a variety of contexts. Case studies will be drawn from speeches, political campaigns, and debates, using a variety of media forms, from photographs to web sites. Includes: Experiential Learning Activity Precludes additional credit for COMM 3302 (no longer offered).
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3308 [0.5 credit]
Critical Studies in Advertising and Consumer Culture
A critical analysis of major constructs and basic mechanisms of advertising, social marketing and other aspects of consumer culture. The course examines the social, political-economic and cultural implications of consumer culture. Precludes additional credit for COMM 3301 (no longer offered) and COMM 3308 (no longer offered).
Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures and discussion groups three hours a week.

COMS 3310 [0.5 credit]
Critical Perspectives of Public Relations
A critical examination of key aspects of public relations, including histories of PR, media representations of PR, gender and public relations, and the role of PR in business, politics and civil society. Includes: Experiential Learning Activity Precludes additional credit for COMM 4304 (no longer offered).
Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3311 [0.5 credit]
Media and Communication in Regional Contexts
Provides a historical overview of the development of media technologies, and an understanding of the place of media within the political, regulatory, and legal activities of different international regions (e.g., Europe, Asia, Africa, Latin America, etc.). Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGInS related specializations and streams), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3400 [0.5 credit]
Ethical Controversies in Media and Communication
Explores ethical problems and controversies relating to research in media and communication. Focuses on rights and responsibilities of researchers and practitioners as relates to media consumers, producers, and professional communicators in an age when communication circulates quickly within and across borders and other boundaries. Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.
COMS 3401 [0.5 credit]  
Communications Regulation in Canada  
Examines historical and contemporary issues in the regulation of communication practices and institutions in Canada.  
Precludes additional credit for COMM 3401 (no longer offered).  
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.  
Lectures three hours a week.

COMS 3403 [0.5 credit]  
Communication, Technology and Culture  
Examines the relationship between communication technology and society, including factors that contribute to changes in the collection, storage and distribution of information and their cultural implications.  
Includes: Experiential Learning Activity  
Precludes additional credit for COMM 3403 (no longer offered).  
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.  
Lecture three hours a week.

COMS 3404 [0.5 credit]  
Music Industries  
An introduction to the structure and history of the music industries.  
Also listed as MUSI 3403.  
Precludes additional credit for COMM 3404 (no longer offered).  
Prerequisite(s): second year standing.  
Lectures three hours a week.

COMS 3406 [0.5 credit]  
Media Audiences and Users  
Examines the role of audiences in contemporary media industries. Topics include history of audience studies, ratings and the audience commodity, active audience theory, and media fandom.  
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.  
Lectures three hours a week.

COMS 3407 [0.5 credit]  
Comparative Media Studies  
The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.  
Also listed as JOUR 3407.  
Precludes additional credit for COMM 3407 (no longer offered).  
Prerequisite(s): Third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.  
Lectures three hours a week.

COMS 3410 [0.5 credit]  
Visual Media and Communication  
Examines the central importance of visual imagery in contemporary media, culture and everyday life. Draws connections between historical/contemporary explanations of ‘the visual,’ and how texts and technologies reflect the context and cultural values of the environments that produce them, and the challenges for regulation.  
Includes: Experiential Learning Activity  
Prerequisite(s): third year standing in Communication and Media Studies or permission of the School of Journalism and Communication.  
Lectures three hours a week.

COMS 3411 [0.5 credit]  
Alternative Media and Social Activism  
Examines links between media and activism through the lens of past and present social movements and protest events. Addresses leading theories that help conceptualize various types of activist movements, with a focus on the role of media in shaping activist identity and political opportunity.  
Includes: Experiential Learning Activity  
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.  
Lectures three hours a week.

COMS 3412 [0.5 credit]  
Communication and Health  
The concept of health as a sociocultural phenomenon; the many ways that health issues are communicated, defined, represented, and framed.  
Prerequisite(s): third year standing in Communication and Media Studies or permission of the School of Journalism and Communication.  
Lectures three hours a week.
COMS 3500 [0.5 credit]
Current Issues in Communication and Media Theory
Examines theoretical debates and issues facing the field of Communication and Media Studies today.
Precludes additional credit for COMM 2101, COMM 2102 (no longer offered).
Prerequisite(s): COMS 2003 and third-year standing in Communication and Media Studies (including BGInS related specializations and streams), or permission of the School of Journalism and Communication.
Lectures and discussion groups three hours a week.

COMS 3800 [0.5 credit]
Special Topic in Communication and Media Studies
A selected topic not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the Communication and Media Studies program regarding the topic offered.
Prerequisite(s): third-year standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lecture three hours a week.

COMS 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

COMS 4004 [0.5 credit]
Communication and Discourse
Examines the development of theory and methods related to discourse and its use in the analysis of images and texts.
Precludes additional credit for COMM 4004 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4006 [0.5 credit]
Professional Communication Research
Students will work in a team-based environment to carry out empirical research in support of current faculty-led projects. In addition to learning advanced research techniques, students will develop project management and collaborative research skills.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 4000 (no longer offered), COMM 4002 (no longer offered).
Prerequisite(s): COMS 3001 or COMS 3002, and fourth-year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4305 [0.5 credit]
Media and Religion
Critical examination of the ways religion mediates communicative practices, engages with media technologies, and is mediated in mainstream or popular culture. Topics may include: secularization and post-secularization; the politics of representation; religious organizations as communicative actors; fundamentalism.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4306 [0.5 credit]
Media and Conflict
Media representations of conflict such as war and terrorism, and how they influence the collective imagination.
Precludes additional credit for COMM 4306 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4307 [0.5 credit]
Politics, Communication, and the Publicity State
Examines the histories, key actors, issues and trends in political communication, including the shift of government communication from information to promotion, its reliance on publicity practices, issues and crisis management, and implications for democratic citizenship.
Precludes additional credit for COMM 4307 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4311 [0.5 credit]
Environmental Communication
Examines environmental, animal, and earth observing media and pays special attention to the production of visual materials. The course explores the influence of media systems on the production, dissemination, and meaning of environmental observations and looks at sites of contemporary environmental contention.
Prerequisite(s): fourth-year Honours standing and enrollment in Communication and Media Studies or in the Minor in Environmental and Climate Humanities, or permission of the School of Journalism and Communication.
Lectures three hours a week.
COMS 4312 [0.5 credit]
Crisis and Risk Communication
Examines crises and risks from the perspective of communication. The course explores the role of various media in shaping risk perceptions and constructions of crisis, the politics of crisis and risk management, symbolic dimensions in crisis construction, and ethical dilemmas. Includes: Experiential Learning Activity
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4313 [0.5 credit]
Screen Studies
Issues in the past, present and future of film, television and related media. Screens are examined as media that represent and shape values and culture, as technologies that are produced and purchased, and as objects that are regulated through policy.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4315 [0.5 credit]
Communication and the Built Environment
How communication occurs in conjunction with the built environment, with special attention to cultural artefacts such as houses, schools, factories, prisons, office buildings, roads, parks, and the urban (and suburban) environment. Various models, theories, and philosophies of the built environment are considered.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4316 [0.5 credit]
Indigenous Media in Global Contexts
Overview of Indigenous global media exploring film and film festivals, television networks, media arts, and the Internet. We will discuss struggles over mediated self-representation as well as debates over what constitutes Indigenous media relating to aesthetics, community affiliation, and identity.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4317 [0.5 credit]
Digital Media and Global Network Society
Critical and institutional approaches to the expansion of digital media in the context of international media regulation, globalization, media concentration and ownership, and the global flows of networked communication and information.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth year Honours standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4337 [0.5 credit]
Communication and Public Affairs Strategies
This hands-on course teaches students how to develop, design, and execute a public affairs strategy. Emphasis on understanding the interaction between public institutions and stakeholders and how effective public affairs strategies can be designed to help organizations achieve goals through public or opinion leader persuasion.
Includes: Experiential Learning Activity
Also listed as PAPM 4000.
Prerequisite(s): fourth-year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4401 [0.5 credit]
Global Internet Policy and Governance
Public interest and policy battles over critical internet resources and implications for development of the internet, citizens’ rights and freedoms, the economy, and democratic culture; common carriage, privacy, security and surveillance, access, speech rights, and diversity of information sources.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 4401 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4403 [0.5 credit]
Digital Media Industries
Key approaches to the study of media as industries and how economics, markets and technologies intersect with social choices, politics and power to shape how decisions are made about the design, ownership, organization and control of media.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 4403 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.
COMS 4405 [0.5 credit]
The Networked Self
How notions of identity are changing as we conduct our lives through networked media and communication such as social media, online search, the Internet of Things, and wearable devices. Subjectivity, personhood, posthumanism, algorithmic control, and privacy.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4406 [0.5 credit]
Open Government and Communication
The contemporary open government movement; how communication can be used to improve governance and to foster a more collaborative relationship between governments and citizens. Access to information, the challenges of open data, expectations of transparency, and models of citizen engagement/consultation.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4407 [0.5 credit]
Communication and Critical Data Studies
Theoretical perspectives, ethical problems, and contemporary issues relevant to communication and data studies. Students will critically examine the rise of ‘big data’ and ‘datafication’ as socio-technical phenomena that have become a crucial part of our communication landscape.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4408 [0.5 credit]
Creative Work
Contemporary trends affecting creative work in cultural industries. How careers in the arts, culture and media are increasingly desirable as a way for individual workers to find personal fulfillment and as a means of reinvigorating post-industrial economies.
Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4410 [0.5 credit]
Mobile Media
Critical examination of the history, development, and expansion of mobile media and its impact on culture, connectivity, and practice; locative media practices, geocoding, wireless communication, mobile technologies, and user experience in everyday life.
Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4411 [0.5 credit]
Algorithmic Culture
The ways in which computerized algorithms engage in the traditional work of culture: the sorting, classifying, and hierarchizing of people, places, objects, and ideas to produce new habits of thought, conduct, expression, and material outcomes.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4412 [0.5 credit]
Game Studies
Games as media. The history of gaming and mediated play in terms of technology and form, industry, labour, gender and subcultural practice.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4501 [0.5 credit]
Digital Media Production
This workshop introduces practice-based tools and techniques relevant in contemporary professional communication, such as basic web development, podcasting, and digital photography.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4502 [0.5 credit]
Storytelling in the Digital Age
In this workshop students learn to write compelling stories for the digital age. They engage with examples of great storytelling across print and online platforms, from magazines and newspapers to blogs and podcasts, to gain a deeper understanding of what makes some stories stand out.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.
COMS 4503 [0.5 credit]
Visualizing Social Media: Hashtags, keywords, & conversations
This workshop introduces a range of methods and practices in data mining and analytics. Techniques include data and text mining, data analysis (including sentiment and social network analysis), data visualization and modeling. Opportunity to work with analytics and mapping software on students’ own projects.
Includes: Experiential Learning Activity
Prerequisite(s): COMS 3001 and fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4504 [0.5 credit]
Engaging the Public: Stakeholders, participation & consultation
This workshop introduces the challenges of conceptualizing and conducting public consultations. This includes audience or participant selection, a range of consultation techniques and formats, marketing and communication, analysis, as well as an awareness of policies and regulations governing consultations.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4505 [0.5 credit]
Professional Writing and Speaking
In this workshop students develop skills in professional written communication, such as press releases, blogs, op-eds, policy briefs, and speeches. Students will also hone their public speaking skills presenting their written work in different formats.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4506 [0.5 credit]
Event Management and Community Partnerships
This workshop introduces the stages of event management for potential community partners. This includes conceptualization, marketing and sponsorships, production and financing, to risk management.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.
COMS 4607 [0.5 credit]
Communication and Food
Food in and as communication. Food and identity, food and culture, food environments, food systems, food politics, and food and community development.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4608 [0.5 credit]
Sound Studies
How hearing and listening practices have changed over time, and the role of sound technology in shaping our understanding of each other, our world, and ourselves.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies, or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4800 [0.5 credit]
Special Topic in Communication and Media Studies
A selected topic not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the Communication and Media Studies program regarding the topic offered.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4908 [1.0 credit]
Honours Research Essay
The Honours Research Essay (HRE) provides eligible students with an opportunity to complete an independent research essay under the supervision of a faculty member. The HRE must be completed over two consecutive academic terms, beginning in the fall term.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 4908 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGINs related specializations), with a CGPA of 10.0 or higher, or permission of the Undergraduate Supervisor. Unscheduled.

Community Engagement (Minor)
This section presents the requirements for programs in:
• Minor in Community Engagement

Minor in Community Engagement (4.0 credits)
This minor is open to all undergraduate degree students in any program. Students in any Sociology or Anthropology major should select courses carefully if they wish to use courses from the major in their minor. Such students should always consult the department.

Requirements:
1. 0.5 credit from:

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<td>ANTH 2180</td>
<td>Foundations in Community Engagement</td>
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<td>SOCI 2180</td>
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2. 0.5 credit from:

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<td>Community Engagement Capstone</td>
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3. 1.0 credit from Engaging the Community courses:

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<td>AFRI 3900</td>
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<td>ANTH 4000</td>
<td>Field Placement in Anthropology</td>
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<td>ANTH 4100</td>
<td>Ethnographic Field Course</td>
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<td>ARTH 3701</td>
<td>Art and Architecture on Site</td>
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<td>ARTH 4701</td>
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<td>CDNS 1101</td>
<td>Ottawa: Exploring National Institutions</td>
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<td>DIGH 4005</td>
<td>Digital Humanities Practicum</td>
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<td>Regional Field Excursion</td>
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<td>Indigeneity in the City</td>
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<td>INDS 4015</td>
<td>Land as a Relation</td>
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<td>INDS 4020</td>
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<td>Civic Engagement and Public Institutions II</td>
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<td>PHIL 2320</td>
<td>Children, Literature, and Philosophy</td>
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<td>PSCI 3906</td>
<td>Full-Year Political Science Internship</td>
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<td>SOCI 4170</td>
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### Courses Earned

#### Credits Earned

- 4.0 credits from courses:
  - GEOG 4021 [0.5] - Seminar in Culture, Identity and Place
  - GEOG 4022 [0.5] - Seminar in People, Resources and Environmental Change
  - GEOG 4323 [0.5] - Urban and Regional Planning
  - GINS 3300 [0.5] - Global and International Studies Abroad: Selected Topics
  - HIST 2811 [0.5] - Public History from Memory to Museums
  - HIST 3814 [0.5] - Crafting Digital History
  - HLTH 2003 [0.5] - Social Determinants of Health
  - HLTH 3101 [0.5] - Global Health
  - HLTH 3102 [0.5] - Indigenous Health in a Global World
  - HUMR 3504 [0.5] - Public Health and Human Rights
  - IDES 2600 [0.5] - Human Factors/Ergonomics in Design
  - IDES 3107 [0.5] - Design and Sustainability
  - IDES 3601 [0.5] - Research for Design
  - INDG 3001 [0.5] - Indigenous Governance
  - INDG 3011 [0.5] - Indigenous Rights, Resistance, and Resurgence
  - LAWS 2105 [0.5] - Social Justice and Human Rights
  - LAWS 3307 [0.5] - Youth and Criminal Law
  - LAWS 3503 [0.5] - Equality and Discrimination
  - LAWS 3504 [0.5] - Law and Aboriginal Peoples
  - LAWS 3800 [0.5] - Law of Environmental Quality
  - LAWS 4001 [0.5] - Law, Family and Gender
  - LAWS 4305 [0.5] - Criminal Justice Reform
  - LAWS 4311 [0.5] - Human Rights in Canadian Prisons
  - LAWS 4503 [0.5] - Law, Disability and Society
  - LAWS 4504 [0.5] - Indigenous Criminal Justice
  - LAWS 4603 [0.5] - Transitional Justice
  - LAWS 4607 [0.5] - Immigration and Refugee Law
  - LAWS 4800 [0.5] - Environment and Social Justice
  - MUSI 2008 [0.5] - Music of the World's Peoples
  - MUSI 3103 [0.5] - Music in Canada
  - MUSI 3302 [0.5] - Music and Gender II
  - MUSI 4102 [0.5] - Theory and Methods in Ethnomusicology
  - MUSI 4103 [0.5] - Ethnomusicology of Canadian Traditions
  - MUSI 4104 [0.5] - First Peoples Music in Canada
  - MUSI 4303 [0.5] - Music and Gender II
  - MUSI 4306 [0.5] - Music and Wellbeing in a Global Context
  - PHIL 1550 [0.5] - Introduction to Ethics and Social Issues
  - PHIL 2103 [0.5] - Philosophy of Human Rights
  - PHIL 2306 [0.5] - Philosophy and Feminism
  - PHIL 2307 [0.5] - Gender and Philosophy
  - PHIL 2380 [0.5] - Introduction to Environmental Ethics
  - PHIL 3340 [0.5] - Topics in Contemporary Social and Political Philosophy
  - PHIL 3350 [0.5] - Philosophy, Ethics, and Public Affairs
  - PHIL 3360 [0.5] - Philosophy, Economics, and Public Policy

### Individual Courses

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<td>AFRI 3100 [0.5]</td>
<td>African Studies Abroad: Selected Topics</td>
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<td>ALDS 3205 [0.5]</td>
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<td>ANTH 2020 [0.5]</td>
<td>Race and Ethnicity</td>
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<td>ANTH 2080 [0.5]</td>
<td>Humans/Animals: the More-than-Human in Social Research</td>
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<td>ANTH 2680 [0.5]</td>
<td>Anthropology of &quot;Mainstream&quot; North America</td>
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<td>ANTH 3005 [0.5]</td>
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<td>ANTH 4006 [0.5]</td>
<td>Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology</td>
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<td>CRST 2001 [0.5]</td>
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<td>DBST 2001 [0.5]</td>
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<td>DBST 3001 [0.5]</td>
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<td>DIGH 3814 [0.5]</td>
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<td>ENGL 3608 [0.5]</td>
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<td>ENGL 3920 [0.5]</td>
<td>Literary Ecological Fieldwork</td>
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<td>ENST 2001 [0.5]</td>
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<td>FILM 2204 [0.5]</td>
<td>Indigenous Cinema and Media</td>
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<td>FYSM 1212 [0.5]</td>
<td>Contemporary Moral, Social, and Religious Issues</td>
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<td>GEOG 2023 [0.5]</td>
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<td>Urban and Regional Planning</td>
</tr>
<tr>
<td>GINS 3300 [0.5]</td>
<td>Global and International Studies Abroad: Selected Topics</td>
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<td>HIST 2811 [0.5]</td>
<td>Public History from Memory to Museums</td>
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<tr>
<td>HIST 3814 [0.5]</td>
<td>Crafting Digital History</td>
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<td>HLTH 2003 [0.5]</td>
<td>Social Determinants of Health</td>
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<td>HLTH 3101 [0.5]</td>
<td>Global Health</td>
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<tr>
<td>HLTH 3102 [0.5]</td>
<td>Indigenous Health in a Global World</td>
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<tr>
<td>HUMR 3504 [0.5]</td>
<td>Public Health and Human Rights</td>
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<tr>
<td>IDES 2600 [0.5]</td>
<td>Human Factors/Ergonomics in Design</td>
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<tr>
<td>IDES 3107 [0.5]</td>
<td>Design and Sustainability</td>
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<tr>
<td>IDES 3601 [0.5]</td>
<td>Research for Design</td>
</tr>
<tr>
<td>INDG 3001 [0.5]</td>
<td>Indigenous Governance</td>
</tr>
<tr>
<td>INDG 3011 [0.5]</td>
<td>Indigenous Rights, Resistance, and Resurgence</td>
</tr>
<tr>
<td>LAWS 2105 [0.5]</td>
<td>Social Justice and Human Rights</td>
</tr>
<tr>
<td>LAWS 3307 [0.5]</td>
<td>Youth and Criminal Law</td>
</tr>
<tr>
<td>LAWS 3503 [0.5]</td>
<td>Equality and Discrimination</td>
</tr>
<tr>
<td>LAWS 3504 [0.5]</td>
<td>Law and Aboriginal Peoples</td>
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<tr>
<td>LAWS 3800 [0.5]</td>
<td>Law of Environmental Quality</td>
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<tr>
<td>LAWS 4001 [0.5]</td>
<td>Law, Family and Gender</td>
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<td>LAWS 4305 [0.5]</td>
<td>Criminal Justice Reform</td>
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<td>LAWS 4311 [0.5]</td>
<td>Human Rights in Canadian Prisons</td>
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<td>LAWS 4503 [0.5]</td>
<td>Law, Disability and Society</td>
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<td>LAWS 4504 [0.5]</td>
<td>Indigenous Criminal Justice</td>
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<td>LAWS 4603 [0.5]</td>
<td>Transitional Justice</td>
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<td>LAWS 4607 [0.5]</td>
<td>Immigration and Refugee Law</td>
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<tr>
<td>LAWS 4800 [0.5]</td>
<td>Environment and Social Justice</td>
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<td>MUSI 2008 [0.5]</td>
<td>Music of the World's Peoples</td>
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<tr>
<td>MUSI 3103 [0.5]</td>
<td>Music in Canada</td>
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<tr>
<td>MUSI 3302 [0.5]</td>
<td>Music and Gender II</td>
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<tr>
<td>MUSI 4102 [0.5]</td>
<td>Theory and Methods in Ethnomusicology</td>
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<tr>
<td>MUSI 4103 [0.5]</td>
<td>Ethnomusicology of Canadian Traditions</td>
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<tr>
<td>MUSI 4104 [0.5]</td>
<td>First Peoples Music in Canada</td>
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<tr>
<td>MUSI 4303 [0.5]</td>
<td>Music and Gender II</td>
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<tr>
<td>MUSI 4306 [0.5]</td>
<td>Music and Wellbeing in a Global Context</td>
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<tr>
<td>PHIL 1550 [0.5]</td>
<td>Introduction to Ethics and Social Issues</td>
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<tr>
<td>PHIL 2103 [0.5]</td>
<td>Philosophy of Human Rights</td>
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<tr>
<td>PHIL 2306 [0.5]</td>
<td>Philosophy and Feminism</td>
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<tr>
<td>PHIL 2307 [0.5]</td>
<td>Gender and Philosophy</td>
</tr>
<tr>
<td>PHIL 2380 [0.5]</td>
<td>Introduction to Environmental Ethics</td>
</tr>
<tr>
<td>PHIL 3340 [0.5]</td>
<td>Topics in Contemporary Social and Political Philosophy</td>
</tr>
<tr>
<td>PHIL 3350 [0.5]</td>
<td>Philosophy, Ethics, and Public Affairs</td>
</tr>
<tr>
<td>PHIL 3360 [0.5]</td>
<td>Philosophy, Economics, and Public Policy</td>
</tr>
</tbody>
</table>
PHIL 3380 [0.5] Environments, Technology and Values
PIPS 3000 [0.5] Site-Specific Performance
PSCI 2500 [0.5] Gender and Politics
PSCI 3006 [0.5] Social Power in Canadian Politics
PSYC 2301 [0.5] Introduction to Health Psychology
SOCI 2010 [0.5] Critical Approaches to Economic Inequality
SOCI 2020 [0.5] Race and Ethnicity
SOCI 2030 [0.5] Work, Industry and Occupations
SOCI 2040 [0.5] Food, Culture and Society
SOCI 2043 [0.5] Sociology of the Family
SOCI 2045 [0.5] Gender and Society
SOCI 2080 [0.5] Humans/Animals: the More-than-Human in Social Research
SOCI 2170 [0.5] Foundations in Social Justice
SOCI 2450 [0.5] Crime and Society
SOCI 2702 [0.5] Power and Social Change
SOCI 2705 [0.5] Popular Culture in the Digital Age
SOCI 3010 [0.5] Power, Oppression and Resistance
SOCI 3019 [0.5] Sociology of International Migration
SOCI 3020 [0.5] Studies in Race and Ethnicity
SOCI 3030 [0.5] Studies in Work, Industry and Occupations: Authority and Expertise
SOCI 3038 [0.5] Studies in Urban Sociology
SOCI 3040 [0.5] Studies in the Sociology of Gender
SOCI 3044 [0.5] Sociology of Sex and Sexuality
SOCI 3050 [0.5] Studies in the Sociology of Health
SOCI 3055 [0.5] Studies in Addictions
SOCI 3056 [0.5] Women and Health
SOCI 3060 [0.5] Critical Disability Studies
SOCI 3170 [0.5] Social Justice in Action
SOCI 3300 [0.5] Studies in the Sociology of Education
SOCI 3430 [0.5] Studies in Collective Action and Social Movements
SOCI 3480 [0.5] Law and Social Regulation
SOCI 4040 [0.5] Feminist Sociology of Intersectionality
SOCI 4730 [0.5] Colonialism and Post-Colonialism
SOWK 2005 [0.5] Values and Ethics for Social Work
SOWK 2203 [0.5] Introduction to Social Work Practice with Groups and Communities
SOWK 3207 [0.5] Human Rights Practice in Civil Society
SOWK 4000 [0.5] Social Work and Indigenous Peoples
SOWK 4003 [0.5] Advanced Social Work Practice with Communities
SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
SXST 2102 [0.5] Sexuality, Gender, and Security
SXST 4104 [0.5] Sexuality and Political Economy
TSES 3001 [0.5] Technology-Society Interactions
TSES 4006 [0.5] Technology and Society: Work
WGST 2801 [0.5] Activism, Feminisms, and Social Justice

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

**Regulations**

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students, including the process of Academic Performance Evaluation. See the Academic Regulations of the University section of this Calendar.

**Computer Science**

This section presents the requirements for programs in:
- Computer Science B.C.S. Honours
- Computer Science Industrial Applications Internship Option B.C.S. Honours
- Computer Science Algorithms Stream B.C.S. Honours
- Computer Science Management and Business Systems Stream B.C.S. Honours
- Computer Science Software Engineering Stream B.C.S. Honours
- Computer Science Network Computing Stream B.C.S. Honours
- Computer Science Computer and Internet Security Stream B.C.S. Honours
- Computer Science Mobile Computing Stream B.C.S. Honours
- Computer Science Computer Game Development Stream B.C.S. Honours
- Computer Science B.C.S. Major
- Minor in Computer Science

**Program Requirements**

**Course Categories**

The following categories of courses are used in defining the program requirements in Computer Science.

**Computer Science (COMP)**

In addition to the courses with subject code COMP, the following courses offered by the Faculty of Engineering and Design are relevant to the B.C.S. program and the Combined Honours programs. These courses are counted as Computer Science credits in B.C.S., Minor in Computer Science and Combined Honours program requirements:

- SYSC 3303 [0.5] Real-Time Concurrent Systems
- SYSC 4005 [0.5] Discrete Simulation/Modeling
- SYSC 4106 [0.5] The Software Economy and Project Management
- SYSC 4507 [0.5] Computer Systems Architecture

**Breadth Electives**

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, the Sprott School
of Business and the Faculty of Science except for courses in COMP, MATH, STAT and the Prohibited Courses category.

**Natural Science Electives**
This category is defined with the B.Math. programs. See the Mathematics Program section of this Calendar for details.

**Prohibited Courses**
The following courses cannot be used for credit in the B.C.S., the Computer Science Minor, or any Combined Computer Science program:

- BUSI 2402 [0.5] Business Applications Development
- BUSI 3400 [0.5] Data and Information Management
- CGSC 1005 [0.5] Computational Methods in Cognitive Science
- COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students
- MATH 1009 [0.5] Mathematics for Business
- MATH 1119 [0.5] Linear Algebra: with Applications to Business
- ECON 1401/MATH 1401 Elementary Mathematics for Economics I
- ECON 1402/MATH 1402 Elementary Mathematics for Economics II

**Bachelor of Computer Science Honours**

**Bachelor of Computer Science Honours Streams**
B.C.S. Honours students may either register in the B.C.S. Honours degree below, or in one of the B.C.S. Honours streams that follow.

**Computer Science**

**B.C.S. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (9.0 credits)**

1. **6.5 credits in:***
   - COMP 1405 [0.5] Introduction to Computer Science I
   - COMP 1406 [0.5] Introduction to Computer Science II
   - COMP 1805 [0.5] Discrete Structures I
   - COMP 2401 [0.5] Introduction to Systems Programming
   - COMP 2402 [0.5] Abstract Data Types and Algorithms
   - COMP 2404 [0.5] Introduction to Software Engineering
   - COMP 2406 [0.5] Fundamentals of Web Applications
   - COMP 2804 [0.5] Discrete Structures II
   - COMP 3000 [0.5] Operating Systems
   - COMP 3004 [0.5] Object-Oriented Software Engineering
   - COMP 3005 [0.5] Database Management Systems
   - COMP 3007 [0.5] Programming Paradigms
   - COMP 3804 [0.5] Design and Analysis of Algorithms I

2. **0.5 credit in COMP at the 2000-level or above**

3. **2.0 credits in:**
   - COMP 4905 and 1.5 credits in COMP at the 4000-level, or
   - COMP 4906 and 1.0 credit in COMP at the 4000-level

**B. Credits Not Included in the Major CGPA (11.0 credits)**

4. **1.5 credits from:**
   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - 0.5 credit in MATH at the 2000-level or above

5. **0.5 credit in:**
   - STAT 2507 [0.5] Introduction to Statistical Modeling I

6. **5.0 credits in Breadth Electives**

7. **4.0 credits in free electives.**

**Total Credits**
20.0

**Computer Science Industrial Applications Internship Option**

**B.C.S. Honours (20.0 credits)**
Registration in the internship option is by permission of the School only.

**Courses Delivered at the Premises of the Industrial Partner - 4.0 credits**

**Internship Courses - 4.0 credits**
- COMP 1910 [0.5] Internship
- COMP 1911 [0.5] Internship
- COMP 2910 [0.5] Internship
- COMP 2911 [0.5] Internship
- COMP 3910 [0.5] Internship
- COMP 3911 [0.5] Internship
- COMP 4910 [0.5] Internship
- COMP 4911 [0.5] Internship

**Courses to be Delivered On-Campus - 11.0 credits**

**Core BCS Courses - 11.0 credits**
- COMP 1405 [0.5] Introduction to Computer Science I
- COMP 1406 [0.5] Introduction to Computer Science II
- COMP 2401 [0.5] Introduction to Systems Programming
- COMP 2402 [0.5] Abstract Data Types and Algorithms
- COMP 2404 [0.5] Introduction to Software Engineering
- COMP 2406 [0.5] Fundamentals of Web Applications
- COMP 3000 [0.5] Operating Systems
- COMP 3004 [0.5] Object-Oriented Software Engineering
- COMP 3005 [0.5] Database Management Systems
- COMP 3007 [0.5] Programming Paradigms
- COMP 1805 [0.5] Discrete Structures I
- COMP 2804 [0.5] Discrete Structures II
- COMP course at the 2000-level or above [0.5]
- COMP 3804 [0.5] Design and Analysis of Algorithms I
- COMP course at the 4000-level [0.5]
- COMP course at the 4000-level [0.5]
- COMP course at the 4000-level [0.5]
- COMP 4905 [0.5] Honours Project
Math 1007 [0.5] Elementary Calculus I  
Math 1107 [0.5] Linear Algebra I  
Math course at the 2000-level or above [0.5]  
Stat 2507 [0.5] Introduction to Statistical Modeling I

**Breadth Electives - 5.0 credits**

- Elective 1 [0.5]  
- Elective 2 [0.5]  
- Elective 3 [0.5]  
- Elective 4 [0.5]  
- Elective 5 [0.5]  
- Elective 6 [0.5]  
- Elective 7 [0.5]  
- Elective 8 [0.5]  
- Elective 9 [0.5]  
- Elective 10 [0.5]  

**Computer Science Algorithms Stream B.C.S. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (10.0 credits)**

1. **6.5 credits in:**

- Comp 1405 [0.5] Introduction to Computer Science I  
- Comp 1406 [0.5] Introduction to Computer Science II  
- Comp 1805 [0.5] Discrete Structures I  
- Comp 2401 [0.5] Introduction to Systems Programming  
- Comp 2402 [0.5] Abstract Data Types and Algorithms  
- Comp 2404 [0.5] Introduction to Software Engineering  
- Comp 2406 [0.5] Fundamentals of Web Applications  
- Comp 2804 [0.5] Discrete Structures II  
- Comp 3000 [0.5] Operating Systems  
- Comp 3004 [0.5] Object-Oriented Software Engineering  
- Comp 3005 [0.5] Database Management Systems  
- Comp 3007 [0.5] Programming Paradigms  
- Comp 3804 [0.5] Design and Analysis of Algorithms I

2. **1.5 credits in:**

- Comp 3801 [0.5] Algorithms for Modern Data Sets  
- Comp 3803 [0.5] Introduction to Theory of Computation  
- Comp 4804 [0.5] Design and Analysis of Algorithms II

3. **0.5 credit in:**

- Comp 4001 [0.5] Distributed Computing

4. **1.5 credits in:**

- Comp 4905 and 1.0 credit in Comp at the 4000-level  
- Comp 4906 and 0.5 credit in Comp at the 4000-level

**B. Credits Not Included in the Major CGPA (10.0 credits)**

5. **1.5 credits from:**

- Math 1007 [0.5] Elementary Calculus I  
- Math 1104 [0.5] Linear Algebra for Engineering or Science  
- 0.5 credit in Math at the 2000-level or above

6. **0.5 credit in:**

- Stat 2507 [0.5] Introduction to Statistical Modeling I

**Total Credits 20.0**

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**Computer Science Management and Business Systems Stream B.C.S. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (9.0 credits)**

1. **6.5 credits in:**

- Comp 1405 [0.5] Introduction to Computer Science I  
- Comp 1406 [0.5] Introduction to Computer Science II  
- Comp 1805 [0.5] Discrete Structures I  
- Comp 2401 [0.5] Introduction to Systems Programming  
- Comp 2406 [0.5] Fundamentals of Web Applications  
- Comp 2804 [0.5] Discrete Structures II  
- Comp 3000 [0.5] Operating Systems  
- Comp 3004 [0.5] Object-Oriented Software Engineering  
- Comp 3005 [0.5] Database Management Systems  
- Comp 3007 [0.5] Programming Paradigms  
- Comp 3804 [0.5] Design and Analysis of Algorithms I

2. **0.5 credit in Comp at the 2000-level or above**

3. **2.0 credits in:**

- Comp 4905 and 1.5 credits in Comp at the 4000-level, or  
- Comp 4906 and 1.0 credit in Comp at the 4000-level

**B. Credits Not Included in the Major CGPA (11.0 credits)**

4. **1.5 credits from:**

- Math 1007 [0.5] Elementary Calculus I  
- Math 1104 [0.5] Linear Algebra for Engineering or Science  
- 0.5 credit in Math at the 2000-level or above

5. **0.5 credit in:**

- Stat 2507 [0.5] Introduction to Statistical Modeling I

6. **1.0 credit from:**

- Busi 1003 and 0.5 credit in Busi at the 2000-level, or  
- Busi 1001 [0.5] Principles of Financial Accounting  
- & Busi 1002 [0.5] Management Accounting

7. **2.0 credits in:**

- Busi 2121 [0.5] Introduction to Organizational Behaviour  
- Busi 2301 [0.5] Introduction to Supply and Operations Management  
- Busi 2503 [0.5] Introduction to Finance  
- Busi 3402 [0.5] Systems Analysis and Design

8. **1.0 credit in:**

- Econ 1001 [0.5] Introduction to Microeconomics  
- Econ 1002 [0.5] Introduction to Macroeconomics

9. **1.5 credit in Busi at the 3000-level or above**

10. **3.5 credits in free electives.**

**Total Credits 20.0**
Computer Science
Software Engineering Stream
B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.5 credits)
1. 6.5 credits in:
   - COMP 1405 [0.5] Introduction to Computer Science I
   - COMP 1406 [0.5] Introduction to Computer Science II
   - COMP 1805 [0.5] Discrete Structures I
   - COMP 2401 [0.5] Introduction to Systems Programming
   - COMP 2402 [0.5] Abstract Data Types and Algorithms
   - COMP 2404 [0.5] Introduction to Software Engineering
   - COMP 2406 [0.5] Fundamentals of Web Applications
   - COMP 2804 [0.5] Discrete Structures II
   - COMP 3000 [0.5] Operating Systems
   - COMP 3004 [0.5] Object-Oriented Software Engineering
   - COMP 3005 [0.5] Database Management Systems
   - COMP 3007 [0.5] Programming Paradigms
   - COMP 3804 [0.5] Design and Analysis of Algorithms I

2. 0.5 credit in:
   - COMP 3008 [0.5] Human-Computer Interaction

3. 1.5 credits in:
   - COMP 4004 [0.5] Software Quality Assurance
   - SYSC 3303 [0.5] Real-Time Concurrent Systems
   - SYSC 4106 [0.5] The Software Economy and Project Management

4. 1.0 credit from:
   - COMP 4905 and 0.5 credit in COMP at the 4000-level, or
   - COMP 4906 [1.0] Honours Thesis

B. Credits Not Included in the Major CGPA (11.0 credits)
5. 1.5 credits from:
   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - 0.5 credit in MATH at the 2000-level or above

6. 0.5 credit in:
   - STAT 2507 [0.5] Introduction to Statistical Modeling I

7. 5.0 credits in Breadth Electives
8. 4.0 credits in free electives.

Total Credits 20.0

Computer Science
Network Computing Stream
B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)
1. 6.5 credits in:
   - COMP 1405 [0.5] Introduction to Computer Science I
   - COMP 1406 [0.5] Introduction to Computer Science II
   - COMP 1805 [0.5] Discrete Structures I
   - COMP 2401 [0.5] Introduction to Systems Programming
   - COMP 2402 [0.5] Abstract Data Types and Algorithms
   - COMP 2404 [0.5] Introduction to Software Engineering
   - COMP 2406 [0.5] Fundamentals of Web Applications
   - COMP 2804 [0.5] Discrete Structures II
   - COMP 3000 [0.5] Operating Systems
   - COMP 3004 [0.5] Object-Oriented Software Engineering
   - COMP 3005 [0.5] Database Management Systems
   - COMP 3007 [0.5] Programming Paradigms

2. 0.5 credit in:
   - COMP 3009 [0.5] Principles of Computer Networks

3. 2.0 credits from:
   - a) COMP 4905 and 1.5 credit from the following list of 4000-level COMP courses, or
   - b) COMP 4906 and 1.0 credit from the following list of 4000-level COMP courses.

   - COMP 4000 [0.5] Distributed Operating Systems
   - COMP 4001 [0.5] Distributed Computing
   - COMP 4009 [0.5] Programming for Clusters and Multi-Core Processors
   - COMP 4108 [0.5] Computer Systems Security
   - COMP 4203 [0.5] Wireless Networks and Security
   - COMP 4804 [0.5] Design and Analysis of Algorithms II

   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - 0.5 credit in MATH at the 2000-level or above

4. 0.5 credit in:
   - STAT 2507 [0.5] Introduction to Statistical Modeling I

Total Credits 20.0
### Computer Science

#### Mobile Computing Stream

**B.C.S. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (9.5 credits)**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course(s)</th>
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</thead>
<tbody>
<tr>
<td>6.5</td>
<td>COMP 1405 [0.5] Introduction to Computer Science I</td>
</tr>
<tr>
<td></td>
<td>COMP 1406 [0.5] Introduction to Computer Science II</td>
</tr>
<tr>
<td></td>
<td>COMP 1805 [0.5] Discrete Structures I</td>
</tr>
<tr>
<td></td>
<td>COMP 2401 [0.5] Introduction to Systems Programming</td>
</tr>
<tr>
<td></td>
<td>COMP 2402 [0.5] Abstract Data Types and Algorithms</td>
</tr>
<tr>
<td></td>
<td>COMP 2404 [0.5] Introduction to Software Engineering</td>
</tr>
<tr>
<td></td>
<td>COMP 2406 [0.5] Fundamentals of Web Applications</td>
</tr>
<tr>
<td></td>
<td>COMP 2804 [0.5] Discrete Structures II</td>
</tr>
<tr>
<td></td>
<td>COMP 3000 [0.5] Operating Systems</td>
</tr>
<tr>
<td></td>
<td>COMP 3004 [0.5] Object-Oriented Software Engineering</td>
</tr>
<tr>
<td></td>
<td>COMP 3005 [0.5] Database Management Systems</td>
</tr>
<tr>
<td></td>
<td>COMP 3007 [0.5] Programming Paradigms</td>
</tr>
<tr>
<td></td>
<td>COMP 3804 [0.5] Design and Analysis of Algorithms I</td>
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</tbody>
</table>

**B. 1.0 credit in:**

<table>
<thead>
<tr>
<th>Course(s)</th>
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<tbody>
<tr>
<td>COMP 1601 [0.5] Introduction to Mobile Application Development</td>
</tr>
<tr>
<td>COMP 2601 [0.5] Mobile Applications</td>
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</tbody>
</table>

**C. 0.5 credits from:**

<table>
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<tr>
<th>Course(s)</th>
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</thead>
<tbody>
<tr>
<td>COMP 4601 [0.5] Intelligent Web-based Information Systems</td>
</tr>
<tr>
<td>COMP 4602 [0.5] Social Networking</td>
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**D. 1.5 credits from:**

<table>
<thead>
<tr>
<th>Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 4905 and 1.0 credit in COMP at the 4000-level, or</td>
</tr>
<tr>
<td>COMP 4906 and 0.5 credit in COMP at the 4000-level</td>
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**B. Credits Not Included in the Major CGPA (10.5 credits)**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>STAT 2507 [0.5] Introduction to Statistical Modeling I</td>
</tr>
<tr>
<td></td>
<td>COMP 4907 [0.5] Honours Project</td>
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<tr>
<td></td>
<td>COMP 4908 [1.0] Honours Thesis</td>
</tr>
</tbody>
</table>

**Total Credits**

| Credits | 20.0 |

### Computer Science

#### Computer Game Development Stream

**B.C.S. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (10.0 credits)**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5</td>
<td>COMP 1405 [0.5] Introduction to Computer Science I</td>
</tr>
<tr>
<td></td>
<td>COMP 1406 [0.5] Introduction to Computer Science II</td>
</tr>
<tr>
<td></td>
<td>COMP 1805 [0.5] Discrete Structures I</td>
</tr>
<tr>
<td></td>
<td>COMP 2401 [0.5] Introduction to Systems Programming</td>
</tr>
<tr>
<td></td>
<td>COMP 2402 [0.5] Abstract Data Types and Algorithms</td>
</tr>
<tr>
<td></td>
<td>COMP 2404 [0.5] Introduction to Software Engineering</td>
</tr>
<tr>
<td></td>
<td>COMP 2406 [0.5] Fundamentals of Web Applications</td>
</tr>
<tr>
<td></td>
<td>COMP 2804 [0.5] Discrete Structures II</td>
</tr>
<tr>
<td></td>
<td>COMP 3000 [0.5] Operating Systems</td>
</tr>
<tr>
<td></td>
<td>COMP 3004 [0.5] Object-Oriented Software Engineering</td>
</tr>
<tr>
<td></td>
<td>COMP 3005 [0.5] Database Management Systems</td>
</tr>
<tr>
<td></td>
<td>COMP 3007 [0.5] Programming Paradigms</td>
</tr>
<tr>
<td></td>
<td>COMP 3804 [0.5] Design and Analysis of Algorithms I</td>
</tr>
</tbody>
</table>

**B. 2.0 credits in:**

<table>
<thead>
<tr>
<th>Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1501 [0.5] Introduction to Computer Game Design</td>
</tr>
<tr>
<td>COMP 2501 [0.5] Computer Game Design and Development</td>
</tr>
<tr>
<td>COMP 3501 [0.5] Foundations of Game Programming and Computer Graphics</td>
</tr>
<tr>
<td>COMP 4501 [0.5] Advanced Facilities for Real-Time Games</td>
</tr>
</tbody>
</table>

**C. 1.5 credits in:**

<table>
<thead>
<tr>
<th>Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 4905 and 1.0 credit in COMP at the 4000-level, or</td>
</tr>
<tr>
<td>COMP 4906 and 0.5 credit in COMP at the 4000-level</td>
</tr>
</tbody>
</table>

**B. Credits Not Included in the Major CGPA (10.0 credits)**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>STAT 2507 [0.5] Introduction to Statistical Modeling I</td>
</tr>
</tbody>
</table>

**Total Credits**

| Credits | 20.0 |
### B. Math. Combined Honours (20.0 credits)

#### Concentration in Computing Theory and Computer Science and Mathematics:

Students must register in one of the two concentrations below, each of which adds 5.0 credits to the Major CGPA.

#### Computer Science

**B.C.S. Major (20.0 credits)**

<table>
<thead>
<tr>
<th>Credits Included in the Major CGPA (7.5 credits)</th>
<th>6.0 credits in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1405 [0.5]</td>
<td>Introduction to Computer Science I</td>
</tr>
<tr>
<td>COMP 1406 [0.5]</td>
<td>Introduction to Computer Science II</td>
</tr>
<tr>
<td>COMP 1805 [0.5]</td>
<td>Discrete Structures I</td>
</tr>
<tr>
<td>COMP 2401 [0.5]</td>
<td>Introduction to Systems Programming</td>
</tr>
<tr>
<td>COMP 2402 [0.5]</td>
<td>Abstract Data Types and Algorithms</td>
</tr>
<tr>
<td>COMP 2404 [0.5]</td>
<td>Introduction to Software Engineering</td>
</tr>
<tr>
<td>COMP 2406 [0.5]</td>
<td>Fundamentals of Web Applications</td>
</tr>
<tr>
<td>COMP 2804 [0.5]</td>
<td>Discrete Structures II</td>
</tr>
<tr>
<td>COMP 3000 [0.5]</td>
<td>Operating Systems</td>
</tr>
<tr>
<td>COMP 3004 [0.5]</td>
<td>Object-Oriented Software Engineering</td>
</tr>
<tr>
<td>COMP 3005 [0.5]</td>
<td>Database Management Systems</td>
</tr>
<tr>
<td>COMP 3007 [0.5]</td>
<td>Programming Paradigms</td>
</tr>
</tbody>
</table>

| 1.0 credit in COMP at the 3000-level or above | 1.0 |

| 0.5 credit in COMP at the 4000-level | 0.5 |

#### Computer Science and Mathematics

**B.Math. Combined Honours**

Students must register in one of the two concentrations below, each of which adds 5.0 credits to the Major CGPA.

#### Concentration in Computing Theory and Numerical Methods

**B. Math. Combined Honours (20.0 credits)**

<table>
<thead>
<tr>
<th>Credits Included in the Major CGPA (16.0 credits)</th>
<th>4.5 credits in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1052 [0.5]</td>
<td>Calculus and Introductory Analysis I</td>
</tr>
<tr>
<td>MATH 1152 [0.5]</td>
<td>Introductory Algebra I</td>
</tr>
<tr>
<td>MATH 1800 [0.5]</td>
<td>Introduction to Mathematical Reasoning</td>
</tr>
<tr>
<td>MATH 2000 [1.0]</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
</tr>
<tr>
<td>MATH 2052 [0.5]</td>
<td>Calculus and Introductory Analysis II</td>
</tr>
<tr>
<td>MATH 2100 [1.0]</td>
<td>Algebra</td>
</tr>
<tr>
<td>MATH 2152 [0.5]</td>
<td>Introductory Algebra II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.0 credits in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1405 [0.5]</td>
</tr>
<tr>
<td>COMP 1406 [0.5]</td>
</tr>
<tr>
<td>COMP 2401 [0.5]</td>
</tr>
<tr>
<td>COMP 2402 [0.5]</td>
</tr>
<tr>
<td>COMP 2404 [0.5]</td>
</tr>
<tr>
<td>COMP 2406 [0.5]</td>
</tr>
<tr>
<td>COMP 2804 [0.5]</td>
</tr>
<tr>
<td>COMP 3000 [0.5]</td>
</tr>
<tr>
<td>COMP 3004 [0.5]</td>
</tr>
<tr>
<td>COMP 3005 [0.5]</td>
</tr>
<tr>
<td>COMP 3804 [0.5]</td>
</tr>
<tr>
<td>COMP 3805 [0.5]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>0.5 credit from:</th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 4905 [0.5]</td>
<td>Honours Project</td>
</tr>
<tr>
<td>MATH 4905 [0.5]</td>
<td>Honours Project (Honours)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.0 credits from:</th>
<th>3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2454 [0.5]</td>
<td>Ordinary Differential Equations (Honours)</td>
</tr>
<tr>
<td>STAT 2559 [0.5]</td>
<td>Basics of Statistical Modeling (Honours)</td>
</tr>
<tr>
<td>STAT 2655 [0.5]</td>
<td>Introduction to Probability with Applications (Honours)</td>
</tr>
<tr>
<td>MATH 3801 [0.5]</td>
<td>Linear Programming</td>
</tr>
<tr>
<td>MATH 3806 [0.5]</td>
<td>Numerical Analysis (Honours)</td>
</tr>
<tr>
<td>COMP 4804 [0.5]</td>
<td>Design and Analysis of Algorithms I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>0.5 credit from:</th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3001 [0.5]</td>
<td>Real Analysis I (Honours)</td>
</tr>
<tr>
<td>MATH 3002 [0.5]</td>
<td>Real Analysis II (Honours)</td>
</tr>
<tr>
<td>MATH 3003 [0.5]</td>
<td>Advanced Differential Calculus (Honours)</td>
</tr>
<tr>
<td>MATH 3057 [0.5]</td>
<td>Functions of a Complex Variable (Honours)</td>
</tr>
<tr>
<td>MATH 3008 [0.5]</td>
<td>Ordinary Differential Equations (Honours)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.0 credit from:</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 4109 [0.5]</td>
<td>Fields and Coding Theory (Honours)</td>
</tr>
<tr>
<td>MATH 4801 [0.5]</td>
<td>Topics in Combinatorics (Honours)</td>
</tr>
<tr>
<td>MATH 4802 [0.5]</td>
<td>Introduction to Mathematical Logic (Honours)</td>
</tr>
<tr>
<td>MATH 4803 [0.5]</td>
<td>Computable Functions (Honours)</td>
</tr>
<tr>
<td>MATH 4805 [0.5]</td>
<td>Theory of Automata (Honours)</td>
</tr>
<tr>
<td>MATH 4806 [0.5]</td>
<td>Numerical Linear Algebra (Honours)</td>
</tr>
<tr>
<td>MATH 4807 [0.5]</td>
<td>Game Theory (Honours)</td>
</tr>
<tr>
<td>MATH 4808 [0.5]</td>
<td>Graph Theory and Algorithms (Honours)</td>
</tr>
<tr>
<td>MATH 4811 [0.5]</td>
<td>Combinatorial Design Theory (Honours)</td>
</tr>
<tr>
<td>MATH 4816 [0.5]</td>
<td>Numerical Analysis for Differential Equations (Honours)</td>
</tr>
</tbody>
</table>

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**Total Credits**

Computer Science

20.0

Computer Science and Mathematics

20.0
B. Math. Combined Honours (20.0 credits)

Concentration in Statistics and Computing

2. 6.0 credits in:

A. Credits Included in the Major CGPA (16.5 credits)

1. 5.0 credits in:

- MATH 1052 [0.5] Calculus and Introductory Analysis I
- MATH 1152 [0.5] Introductory Algebra I
- MATH 1800 [0.5] Introduction to Mathematical Reasoning
- MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis
- MATH 2052 [0.5] Calculus and Introductory Analysis II
- MATH 2100 [1.0] Algebra
- MATH 2152 [0.5] Introductory Algebra II
- STAT 1500 [0.5] Introduction to Statistical Computing

2. 6.0 credits in:

- COMP 1405 [0.5] Introduction to Computer Science I
- COMP 1406 [0.5] Introduction to Computer Science II
- COMP 2401 [0.5] Introduction to Systems Programming
- COMP 2402 [0.5] Abstract Data Types and Algorithms
- COMP 2404 [0.5] Introduction to Software Engineering
- COMP 2406 [0.5] Fundamentals of Web Applications
- COMP 2804 [0.5] Discrete Structures II
- COMP 3000 [0.5] Operating Systems
- COMP 3004 [0.5] Object-Oriented Software Engineering
- COMP 3005 [0.5] Database Management Systems
- COMP 3804 [0.5] Design and Analysis of Algorithms I
- MATH 4821 [0.5] Quantum Computing (Honours)
- MATH 4822 [0.5] Wavelets and Digital Signal Processing (Honours)

3. 0.5 credit from:

- COMP 3805 [0.5] Discrete Structures and Applications (Honours)

4. 3.0 credits in:

- MATH 2454 [0.5] Ordinary Differential Equations (Honours)
- MATH 3806 [0.5] Numerical Analysis (Honours)
- STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
- STAT 2655 [0.5] Introduction to Probability with Applications (Honours)
- STAT 3558 [0.5] Elements of Probability Theory (Honours)
- STAT 3559 [0.5] Mathematical Statistics (Honours)

5. 0.5 credit from:

- STAT 3506 [0.5] Stochastic Processes and Applications (Honours)
- STAT 3553 [0.5] Regression Modeling (Honours)

6. 1.0 credit in STAT at the 4000 level

7. 0.5 credit in COMP at the 4000 level

8. 3.5 credits not in MATH, STAT, or COMP consisting of:

a. 1.0 credit in Natural Science electives
b. 2.5 credits from Natural Science, or Approved Arts and Social Sciences electives

Total Credits 20.0

Note:

The following courses offered by the School of Business and the Faculty of Engineering are treated as Computer Science courses in this program:

- BUSI 2400 [0.5] Foundations of Information Systems
- BUSI 4400 [0.5] IS Strategy, Management and Acquisition
- BUSI 4406 [0.5] Business Analytics
- SYSC 3303 [0.5] Real-Time Concurrent Systems
- SYSC 4005 [0.5] Discrete Simulation/Modeling
- SYSC 4507 [0.5] Computer Systems Architecture

Computer Science and Mathematics:
Concentration in Statistics and Computing
B. Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (16.5 credits)

1. 5.0 credits in:

- MATH 1052 [0.5] Calculus and Introductory Analysis I
- MATH 1152 [0.5] Introductory Algebra I
- MATH 1800 [0.5] Introduction to Mathematical Reasoning
- MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis
- MATH 2052 [0.5] Calculus and Introductory Analysis II
- MATH 2100 [1.0] Algebra
- MATH 2152 [0.5] Introductory Algebra II
- STAT 1500 [0.5] Introduction to Statistical Computing

2. 6.0 credits in:

- COMP 1405 [0.5] Introduction to Computer Science I
- COMP 1406 [0.5] Introduction to Computer Science II
- COMP 2401 [0.5] Introduction to Systems Programming
- COMP 2402 [0.5] Abstract Data Types and Algorithms
- COMP 2404 [0.5] Introduction to Software Engineering
- COMP 2406 [0.5] Fundamentals of Web Applications
- COMP 2804 [0.5] Discrete Structures II
- COMP 3000 [0.5] Operating Systems
- COMP 3004 [0.5] Object-Oriented Software Engineering
- COMP 3005 [0.5] Database Management Systems
- COMP 3804 [0.5] Design and Analysis of Algorithms I

Total Credits 20.0

Minor in Computer Science (4.0 credits)

Only students pursuing an undergraduate program requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degree with a minimum Overall CGPA of 7.0 may be admitted to the Minor in Computer Science, except for the following:

- Bioinformatics B.Sc. Honours
- Cognitive Science with Concentration in Cognition and Computation Bachelor of Cognitive Science Honours
- Computational Biochemistry B.Sc. Honours
- Computer Science B.C.S. Honours, including all streams
- Computer Systems Engineering Bachelor of Engineering
- Economics B.Econ. Honours with Concentration in Computational Analysis
- Information Resource Management B.I.T.
- Interactive Multimedia and Design B.I.T.
- Linguistics with a Concentration in Linguistic Theory (Computer Science) B.Sc. Honours
- Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science) B.Sc. Honours
Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

**Employment**

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final
academic term. Students may not finish their degree on a
co-op work term.

**Work Term Assessment and Evaluation**
To obtain a Satisfactory grade for the co-op work term
students must have:

1. A satisfactory work term evaluation by the co-op
   employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion
of each four-month work term. Reports are due on the
16th of April, August, and December and students are
notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace
supervisor. Should a student receive an unsatisfactory
rating from their co-op employer, an investigation by
the co-op program manager will be undertaken. An
unsatisfactory employer evaluation does not preclude a
student from achieving an overall satisfactory rating for the
work term.

**Graduation with the Co-op Designation**
In order to graduate with the co-op designation, students
must satisfy all requirements for their degree program
in addition to the requirements according to each co-op
program (i.e. successful completion of three or four work
terms).

Note: Participation in the co-op option will add up to one
additional year for a student to complete their degree
program.

**Voluntary Withdrawal from the Co-op Option**
Students may withdraw from the co-op option of their
degree program during a study term ONLY. Students at
work may not withdraw from the work term or the co-op
option until s/he has completed the requirements of the
work term.

Students are eligible to continue in their regular academic
program provided that they meet the academic standards
required for continuation.

**Involuntary or Required Withdrawal from the Co-op
Option**
Students may be required to withdraw from the co-op option
of their degree program for one or any of the
following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which
   the student has applied
5. Declining more than one job offer during the job search
   process
6. Continuing a job search after accepting a co-op
   position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op
   manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**
The Co-op and Career Services office administers the
regulations and procedures that are applicable to all co-
program options. All instances of a student's failure
during a work term or other issues directly related to their
participation in the co-op option will be reported to the
academic department.

Any decision made by the Co-op and Career Services
office can be appealed via the normal appeal process
within the University.

**International Students**
All International Students are required to possess a Co-
Work Permit issued by Immigration, Refugees and
Citizenship Canada before they can begin working. It is
illegal to work in Canada without the proper authorization.
Students will be provided with a letter of support to
accompany their application. Students must submit their
application for their permit before being permitted to
view and apply for jobs on the Co-op Services database.
Confirmation of a position will not be approved until a
student can confirm they have received their permit.
Students are advised to discuss the application process
and requirements with the International Student Services
Office.

**Bachelor of Computer Science Honours and
Major: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0
  credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. A major CGPA of 8.00 or higher and an overall CGPA
   of 8.00 or higher;
2. Successfully completed 3.0 required credits in
   Computer Science, including one of COMP 2402 or
   COMP 2404;
3. Registered as a full-time student in the Bachelor of
   Computer Science program (2.0 credits).

Bachelor of Computer Science Honours and Major
students must successfully complete four (4) work terms to
obtain the Co-op designation.

**Co-op Work Term Course: COMP 3999**

**Work/Study Pattern:**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
</tr>
<tr>
<td>Fall</td>
<td>S</td>
<td>Fall</td>
<td>S</td>
<td>Fall</td>
</tr>
<tr>
<td>Winter</td>
<td>S</td>
<td>Winter</td>
<td>S</td>
<td>Winter</td>
</tr>
<tr>
<td>Summer**O*</td>
<td>SummerW</td>
<td>SummerW</td>
<td>SummerW</td>
<td>SummerW</td>
</tr>
</tbody>
</table>

**Legend**
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

**Admissions Information**
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degree**
- B.C.S. (Major)
- B.C.S. (Honours)

**Admission Requirements**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent, including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and Calculus and Vectors.

**Advanced Standing**
Applications for admission beyond first year will be assessed on their individual merits. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected. Students will not receive credit for courses graded below C-.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Computer Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Computer Science (COMP) Courses**

**Notes:**
1. Some of the following Computer Science courses are cross-listed from other parts of the Calendar. In every such case, only one course is actually offered and the two numbers are alternate identifiers for this single course. Students in the B.C.S. program should register in such a course under the Computer Science (COMP) number.

**COMP 0999 [0.0 credit]**
COMP Matters

**COMP 1001 [0.5 credit]**
Introduction to Computational Thinking for Arts and Social Science Students
An introduction to computational thinking and its applications to the arts and social sciences. Students will gain computational thinking skills by exploring data representation, basic programming concepts, a selection of algorithms, and advanced usage of software packages for the arts and social sciences.
Precludes additional credit for COMP 1004 (no longer offered). This course cannot be taken for credit by students in Business, Engineering, Computer Science, Mathematics or Science.
Lectures three hours a week.

**COMP 1006 [0.5 credit]**
Introduction to Computer Science II
A second course in programming emphasizing problem solving and computational thinking. Topics include pseudocode, variables, conditionals, iteration, arrays, objects, functions, sorting, searching, and simulation.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2400, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.
Lectures three hours a week, tutorial one a half hours a week.

**COMP 1005 [0.5 credit]**
Introduction to Computer Science I
A first course in programming, emphasizing problem solving and computational thinking. Topics include pseudocode, variables, conditionals, iteration, arrays, objects, functions, sorting, searching, and simulation.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1400, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.
Lectures three hours a week, tutorial one and a half hours a week.

**COMP 1002 [0.5 credit]**
Introduction to Computer Science III
A second course in programming emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2400, BUSI 2402, COMP 1406, ITEC 2400, ITEC 2401, SYSC 2004.
Prerequisite(s): COMP 1005 or COMP 1405.
Lectures three hours a week, tutorial one and a half hours a week.
**COMP 1008 [0.5 credit] Math for Game Programmers**
Prerequisite(s): one Grade 12 university preparation mathematics course.
Lectures three hours a week, tutorial one and a half hours a week.

**COMP 1405 [0.5 credit] Introduction to Computer Science I**
A first course in programming for B.C.S. students emphasizing problem solving and computational thinking. Topics include pseudocode, variables, conditionals, iteration, arrays, objects, functions, sorting, searching, and simulation.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1400, COMP 1005, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.
Prerequisite(s): restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.
Lectures three hours a week, tutorial one and a half hours a week.

**COMP 1406 [0.5 credit] Introduction to Computer Science II**
A second course in programming for BCS students, emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.
Precludes additional credit for BIT 2400, BUSI 2402, COMP 1006, ITEC 2400, ITEC 2401, SYSC 2004.
Prerequisite(s): COMP 1005 or COMP 1405. Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.
Lectures three hours a week, tutorial one and a half hours a week.

**COMP 1501 [0.5 credit] Introduction to Computer Game Design**
Introduction to computer game programming interfaces. Topics may include: game balance and level design; storytelling and narrative; basic game architecture; sprite-based games and isometric games; representation of scenes; user interaction; architecture of game consoles; development tools for game consoles; interaction with game peripherals.
Prerequisite(s): COMP 1005 or COMP 1405.
Lectures three hours a week, tutorial one and a half hours a week.

**COMP 1601 [0.5 credit] Introduction to Mobile Application Development**
Introduction to developing mobile applications using the Mac OS X platform. Topics include: the Objective-C programming language; development tools; framework APIs; and the Quartz graphic system. Extensive practical experience with development for Apple mobile devices such as the iPhone.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1005 or COMP 1405.
Lecture/lab four hours a week.

**COMP 1805 [0.5 credit] Discrete Structures I**
Introduction to discrete mathematics and discrete structures. Topics include: propositional logic, predicate calculus, set theory, complexity of algorithms, mathematical reasoning and proof techniques, recurrences, induction, finite automata and graph theory. Material is illustrated through examples from computing.
Includes: Experiential Learning Activity
Precludes additional credit for MATH 1800.
Prerequisite(s): one Grade 12 university preparation mathematics course.
Lectures three hours a week, tutorial one hour a week.

**COMP 1910 [0.5 credit] Internship**
The internship exposes students to industrial software development via placement in a local enterprise. This course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): Permission of the School and registration in internship option.

**COMP 1911 [0.5 credit] Internship**
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1910 and registration in internship option.

**COMP 2401 [0.5 credit] Introduction to Systems Programming**
Introduction to system-level programming with fundamental OS concepts, procedures, primitive data types, user-defined types. Topics may include process management, memory management, process coordination and synchronization, inter-process communication, file systems, networking, pointers, heap and stack memory management, and system/library calls.
Precludes additional credit for SYSC 2006.
Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.
Lectures three hours a week, tutorial one and a half hours a week.
COMP 2402 [0.5 credit]
Abstract Data Types and Algorithms
Introduction to the design and implementation of abstract data types and to complexity analysis of data structures. Topics include: stacks, queues, lists, trees and graphs. Special attention is given to abstraction, interface specification and hierarchical design using an object-oriented programming language. Precludes additional credit for SYSC 2100. Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.
Lectures three hours a week.

COMP 2404 [0.5 credit]
Introduction to Software Engineering
Introduction to object-oriented software development, with emphasis on the design and implementation of maintainable, reusable software. Topics include abstraction, modularity, encapsulation, and an introduction to design patterns. Includes: Experiential Learning Activity Precludes additional credit for SYSC 3010, SYSC 3110. Prerequisite(s): COMP 2401 with a minimum grade of C-.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 2406 [0.5 credit]
Fundamentals of Web Applications
Introduction to Internet application development; emphasis on computer science fundamentals of technologies underlying web applications. Topics include: scripting and functional languages, language-based virtual machines, database query languages, remote procedure calls over the Internet, and performance and security concerns in modern distributed applications. Includes: Experiential Learning Activity Precludes additional credit for SYSC 4504. Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.
Lectures three hours a week and tutorial one and a half hours a week.

COMP 2501 [0.5 credit]
Computer Game Design and Development
Topics may include: user interaction in multiplayer games, representation of animated scenes, tools for game character development, special effects, sound programming, game AI, motion planning and control, collision detection and physics, digital rights management. Includes: Experiential Learning Activity Prerequisite(s): COMP 1501, COMP 2401 with a minimum grade of C- and MATH 1104.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 2601 [0.5 credit]
Mobile Applications
Development of applications for mobile environments taking advantage of gesture-based input and using location and presence services. Topics include introduction to low-level network services and mobile platforms, description of architectural patterns, principles of mobile development and interaction styles for network service usage. Includes: Experiential Learning Activity Prerequisite(s): COMP 1601. Lecture/lab four hours a week.

COMP 2801 [0.5 credit]
Introduction to Robotics
An introduction to the field of mobile robots and their applications from a computer science perspective. The course will discuss common robot programming architectures and strategies. Students will build various robot configurations and experiment with a variety of sensors using behavior-based programming. Includes: Experiential Learning Activity Precludes additional credit for COMP 1807 (no longer offered). Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.
Lab four hours a week.

COMP 2804 [0.5 credit]
Discrete Structures II
A second course in discrete mathematics and discrete structures. Topics include: counting, sequences and sums, discrete probability, basic statistics, recurrence relations, randomized algorithms. Material is illustrated through examples from computing. Prerequisite(s): COMP 1805 with a minimum grade of C-, or permission of the School of Computer Science for those in Combined Honours in Computer Science and Mathematics.
Lectures three hours a week.

COMP 2910 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S. Includes: Experiential Learning Activity Prerequisite(s): COMP 1911 and registration in internship option.

COMP 2911 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the BCS. Includes: Experiential Learning Activity Prerequisite(s): COMP 2910 and registration in internship option.
COMP 3000 [0.5 credit]
Operating Systems
Operating system implementation course stressing fundamental issues in design and how they relate to modern computer architectures. Assignments involve the modification and extension of a multitasking operating system.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 4001.
Prerequisite(s): COMP 2401 with a minimum grade of C- and (COMP 2402 or SYSC 2100).
Lectures three hours a week, tutorial one and a half hours a week.

COMP 3002 [0.5 credit]
Compiler Construction
The structure, organization and design of the phases of a compiler are considered: lexical translators, syntactical translators, scope handlers, type checkers, code generators and optimizers. Components of a compiler will be implemented.
Prerequisite(s): (COMP 2402 or SYSC 2100).
Lectures three hours a week.

COMP 3004 [0.5 credit]
Object-Oriented Software Engineering
Development of object-oriented software systems: theory and practice. Topics include: Computer ethics, software development processes, requirement specification, class and scenario modeling, state modeling, UML, design patterns, traceability. Students are to complete a team project.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3020, SYSC 3120, SYSC 4120.
Prerequisite(s): COMP 2401 with a minimum grade of C-, (COMP 2404 or SYSC 3010 or SYSC 3110) with a minimum grade of C-, and (COMP 2406 or SYSC 4504).
Lectures three hours a week.

COMP 3005 [0.5 credit]
Database Management Systems
Introduces students to concepts of database management systems, database design and file structures. Topics include: entity-relationship modeling and object oriented database design, data models (relational, network and object oriented), the relational algebra, SQL, normalization theory, physical data organization, object oriented databases and OQL.
Precludes additional credit for BUSI 3400.
Prerequisite(s): COMP 1805 with a minimum grade of C-, and either COMP 2402 or (SYSC 2004 and SYSC 2100).
Lectures three hours a week.

COMP 3007 [0.5 credit]
Programming Paradigms
An introduction to alternative programming paradigms such as functional, constraint-based, concurrent, and logic programming.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3101.
Prerequisite(s): COMP 1805 with a minimum grade of C- and either COMP 2402 or (SYSC 2004 and SYSC 2100).
Lectures three hours a week.

COMP 3008 [0.5 credit]
Human-Computer Interaction
Fundamentals of the underlying theories, design principles, development and evaluation practices of human-computer interaction (HCI). Topics may include: theories of interaction, user interface frameworks, desktop, web, mobile, and immersive applications, usability inspection and testing methods, and qualitative and quantitative approaches to HCI research.
Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504).
Lectures three hours a week.

COMP 3009 [0.5 credit]
Computer Graphics
An overview of computer graphics covering rendering, modeling, and animation. Topics include geometric primitives and modeling; image formation algorithms such as ray tracing and the Z-buffer; lighting, shading, and texture; and introduction to physics-based animation and character animation.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 2401 with a minimum grade of C-, (COMP 2402 or SYSC 2100), MATH 1007, and MATH 1104.
Lectures/lab four hours a week.

COMP 3106 [0.5 credit]
Introduction to Artificial Intelligence
Includes: Experiential Learning Activity
Precludes additional credit for COMP 4106 (no longer offered).
Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2804.
Lectures three hours a week.
COMP 3109 [0.5 credit]
Applied Cryptography and Authentication
Practical aspects of cryptography. Pseudo random number generation, symmetric cryptography (stream and block ciphers), modes of operation, hash functions, message and entity authentication protocols, zero knowledge, pitfalls deploying public-key encryption and digital signatures, key distribution, secret-sharing. Precludes additional credit for COMP 4109 (no longer offered).
Prerequisite(s): (COMP 2402 or SYSC 2100) and COMP 2804.
Lectures three hours a week.

COMP 3203 [0.5 credit]
Principles of Computer Networks
This is an introductory course to the field of Network Computing. Topics include: Protocol Architectures and Internetworking, Types of Networks, Communication Protocols, End-System and Network Traffic Management, Structure of Routing and Congestion Control. Includes: Experiential Learning Activity. Precludes additional credit for SYSC 4602. Prerequisite(s): COMP 2401 with a minimum grade of C-, (COMP 2402 or SYSC 2100).
Lectures three hours a week.

COMP 3301 [0.5 credit]
Technical Writing for Computer Science
Technical communication for computer science majors, concentrating on writing scientific papers and technical reports. Principles of clarity and precision in writing and communication. Practical exercises and readings from recent technical publications will be used. Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110).
Lectures three hours a week.

COMP 3308 [0.5 credit]
Bioinformatics
This practical interdisciplinary course will provide a broad overview of bioinformatics in which computer science and mathematics are applied to solve problems in molecular biology. Topics include gene prediction, sequence alignment, phylogeny, molecular interactions, macromolecular structure prediction and biological databases. Includes: Experiential Learning Activity. Also listed as BIOL 3008. Prerequisite(s): BIOL 2200 or BIOL 2200, or permission of the Biochemistry Institute. Lecture two hours a week, computer workshop three hours a week.

COMP 3400 [0.5 credit]
Computational Logic and Automated Reasoning
Applications of formal logic in computer science. Symbolic logics such as classical predicate calculus are used to represent domain knowledge, to model computational problems and to solve them by means of automated reasoners. Applications include artificial intelligence, software engineering, data management and hardware verification. Prerequisite(s): COMP 2804.
Lectures three hours a week.

COMP 3501 [0.5 credit]
Foundations of Game Programming and Computer Graphics
Mathematical concepts of 3D engines. Topics may include: illumination and visibility determinations; quaternions; homogeneous coordinates; transforms; ray tracing; bump mapping; portal systems; polygonal techniques; shadows; and linear and rotational physics. Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2501.
Lectures three hours a week.

COMP 3801 [0.5 credit]
Algorithms for Modern Data Sets
Algorithm design techniques for modern data sets arising in, for example, data mining, web analytics, epidemic spreads, search engines and social networks. Topics may include: data mining, hashing, streaming, clustering, recommendation systems, link analysis, dimensionality reduction, online, social networking, game theoretic and probabilistic algorithms. Prerequisite(s): COMP 2804 with a minimum grade of B+. Lecture three hours a week.

COMP 3803 [0.5 credit]
Introduction to Theory of Computation
Theoretical aspects of computer science. Topics include: formal languages and automata theory, computability theory. Precludes additional credit for COMP 2805 (no longer offered). Prerequisite(s): COMP 2804.
Lectures three hours a week.

COMP 3804 [0.5 credit]
Design and Analysis of Algorithms I
An introduction to the design and analysis of algorithms. Topics include: divide-and-conquer, dynamic programming, linear programming, greedy algorithms, graph algorithms, NP-completeness. Also listed as MATH 3804. Prerequisite(s): (COMP 2402 or SYSC 2100) and either COMP 2804 or (MATH 2007 and MATH 2108).
Lectures three hours a week.
COMP 3805 [0.5 credit]
Discrete Structures and Applications (Honours)
Enumeration: inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes. Designs and finite geometries. Symmetry and counting. Also listed as MATH 3855.
Precludes additional credit for MATH 3805 (no longer offered) and MATH 3825.
Prerequisite(s): MATH 2100 or a grade of B or higher in MATH 2108 or MATH 3101.
Lectures three hours a week and one hour tutorial.

COMP 3807 [0.5 credit]
Mathematical Software
Incorporation of basic numerical methods into efficient, reliable software. The course includes examination of existing software systems, e.g., linear systems, non-linear systems, optimization, or differential equations. Includes: Experiential Learning Activity
Also listed as MATH 3807.
Prerequisite(s): A grade of C- or higher in COMP 3806 or MATH 3806.

COMP 3910 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 2911 and registration in internship option.

COMP 3911 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 3910 and registration in internship option.

COMP 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

COMP 4000 [0.5 credit]
Distributed Operating Systems
An advanced course emphasizing the principles of distributed operating systems including networking protocols, distributed file systems, remote IPC mechanisms, graphical user interfaces, load balancing, and process migration. Case studies include current "standards" as well as novel systems under development. Includes: Experiential Learning Activity
Prerequisite(s): (COMP 3000 or SYSC 4001) and (COMP 3203 or SYSC 4602).
Lectures three hours a week.

COMP 4001 [0.5 credit]
Distributed Computing
Overview of distributed computing. Topics include: computational models, communication complexity, design and analysis of distributed algorithms and protocols, fault-tolerant protocols, synchronous computations. Applications may include: communication in data networks, control in distributed system (e.g., election, distributed mutual exclusion), manipulation of distributed data (e.g., ranking).
Prerequisite(s): COMP 1805 with a minimum grade of C-, COMP 2401 with a minimum grade of C-, and (COMP 2406 or SYSC 4504).
Lectures three hours a week.

COMP 4002 [0.5 credit]
Real-Time 3D Game Engines
The design and implementation of game engines for real-time 3D games including topics such as camera control, environmental effects, articulated models, terrain, vegetation, collision detection, particles, emitters, triggers, portals, waypoints, mirrors, and shadows.
Prerequisite(s): COMP 2404 or SYSC 3010 or SYSC 3110.
Lectures three hours a week.

COMP 4003 [0.5 credit]
Transaction Processing Systems
Concepts and architectures of transaction processing systems and on-line transaction processing, with emphasis on data integration systems. Transaction properties and models, embedded-SQL, active rules, consistency maintenance, serializability, concurrency control, recovery, data integration systems and federated databases, introduction to transactions in web services and workflow systems.
Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 3005.
Lectures three hours a week.
COMP 4004 [0.5 credit]
Software Quality Assurance
Introduction to the theory and practice of Software Quality Assurance. Topics include: equivalence partitioning, test-driven testing, unit testing patterns, refactoring, software metrics, requirements engineering, scenario modeling and acceptance testing, model-based testing, state machine testing, software testing theory and tools.
Precludes additional credit for SYSC 4101.
Prerequisite(s): COMP 3004.
Lectures three hours a week.

COMP 4009 [0.5 credit]
Programming for Clusters and Multi-Core Processors
Introduction to parallel architectures, programming languages and algorithms for processor clusters and multi-core processors. Distributed memory architectures, cluster computing, message passing parallel programming, multi-core processors, shared memory parallel programming, use of thread libraries, parallel performance analysis.
Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2804.
Lectures three hours a week.

COMP 4102 [0.5 credit]
Computer Vision
The basic ideas and techniques of computer vision. The central theme is reconstructing 3D models from 2D images. Topics include: image formation, image feature extraction, camera models, camera calibration, structure from motion, stereo, recognition, augmented reality, image searching.
Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (MATH 1104 or MATH 1107).
Lectures three hours a week.

COMP 4105 [0.5 credit]
Machine Learning
A subset of topics in Artificial Intelligence that emphasize algorithms and statistical models that rely on patterns and inference. Some topics include decision trees, dimension reduction, ensemble methods, Support Vector Machines, some of the fundamental aspects of Neural Networks, and clustering.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 3106 and (MATH 1104 or MATH 1107).
Lecture three hours a week.

COMP 4107 [0.5 credit]
Neural Networks
Theory and application of Neural Networks to problems in machine learning. Topics include explanation of the representation, transformation and compression of data, biological models, Hebbian learning and the Perceptron. Modern neural network architectures, including feed forward, recurrent, convolutional and generative adversarial are introduced.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 5206.
Prerequisite(s): COMP 3106 and (MATH 1104 or MATH 1107).
Lectures three hours a week.

COMP 4108 [0.5 credit]
Computer Systems Security
Introduction to information security in computer and communications systems, including network, operating systems, web and software security; Passwords, authentication applications, privacy, data integrity, anonymity, secure email, IP security, security infrastructures, firewalls, viruses, intrusion detection, network attacks.
Precludes additional credit for SYSC 4810.
Prerequisite(s): (COMP 3000 or SYSC 4001) and COMP 3109.
Lectures three hours a week.

COMP 4111 [0.5 credit]
Data Management for Business Intelligence
Application of computational techniques to support business activities, such as decision making, business understanding, data analysis, business process automation, learning from data, producing and using data-centric business models, ontology-based data access and integration, data quality assessment and cleaning and use of contextual data.
Prerequisite(s): COMP 3005.
Also offered at the graduate level, with different requirements, as COMP 5111, for which additional credit is precluded.
Lectures three hours a week.

COMP 4202 [0.5 credit]
Computational Aspects of Geographic Information Systems
Through recent advances in navigation systems, mobile devices, and new software such as Mapquest and Google Earth, GIS is becoming increasingly important and exciting from a CS perspective. This course lays the algorithmic foundations to understand, use and further this technology.
Prerequisite(s): COMP 3804 or MATH 3804.
Also offered at the graduate level, with different requirements, as COMP 5204, for which additional credit is precluded.
Lecture three hours a week.
COMP 4203 [0.5 credit]
Wireless Networks and Security
An introduction to wireless networks covering both networking issues and security aspects of modern wireless environments. Fundamentals of mobile LANs, ad hoc, sensor networks, secure routing, searching, clustering, multicasting, localization, mobile IP/TCP, confidentiality, key establishment, authentication, broadcasting, RFID, and rogue attacks.
Prerequisite(s): COMP 3203 or SYSC 4602.
Lectures three hours a week.

COMP 4206 [0.5 credit]
Evolving Information Networks
Convergence of social and technological networks. Interplay between information content, entities creating it and technologies supporting it. Structure and analysis of such networks, models abstracting their properties, techniques link analysis, search, mechanism design, power laws, cascading, clustering and connections with work in social sciences.
Prerequisite(s): COMP 1805, (COMP 2401 with a minimum grade of C-) and (COMP 2406 or SYSC 4504). Also offered at the graduate level, with different requirements, as COMP 5310, for which additional credit is precluded.
Lecture three hours a week.

COMP 4308 [0.5 credit]
Computational Systems Biology
Modeling and simulation of metabolic and regulatory networks towards understanding complex and highly dynamic cellular systems. Biotechnological applications include metabolic engineering, synthetic biology, and drug discovery.
Includes: Experiential Learning Activity
Also listed as BIOC 4008.
Prerequisite(s): BIOC 3101 or permission of the Biochemistry Institute.
Lecture one and a half hours per week, workshop one and a half hours per week.

COMP 4501 [0.5 credit]
Advanced Facilities for Real-Time Games
A practical course on advanced facilities of game engines. Such facilities include notions such as physics engines, shadow mapping, lighting with thousands of lights, relief mapping, ambient occlusion, water flow, deferred rendering, occlusion culling, water effects, mirrors, and screen space reflection.
Prerequisite(s): COMP 3501.
Lectures three hours a week.

COMP 4601 [0.5 credit]
Intelligent Web-based Information Systems
Introduction to the principles and practice of creation, delivery and analysis of multimedia content in web-based systems. Topics include analysis of webs of documents, social network analysis, recommender systems and problems of trust, reputation and influence in e-commerce systems.
Includes: Experiential Learning Activity
Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or COMP 2601 or SYSC 4504).
Lecture/lab four hours a week.

COMP 4602 [0.5 credit]
Social Networking
Introduction to virtual communities, overlay networks and social networking. Topics include architectural principles for heterogeneous social networking platforms, trust and reputation as social concepts, agent-based computing, and extraction of trends and patterns from information exchanged between community members.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 3601 (no longer offered).
Prerequisite(s): ((COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504)) or COMP 2601.
Lectures/labs four hours per week.

COMP 4803 [0.5 credit]
Computable Functions
Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic, NP-completeness.
Also listed as MATH 4803.
Prerequisite(s): MATH 2100 or COMP 3805 or permission of the School.

COMP 4804 [0.5 credit]
Design and Analysis of Algorithms II
A second course on the design and analysis of algorithms. Topics include: advanced recurrence relations, algebraic complexity, advanced graph algorithms, amortized analysis, algorithms for NP-complete problems, randomized algorithms.
Prerequisite(s): COMP 3804 or MATH 3804.
Lectures three hours a week.

COMP 4805 [0.5 credit]
Theory of Automata
Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems.
Also listed as MATH 4805.
Precludes additional credit for MATH 5605.
Prerequisite(s): COMP 3805 or MATH 3106 or MATH 3158 (or MATH 3100) or permission of the School.
Lectures three hours a week.
COMP 4806 [0.5 credit]
Numerical Linear Algebra
Study of matrix inversion techniques; techniques of finding eigenvalues and eigenvectors, solution of systems of linear equations; direct and indirect methods, their comparison and error analysis; applications in optimization and other areas.
Also listed as MATH 4806.
Prerequisite(s): MATH 2152 or MATH 1102 (no longer offered) or MATH 2107; and MATH 2000 and COMP 3806, or permission of the School.
Lectures three hours a week.

COMP 4900 [0.5 credit]
Advanced Topics in Computer Science
Selected topics in Computer Science offered by members of the School of Computer Science.
Prerequisite(s): permission of the School of Computer Science.
Lectures three hours a week and up to three hours of tutorials a week.

COMP 4901 [0.5 credit]
Directed Studies
Independent study under the supervision of a member of the School of Computer Science, open only to students in the B.C.S. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to two such courses in their program.
Prerequisite(s): permission of the School of Computer Science.

COMP 4905 [0.5 credit]
Honours Project
Under the supervision of a faculty member, Honours students complete a major Computer Science project in fourth year. Permission to register is granted once an approved project proposal is submitted to the Department. See deadlines and details on the School web site.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 4906.
Prerequisite(s): registration in the B.C.S. Honours program or one of the Combined Computer Science Honours programs and permission of the School of Computer Science.

COMP 4906 [1.0 credit]
Honours Thesis
An independent research project under the direct supervision of a faculty advisor. Permission to register is granted once an approved project proposal is submitted to the School of Computer Science. Evaluation is based on a written thesis and a poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 4905.
Prerequisite(s): fourth-year standing in a B.C.S. Honours program with a minimum CGPA of 9.0 in the major and permission of the School of Computer Science.

COMP 4910 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 3911 and registration in internship option.

COMP 4911 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 4910 and registration in internship option.

Criminology and Criminal Justice
This section presents the requirements for programs in:
• CCJ with Concentration in Law B.A. Honours
• CCJ with Concentration in Psychology B.A. Honours
• CCJ with Concentration in Sociology B.A. Honours
• CCJ with Concentration in Law B.A.
• CCJ with Concentration in Psychology B.A.
• CCJ with Concentration in Sociology B.A.
• Minor in Criminology & Criminal Justice

Program Requirements
Criminology and Criminal Justice
B.A. Honours
Students in the B.A. Honours program choose to follow one of the three following concentrations. The selection must take place before second year status is achieved.

CCJ with Concentration in Law
B.A. Honours (20.0 credits)
A. Credits Included in the Major CGPA (13.5 credits)

1. 1.5 credit in:
   - CRCJ 1000 [0.5] Introduction to Criminology and Criminal Justice
   - CRCJ 2100 [0.5] Criminological Theories
   - CRCJ 2200 [0.5] Contemporary Issues in Criminology & Criminal Justice

2. 2.5 credits in:
   - LAWS 1001 [0.5] Introduction to Legal Studies 1
   - LAWS 1002 [0.5] Introduction to Legal Studies 2
   - LAWS 2301 [0.5] Criminal Justice System
   - LAWS 2302 [0.5] Criminal Law
   - LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1

3. 0.5 credit in LAWS at the 2000-level or higher
4. 1.5 credits in LAWS at the 3000-level or higher
5. 2.0 credits in:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 1001 [0.5]</td>
<td>Introduction to Psychology I</td>
</tr>
<tr>
<td>PSYC 1002 [0.5]</td>
<td>Introduction to Psychology II</td>
</tr>
<tr>
<td>PSYC 2400 [0.5]</td>
<td>Introduction to Forensic Psychology</td>
</tr>
<tr>
<td>PSYC 3402 [0.5]</td>
<td>Criminal Behaviour</td>
</tr>
<tr>
<td>SOCI 1001 [0.5]</td>
<td>Introduction to Sociology I</td>
</tr>
<tr>
<td>SOCI 1002 [0.5]</td>
<td>Introduction to Sociology II</td>
</tr>
<tr>
<td>SOCI 1003 [1.0]</td>
<td>Introduction to Sociological Perspectives</td>
</tr>
<tr>
<td>CRCJ 2000 [0.5]</td>
<td>Contemporary Issues in Criminology</td>
</tr>
<tr>
<td>CRCJ 2100 [0.5]</td>
<td>Qualitative Methods in Criminology</td>
</tr>
<tr>
<td>CRCJ 2200 [0.5]</td>
<td>Criminal Behaviour</td>
</tr>
</tbody>
</table>

### Notes for all Concentrations:

1. See note entitled **Maximum Number of CCJ Credits** in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

### CCJ with Concentration in Psychology

#### B.A. Honours (20.0 credits)

**A. Credits Included in the Major CGPA (12.5 credits)**

1. **1.5 credits in:**
   - CRCJ 1000 [0.5] Introduction to Criminology and Criminal Justice
   - CRCJ 2100 [0.5] Criminological Theories
   - CRCJ 2200 [0.5] Contemporary Issues in Criminology & Criminal Justice

2. **2.0 credits in:**
   - LAWS 1001 [0.5] Introduction to Legal Studies 1
   - LAWS 1002 [0.5] Introduction to Legal Studies 2
   - LAWS 2301 [0.5] Criminal Justice System
   - LAWS 2302 [0.5] Criminal Law

3. **2.0 credits in:**
   - PSYC 1001 [0.5] Introduction to Psychology I
   - PSYC 1002 [0.5] Introduction to Psychology II
   - PSYC 2400 [0.5] Introduction to Forensic Psychology
   - PSYC 3402 [0.5] Criminal Behaviour

4. **1.0 credit from:**
   - PSYC 2001 [0.5] Introduction to Research Methods in Psychology
   - PSYC 2002 [0.5] Introduction to Statistics in Psychology

5. **0.5 credit in PSYC at the 2000-level or higher**

6. **0.5 credit in PSYC at the 3000-level or higher**

7. **1.0 credit from:**

**B. Credits Not Included in the Major CGPA (7.5 credits)**

12. **5.0 credits in electives, not in Approved CCJ Electives**

13. **2.5 credits in free electives**

**Total Credits** 20.0

### Notes for all Concentrations:

1. See note entitled **Maximum Number of CCJ Credits** in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.
**CCJ with Concentration in Law**

**B.A. (15.0 credits)**

<table>
<thead>
<tr>
<th>1.</th>
<th>1.5 credit in:</th>
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<tbody>
<tr>
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<tr>
<td>CRCJ 2100 [0.5]</td>
<td>Criminological Theories</td>
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<td>CRCJ 2200 [0.5]</td>
<td>Contemporary Issues in Criminology &amp; Criminal Justice</td>
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<tbody>
<tr>
<td>LAWS 1001 [0.5]</td>
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</tr>
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<td>LAWS 1002 [0.5]</td>
<td>Introduction to Legal Studies 2</td>
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<tr>
<td>LAWS 2301 [0.5]</td>
<td>Criminal Justice System</td>
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</tr>
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<td>LAWS 2302 [0.5]</td>
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<tr>
<td>LAWS 2908 [0.5]</td>
<td>Methodological Approaches in Legal Studies 1</td>
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| 3.  | 1.0 credits in LAWS at the 2000-level or higher | 1.0 |

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<thead>
<tr>
<th>4.</th>
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<tbody>
<tr>
<td>PSYC 1001 [0.5]</td>
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<td>PSYC 1002 [0.5]</td>
<td>Introduction to Psychology II</td>
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</tr>
<tr>
<td>PSYC 2400 [0.5]</td>
<td>Introduction to Forensic Psychology</td>
<td></td>
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<td>PSYC 3402 [0.5]</td>
<td>Criminal Behaviour</td>
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<td>SOCI 1002 [0.5]</td>
<td>Introduction to Sociology II</td>
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</tr>
<tr>
<td>SOCI 1003 [1.0]</td>
<td>Introduction to Sociological Perspectives</td>
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</tr>
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</table>

<table>
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<th>6.</th>
<th>1.0 credit in:</th>
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<tbody>
<tr>
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<td>Crime and Society</td>
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<tr>
<td>SOCI 3410 [0.5]</td>
<td>Studies in Criminal Justice</td>
<td></td>
</tr>
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</table>

| 7.  | 1.5 credit in CRCJ or approved CCJ Electives at the 3000-level | 1.5 |

| 8.  | 2.5 credits in electives, not in Approved CCJ electives | 2.5 |

Total Credits: 15.0

**Notes for all Concentrations:**

1. See note entitled Maximum Number of CCJ Credits in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

**CCJ with Concentration in Psychology**

**B.A. (15.0 credits)**

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<tr>
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<tbody>
<tr>
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<td>CRCJ 2100 [0.5]</td>
<td>Criminological Theories</td>
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<tr>
<td>CRCJ 2200 [0.5]</td>
<td>Contemporary Issues in Criminology &amp; Criminal Justice</td>
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<td>LAWS 1002 [0.5]</td>
<td>Introduction to Legal Studies 2</td>
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<tr>
<td>LAWS 2301 [0.5]</td>
<td>Criminal Justice System</td>
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<tbody>
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<tr>
<td>PSYC 1002 [0.5]</td>
<td>Introduction to Psychology II</td>
<td></td>
</tr>
<tr>
<td>PSYC 2400 [0.5]</td>
<td>Introduction to Forensic Psychology</td>
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</tr>
<tr>
<td>PSYC 3402 [0.5]</td>
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<tr>
<th>D.</th>
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<td>Introduction to Research Methods in Psychology</td>
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<tr>
<td>PSYC 2002 [0.5]</td>
<td>Introduction to Statistics in Psychology</td>
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| E.  | 1.0 credits in PSYC at the 2000-level or higher | 1.0 |

<table>
<thead>
<tr>
<th>F.</th>
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<th>1.0</th>
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<tbody>
<tr>
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<td>Introduction to Sociology I</td>
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<tr>
<td>SOCI 1002 [0.5]</td>
<td>Introduction to Sociology II</td>
<td></td>
</tr>
<tr>
<td>SOCI 1003 [1.0]</td>
<td>Introduction to Sociological Perspectives</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G.</th>
<th>1.0 credit in:</th>
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</thead>
<tbody>
<tr>
<td>SOCI 2450 [0.5]</td>
<td>Crime and Society</td>
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</tr>
<tr>
<td>SOCI 3410 [0.5]</td>
<td>Studies in Criminal Justice</td>
<td></td>
</tr>
</tbody>
</table>

| H.  | 1.5 credit in CRCJ or CCJ Approved Electives at the 3000-level | 1.5 |

| I.  | 2.5 credits in electives, not in Approved CCJ electives | 2.5 |

Total Credits: 15.0

**Notes for all Concentrations:**

1. See note entitled Maximum Number of CCJ Credits in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

**CCJ with Concentration in Sociology**

**B.A. (15.0 credits)**

<table>
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<th>A.</th>
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<tbody>
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<td>CRCJ 1000 [0.5]</td>
<td>Introduction to Criminology and Criminal Justice</td>
<td>1.5</td>
</tr>
<tr>
<td>CRCJ 2100 [0.5]</td>
<td>Criminological Theories</td>
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<tr>
<td>CRCJ 2200 [0.5]</td>
<td>Contemporary Issues in Criminology &amp; Criminal Justice</td>
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<td>Criminal Justice System</td>
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<tr>
<td>LAWS 2302 [0.5]</td>
<td>Criminal Law</td>
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| C.  | 2.5 credits in electives, not in Approved CCJ electives | 2.5 |

Total Credits: 15.0
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CRCJ 1000</td>
<td>Introduction to Criminology and Criminal Justice</td>
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<tr>
<td>CRCJ 2100</td>
<td>Criminological Theories</td>
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<td>Contemporary Issues in Criminology &amp; Criminal Justice</td>
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2. **2.0 credits in:**

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>LAWS 1001</td>
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3. **2.0 credits in:**

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<th>Course Code</th>
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<tr>
<td>PSYC 1001</td>
<td>Introduction to Psychology I</td>
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<td>PSYC 1002</td>
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<td>PSYC 2400</td>
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<td>PSYC 3402</td>
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4. **1.0 credit from:**

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>SOCI 1001</td>
<td>Introduction to Sociology I</td>
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<td>SOCI 1003</td>
<td>Introduction to Sociological Perspectives</td>
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5. **2.0 credits in:**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
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<td>Foundations of Sociological Inquiry</td>
</tr>
<tr>
<td>SOCI 2001</td>
<td>Introduction to Qualitative Research Methods</td>
</tr>
<tr>
<td>SOCI 2450</td>
<td>Crime and Society</td>
</tr>
<tr>
<td>SOCI 3410</td>
<td>Studies in Criminal Justice</td>
</tr>
</tbody>
</table>

6. **0.5 credit in SOCI at the 2000-level or higher**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>SOCI 2000</td>
<td>Foundations of Sociological Inquiry</td>
</tr>
</tbody>
</table>

7. **1.5 credit in CRCJ or Approved CCJ Electives at the 3000-level or higher**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRCJ 2100</td>
<td>Criminological Theories</td>
</tr>
<tr>
<td>CRCJ 2200</td>
<td>Contemporary Issues in Criminology &amp; Criminal Justice</td>
</tr>
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8. **2.5 credits in electives, not in Approved CCJ Electives**

<table>
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<th>Course Title</th>
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<td>PSYC 3000</td>
<td>Foundations of Psychology</td>
</tr>
<tr>
<td>LAWS 1001</td>
<td>Introduction to Legal Studies 1</td>
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9. **2.0 credits in free electives**

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>CRCJ 2100</td>
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</tr>
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<td>CRCJ 2200</td>
<td>Contemporary Issues in Criminology &amp; Criminal Justice</td>
</tr>
</tbody>
</table>

**Notes for all concentrations:**

1. See note entitled Maximum Number of CCJ Credits in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

**Minor in Criminology & Criminal Justice (4.0 credits)**

This minor is open to all undergraduate degree students in programs other than Criminology and Criminal Justice.

**Requirements:**

1. **1.5 credits in:**

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>CRCJ 1000</td>
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2. **1.0 credit in:**

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<tbody>
<tr>
<td>LAWS 1001</td>
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3. **0.5 credit from:**

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<td>CRCJ 2200</td>
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4. **1.0 credits in CRCJ at the 3000-level or higher**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>LAWS 2301</td>
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<td>LAWS 2302</td>
<td>Criminal Law</td>
</tr>
<tr>
<td>SOCI 2445</td>
<td>Sociology of Deviance</td>
</tr>
<tr>
<td>SOCI 2450</td>
<td>Crime and Society</td>
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5. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits**

<table>
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<tr>
<td>LAWS 2301</td>
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<tr>
<td>SOCI 2450</td>
<td>Crime and Society</td>
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**Course Categories for Criminology and Criminal Justice**

**APPROVED CCJ ELECTIVES**

**Criminology**

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<th>Course Title</th>
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<td>Policing (in)Security</td>
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<td>CRCJ 3200</td>
<td>Indigeneity, Coloniality, and Crime</td>
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<tr>
<td>CRCJ 3201</td>
<td>Selected Criminological Topics</td>
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<tr>
<td>CRCJ 3202</td>
<td>Selected Criminological Topics</td>
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<td>CRCJ 3902</td>
<td>Practicum in Criminal Justice II</td>
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<td>CRCJ 4001</td>
<td>Special Topics in Criminology</td>
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<td>CRCJ 4002</td>
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<td>Psychology of the Jury</td>
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<td>Policing Sex</td>
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<td>CRCJ 4300</td>
<td>Social Control</td>
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<td>CRCJ 4400</td>
<td>Crime, Emotions, and The Senses</td>
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<td>CRCJ 4500</td>
<td>Art of (in)Justice</td>
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<td>Sociologies of Punishment</td>
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**Law**

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<td>Mediation</td>
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<tr>
<td>LAWS 3209</td>
<td>Canadian Correctional Policies in Historical Perspective</td>
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<tr>
<td>LAWS 3305</td>
<td>Crime and State in History</td>
</tr>
<tr>
<td>LAWS 3306</td>
<td>Crime, Law, Process and Politics</td>
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<tr>
<td>LAWS 3307</td>
<td>Youth and Criminal Law</td>
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<tr>
<td>LAWS 3308</td>
<td>Punishment and the Law</td>
</tr>
<tr>
<td>LAWS 4302</td>
<td>Regulation of Corporate Crime</td>
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<tr>
<td>LAWS 4303</td>
<td>Drugs, The User and The State</td>
</tr>
<tr>
<td>LAWS 4304</td>
<td>Policing and Social Surveillance</td>
</tr>
<tr>
<td>LAWS 4305</td>
<td>Criminal Justice Reform</td>
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<td>LAWS 4306</td>
<td>Criminal Law Issues</td>
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<td>LAWS 4307</td>
<td>Medical Criminal Law Issues</td>
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<tr>
<td>LAWS 4308</td>
<td>Sentencing</td>
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<td>LAWS 4309</td>
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<tr>
<td>LAWS 4701</td>
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**Psychology**

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<td>PSYC 3405</td>
<td>Psychology of Motivation and Emotion</td>
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**Sociology**

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<td>SOCI 3420</td>
<td>Studies in Gender and Criminal Justice</td>
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<td>Studies in Law Enforcement</td>
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<td>Advanced Studies in Criminology</td>
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<td>SOCI 4702</td>
<td>Special Topic in Criminal Justice and Social Policy</td>
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**Notes**

- The total number of Criminology and Criminal Justice courses in the B.A. and B.A. (Honours) program may not exceed 12.5 (B.A.) and 15.0 (B.A. Honours). Consult the Institute if clarification is required.
- Students may request permission to offer courses towards the Major which are not listed as electives, including those offered by the Criminal Justice and Social Policy Summer School, as well as special topics courses offered from time to time by the Institute or Departments of Law, Psychology and Sociology. Students should consult the Institute for a listing of courses approved as alternative electives.

**Regulations**

In addition to the program requirements described here, students must satisfy:

1. the University regulations (see the Academic Regulations of the University section of this Calendar),
2. the common regulations applying to all B.A. students. The B.A. Breadth requirement is waived for students in Criminology and Criminal Justice.

Students should consult with the Institute when selecting courses and planning their program.

**Maximum Number of CCJ Credits**

The total number of Criminology and Criminal Justice credits in the B.A. and B.A. (Honours) program may not exceed 12.5 (B.A.) and 15.0 (B.A. Honours). This is the sum of credits used in the Major and Concentration PLUS free electives chosen from the list of Approved CCJ electives. Consult the Institute if clarification is required.

**Field Placement Practicum**

The Field Placement Practicum (CRCJ 3901 [1.0] Practicum in Criminology I) is offered at the 3000-level to students in CCJ programs. Students complete a 1.0 (or 2.0) credit Field Placement Practicum course during the fall/winter session. To be eligible for the Practicum students must have completed at least 9.0 credits by May 1, including all of the 1000- and 2000-level requirements in the Major CGPA. Enrollment is restricted. A floating cutoff will be used to identify the students with the highest Major CGPA over those required courses, who may then receive permission to register for the Field Placement. Allocation of Field Placements will be determined by the Field Placement Coordinator.

Students wishing to register for a Field Placement Practicum must apply to the Institute no later than May 1 of their second year. Applications are available at carleton.ca/criminology by January 1. If granted permission, students will then register in CRCJ 3901 [1.0] Practicum in Criminology I during registration. Students in the B.A. Honours program may receive permission to complete a 2.0 credit placement, in which case they will also register in CRCJ 3902 [1.0] Practicum in Criminology II.

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration or Specialization may be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes**: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESIA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN
Students may transfer to a program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Admission Requirements

Degrees
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)
First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

B.A. Honours Criminology and Criminal Justice
Admission to Criminology and Criminal Justice (CCJ) with advanced standing and transfer within the B.A. to CCJ by change of major is limited. Students require a minimum overall CGPA of 7.50 and will be admitted to the Honours program. Access to the CCJ B.A. degree is limited to CCJ B.A. Honours registered students who apply to transfer and to graduates of the Algonquin College Police Foundations program.

Criminology and Criminal Justice (CRCJ) Courses

CRCJ 1000 [0.5 credit]
Introduction to Criminology and Criminal Justice
Overview of the field, including the foundational approaches of criminology and criminal justice, crime as an object of study; criminal law and criminality in Canada; (neo) classical, aetiological and social reaction perspectives; alternative criminologies. Lectures/tutorials three hours a week.

CRCJ 2100 [0.5 credit]
Criminological Theories
Comprehensive survey of the plurality of criminological theories, from phrenology to contemporary theories concerned with issues related to crime and punishment. Students are encouraged to develop critical and reflexive thinking on various criminological issues and theories. Prerequisite(s): CRCJ 1000 and second-year standing. Lectures three hours per week.

CRCJ 2200 [0.5 credit]
Contemporary Issues in Criminology & Criminal Justice
Survey of contemporary criminological and criminal justice issues, ranging from criminalization, crime prevention, and surveillance strategies to debates about the criminal justice system, punishment, and reintegration. Specific topics will vary from year to year. Prerequisite(s): CRCJ 1000 and second-year standing. Lecture three hours per week.

CRCJ 3001 [0.5 credit]
Quantitative Methods in Criminology
Methods used conducting quantitative research. Topics include measuring and manipulating variables, reliability, validity, sampling, experimental, quasi-experimental designs and ethics. Prerequisite(s): CRCJ 1000 and third-year standing in the B.A Honours program in Criminology and Criminal Justice. Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3002 [0.5 credit]
Qualitative Methods in Criminology
Methods used conducting qualitative research. Topics include field research, interviewing, ethnographic research, content analysis and ethics. Includes: Experiential Learning Activity Prerequisite(s): CRCJ 1000 and third-year standing in the B.A Honours program in Criminology and Criminal Justice. Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3100 [0.5 credit]
Policing (in)Security
Theories and case studies addressing contemporary efforts to police the world of (in)securities. Emphasis on Canadian dynamics within these broader transformations. Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Lecture and discussion three hours per week.

CRCJ 3200 [0.5 credit]
Indigeneity, Coloniality, and Crime
This course explores issues related to Indigenous peoples, the criminal justice system and community with an emphasis on Indigenous scholarship and perspectives on criminology and crime. Prerequisite(s): CRCJ 1000, INDG 1010, or INDG 1011, third year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Lecture and discussion three hours per week.
CRCJ 3201 [0.5 credit]
Selected Criminological Topics
The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Lectures three hours per week.

CRCJ 3202 [0.5 credit]
Selected Criminological Topics
The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Lectures three hours per week.

CRCJ 3901 [1.0 credit]
Practicum in Criminology I
Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. In the seminar class, discussions, presentations and assignments integrate applied, theoretical and empirical knowledge. CRCJ 3901 may not be repeated.
Includes: Experiential Learning Activity
Prerequisite(s): Third-year standing in a B.A. in Criminology and Criminal Justice, including all of the 1000- and 2000-level requirements in the Major CGPA, and permission of the Institute.
Field placement eight hours a week, seminar three hours a week.

CRCJ 3902 [1.0 credit]
Practicum in Criminology II
Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. In the seminar class, discussions, presentations and assignments integrate applied, theoretical and empirical knowledge. CRCJ 3902 may not be repeated.
Includes: Experiential Learning Activity
Prerequisite(s): Third-year Honours standing in Criminology and Criminal Justice, including all of the 1000- and 2000-level requirements in the Major CGPA, and permission of the Institute.
Field placement eight hours a week, seminar three hours a week.

CRCJ 4001 [0.5 credit]
Special Topics in Criminology
Examination of a special topic in criminology. Topics to be announced in advance of registration each year.
Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Seminar three hours per week.

CRCJ 4002 [0.5 credit]
Special Topics in Criminology
Examination of a special topic in criminology. Topics to be announced in advance of registration each year.
Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Seminar three hours per week.

CRCJ 4100 [0.5 credit]
Psychology of the Jury
This course will explore the jury system in Canada and other countries. Jury selection, deliberation, and instructions will be discussed, in addition to a number of legal and extra-legal influences on jury decision-making.
Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Seminar three hours per week.

CRCJ 4200 [0.5 credit]
Policing Sex
This seminar explores the policing of consensual sexual practices, paying particular attention to the theorization of consent, harm, liberation and agency in a sexual and legal context.
Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Seminar three hours per week.

CRCJ 4300 [0.5 credit]
Social Control
Introduction to social control from early theorizations linking social control to the genesis of the self, to preoccupations with the sorting of humans and the guiding of their conducts, including contemporary engagements with moralization, penal intensification, sovereign exceptionality, and immigration control.
Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Seminar three hours per week.

CRCJ 4400 [0.5 credit]
Crime, Emotions, and The Senses
This course examines the relationship between sensations, emotions, affect, crime, criminalization, social control, and penalty. It questions the rational/emotional binary and investigates how shame, humiliation, fear, panic, pain, pleasure, disgust, empathy and revenge, relate to offender motivation, criminalization, victimization, adjudication, and punishment.
Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Seminar three hours per week.
Critical Race Studies (Minor)

Program Requirements

Minor in Critical Race Studies (4.0 credits)

This minor is available to all undergraduate degree students.

Requirements:

1. 1.0 credit from:
   - FYSM 1402 [1.0] Issues in Women's and Gender Studies
   - WGST 1808 [1.0] Introduction to Feminist Social Transformation

2. 0.5 credit in:
   - CRST 2001 [0.5] Introduction to Critical Race Studies

3. 1.0 credits in CRST or CRST-approved electives at the 2000-level or higher

4. 1.5 credits in CRST or CRST-approved electives at the 3000-level or higher

5. The remaining credits of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Notes:

Other courses may be substituted for the credits specified in item 3 and 4, when material on critical race is central to the course. Such substitutions must be individually approved by the Institute of Women's and Gender Studies. Students are encouraged to consult course descriptions of Special Topics courses.

Approved Critical Race Studies Electives

Note: access to these courses is not guaranteed, and may depend on space availability and the satisfaction of other requirements such as course prerequisites.

**African Studies**

- AFRI 2006 [0.5] Southern Africa
- AFRI 3001 [0.5] Globalization and Popular Culture in Africa
- AFRI 3002 [0.5] Regions in Africa: Cultures, Society, Politics
- AFRI 3003 [0.5] African Social and Political Thought
- AFRI 3005 [0.5] African Migrations and Diasporas
- AFRI 3609 [0.5] African Cinema

**Anthropology**

- ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
- ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology
- ANTH 2020 [0.5] Race and Ethnicity
- ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
- ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa
- ANTH 2630 [0.5] Studies in Asian Societies: Current Issues in Anthropological Research
- ANTH 2635 [0.5] Tradition and Modernity in the Pacific
- ANTH 2640 [0.5] Andean Ethnography
- ANTH 2660 [0.5] Ethnography of North Africa
- ANTH 2670 [0.5] Ethnography of Brazil
- ANTH 3020 [0.5] Studies in Race and Ethnicity
- ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples
- ANTH 4006 [0.5] Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology
- ANTH 4020 [0.5] Advanced Studies in Race and Ethnicity
- ANTH 4109 [0.5] Ethnography, Gender and Globalization
- ANTH 4200 [0.5] War, Security and Citizenship
- ANTH 4610 [0.5] Advanced Studies in Indigenous Peoples
- ANTH 4620 [0.5] Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
- ANTH 4730 [0.5] Colonialism and Post-Colonialism
- ANTH 4750 [0.5] Advanced Studies in Globalization and Citizenship

**Communications**

- COMS 3109 [0.5] Communication, Culture and Identity

**Disability Studies**
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<td>DBST 3001 [0.5]</td>
<td>Disability Studies: Policy and Activism</td>
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<td>DBST 3060 [0.5]</td>
<td>Critical Disability Studies</td>
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<td>DBST 3304 [0.5]</td>
<td>Disability and Childhood: Transnational Perspectives</td>
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<td>ECON 3380 [0.5]</td>
<td>The Economics of Gender and Ethnicity</td>
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<td>EURL 4008 [0.5]</td>
<td>Nationalism and Ethnic Conflict in Eastern and Central Europe</td>
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<td>EURL 4205 [0.5]</td>
<td>Politics of Identity in Europe and the Russian Area</td>
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<td>EURL 4209 [0.5]</td>
<td>Politics of the Caucasus and Caspian Basin</td>
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<td>FILM 3609 [0.5]</td>
<td>African Cinema</td>
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<td>GEOG 1023 [0.5]</td>
<td>Introduction to Cities and Urbanization</td>
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<td>GEOG 2023 [0.5]</td>
<td>Cities, Inequality and Urban Change</td>
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<td>GEOG 2300 [0.5]</td>
<td>Space, Place and Culture</td>
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<td>Geographies of Culture and Identity</td>
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<td>GEOG 4323 [0.5]</td>
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<td>HIST 3102 [0.5]</td>
<td>Queer(ing) Archives</td>
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<td>HIST 3710 [0.5]</td>
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<td>HUMR 2102 [0.5]</td>
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<td>HUMR 2502 [0.5]</td>
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<td>CDNS 1000 [1.0]</td>
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<td>CDNS 2210 [0.5]</td>
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<td>INDG 2011 [0.5]</td>
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<td>Decolonizing Gender, Sex, and Sexuality</td>
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<td>Indigenous Rights, Resistance, and Resurgence</td>
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<td>INDG 4001 [0.5]</td>
<td>Indigeneity in the City</td>
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<td>INDG 4011 [0.5]</td>
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<td>Investigating Journalism: Journalism, Indigenous Peoples and Canada</td>
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<td>LACS 1001 [0.5]</td>
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<td>LAWS 3106 [0.5]</td>
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<td>LAWS 4601 [0.5]</td>
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<td>MUSI 2005 [0.5]</td>
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<td>MUSI 4005 [0.5]</td>
<td>Issues in Jazz Studies</td>
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<td>FYSM 1212 [0.5]</td>
<td>Contemporary Moral, Social, and Religious Issues</td>
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<td>PHIL 1550 [0.5]</td>
<td>Introduction to Ethics and Social Issues</td>
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<td>PHIL 2306 [0.5]</td>
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<td>Gender and Philosophy</td>
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<tr>
<td>PSCI 2002 [0.5]</td>
<td>Canadian Politics and Civil Society</td>
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<tr>
<td>PSCI 2102 [0.5]</td>
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<td>PSCI 3006 [0.5]</td>
<td>Social Power in Canadian Politics</td>
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<tr>
<td>PSCI 3105 [0.5]</td>
<td>Imperialism</td>
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<tr>
<td>PSCI 3108 [0.5]</td>
<td>Politics of Popular Culture</td>
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<tr>
<td>PSCI 3109</td>
<td>The Politics of Law and Morality</td>
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<td>PSCI 3200</td>
<td>U.S. Constitutional Politics</td>
</tr>
<tr>
<td>PSCI 3302</td>
<td>Comparative Political Thought</td>
</tr>
<tr>
<td>PSCI 3303</td>
<td>Feminist Political Theory</td>
</tr>
<tr>
<td>PSCI 3307</td>
<td>Politics of Human Rights</td>
</tr>
<tr>
<td>PSCI 3805</td>
<td>Politics of Race</td>
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<tr>
<td>PSCI 4109</td>
<td>The Politics of the Canadian Charter of Rights and Freedoms</td>
</tr>
<tr>
<td>PSCI 4203</td>
<td>Southern Africa After Apartheid</td>
</tr>
<tr>
<td>PSCI 4210</td>
<td>Political Identity through Graphic Novels</td>
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<tr>
<td>PSCI 4501</td>
<td>Politics of Identity in Europe and the Russian Area</td>
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<tr>
<td>RELI 2712</td>
<td>Religious Diversity of Canada</td>
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<td>RELI 2720</td>
<td>Indigenous Religions of Canada</td>
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<tr>
<td>RELI 3140</td>
<td>Holocaust Encounters</td>
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<tr>
<td>RELI 3250</td>
<td>Evangelical Christianity in Social-Historical Perspective</td>
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<td>SXST 2101</td>
<td>Sexuality Studies: A Critical Introduction</td>
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<tr>
<td>SXST 2102</td>
<td>Sexuality, Gender, and Security</td>
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<tr>
<td>SXST 3103</td>
<td>Sexuality and Disability</td>
</tr>
<tr>
<td>SXST 3104</td>
<td>Transnational Sexualities</td>
</tr>
<tr>
<td>SXST 3106</td>
<td>Queer(ing) Archives</td>
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<tr>
<td>SXST 4101</td>
<td>Interdisciplinary Studies of Sexuality</td>
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<tr>
<td>SXST 4102</td>
<td>Queer Theory</td>
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<tr>
<td>SXST 4103</td>
<td>Politics of Kink</td>
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<tr>
<td>SXST 4104</td>
<td>Sexuality and Political Economy</td>
</tr>
<tr>
<td>SXST 4105</td>
<td>Queer Ecologies</td>
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<tr>
<td>SXST 4106</td>
<td>Queer Aesthetics: Affect, Cultural Production</td>
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<td>SOWK 4301</td>
<td>Racialization and Social Work</td>
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<tr>
<td>SOCI 1001</td>
<td>Introduction to Sociology I</td>
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<td>SOCI 1002</td>
<td>Introduction to Sociology II</td>
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<td>SOCI 2010</td>
<td>Critical Approaches to Economic Inequality</td>
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<td>SOCI 2020</td>
<td>Race and Ethnicity</td>
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<td>Sociology of Health</td>
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<td>SOCI 2170</td>
<td>Foundations in Social Justice</td>
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<td>SOCI 2702</td>
<td>Power and Social Change</td>
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<td>SOCI 3010</td>
<td>Power, Oppression and Resistance</td>
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<tr>
<td>SOCI 3019</td>
<td>Sociology of International Migration</td>
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<tr>
<td>SOCI 3020</td>
<td>Studies in Race and Ethnicity</td>
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<tr>
<td>SOCI 3040</td>
<td>Studies in the Sociology of Gender</td>
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<td>SOCI 3056</td>
<td>Women and Health</td>
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<tr>
<td>SOCI 3060</td>
<td>Critical Disability Studies</td>
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<tr>
<td>SOCI 3170</td>
<td>Social Justice in Action</td>
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<tr>
<td>SOCI 3430</td>
<td>Studies in Collective Action and Social Movements</td>
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<tr>
<td>SOCI 3450</td>
<td>Studies in Law Enforcement</td>
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<tr>
<td>SOCI 3480</td>
<td>Law and Social Regulation</td>
</tr>
<tr>
<td>SOCI 3805</td>
<td>Studies in Population</td>
</tr>
<tr>
<td>SOCI 4020</td>
<td>Advanced Studies in Race and Ethnicity</td>
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<tr>
<td>SOCI 4039</td>
<td>Women in Contemporary Middle East Societies</td>
</tr>
<tr>
<td>SOCI 4040</td>
<td>Feminist Sociology of Intersectionality</td>
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<tr>
<td>SOCI 4043</td>
<td>Families in the 21st Century</td>
</tr>
<tr>
<td>SOCI 4160</td>
<td>War, Terrorism and State Terrorism</td>
</tr>
<tr>
<td>SOCI 4200</td>
<td>War, Security and Citizenship</td>
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<tr>
<td>SOCI 4730</td>
<td>Colonialism and Post-Colonialism</td>
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<tr>
<td>SOCI 4750</td>
<td>Advanced Studies in Globalization and Citizenship</td>
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<tr>
<td>WGST 2801</td>
<td>Activism, Feminisms, and Social Justice</td>
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<tr>
<td>WGST 2803</td>
<td>Body Matters: The Politics of Bodies</td>
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<td>WGST 2811</td>
<td>Masculinities</td>
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<tr>
<td>WGST 2812</td>
<td>Selected Topics in Women's and Gender Studies</td>
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<tr>
<td>WGST 2814</td>
<td>Gender, Sexuality and Cultural Production</td>
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<tr>
<td>WGST 3803</td>
<td>Feminisms and Transnationalism</td>
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<tr>
<td>WGST 3806</td>
<td>Girlhoods</td>
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<td>WGST 3807</td>
<td>Gendered Violence</td>
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<td>WGST 3812</td>
<td>Selected Topics in Women's and Gender Studies</td>
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<tr>
<td>WGST 4812</td>
<td>Selected Topics in Women's and Gender Studies</td>
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</tbody>
</table>

**Regulations**

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

**Critical Race Studies (CRST) Courses**

**CRST 2001 [0.5 credit]**

**Introduction to Critical Race Studies**

Foundations and central tenets of critical race theory, its interdisciplinary debates, applications, and evolutions. Historical roots of oppression, white settler-colonialism, understanding of privilege and power, social construction of race, socio-political conditions producing systemic and institutional racism, intersections with sexism, homophobia, transphobia, classism, and ableism. Includes: Experiential Learning Activity

Prerequisite(s): One of WGST 1808, DBST 1001, HUMR 1001, FYSM 1402 or FYSM 1403, OR permission of the Institute.

Lectures and discussion three hours a week.
CRST 4001 [0.5 credit]
Advanced Critical Race Studies
Interdisciplinary seminar on race, colonialism and feminisms including theories of racial and cultural difference, structures of privilege and power, and forms of resistance. Intersectional theoretical approaches to anti-colonial and feminist analyses of racial subjugation, and engagements with Black, Indigenous and women of colour feminisms.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year standing and 1.0 credit in Women's and Gender Studies or permission of the Institute of Women's and Gender Studies.
Seminar three hours per week.

Digital Humanities

Program Requirements

Minor in Digital Humanities (4.0 credits)
Open to all undergraduate students.

Requirements:
1. 1.0 credit in:
   - DIGH 2001/ENGL 2400 [0.5] Introduction to Digital Humanities
   - DIGH 2002/ENGL 2 Digital Humanities: Theory and Method
2. 2.0 credits from:
   - DIGH 2035/SOCI 2 Technology, Culture and Society
   - DIGH 2705/SOCI 2 Culture in the Digital Age
   - DIGH 3001/ENGL 3 The Book in the Digital Age
   - DIGH 3812/HIST 3 History
   - DIGH 4001/ENGL 4 Studies in Digital Humanities
   - DIGH 4002/ENGL 4 Digital Culture and the Text I
   - DIGH 4003/ENGL 4 Digital Culture and the Text II
   - DIGH 4004/ENGL 4 Digital Humanities Workshop
   - DIGH 4005/ENGL 4 Digital Humanities Practicum
   - HIST 4302 [1.0] Canada: Ideas & Culture
3. 1.0 credit in approved electives at the 1000 level or higher
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Digital Humanities Electives

Applied Linguistics and Discourse Studies
   - ALDS 3701 [0.5] Corpus Linguistics
Greek and Roman Studies
   - CLCV 2305 [1.0] Ancient Science and Technology
Computer Science
   - COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students
Communication & Media Studies
   - COMS 2200 [0.5] Big Data and Society
English
   - ENGL 2100 [0.5] Topics in Popular Culture
   - ENGL 2107 [0.5] Science Fiction
Digital Humanities
   - DIGH 3001 [0.5] The Book in the Digital Age

DIGH 4001 [0.5] Studies in Digital Humanities
DIGH 4002 [0.5] Digital Culture and the Text I
DIGH 4003 [0.5] Digital Culture and the Text II
DIGH 4004 [0.5] Digital Humanities Workshop
DIGH 4005 [0.5] Digital Humanities Practicum

Film Studies
   - FILM 4901 [0.5] Special Topic

Geography and Environmental Studies
   - GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution
   - GEOM 2007 [0.5] Points, Lines and Polygons

History
   - HIST 3812 [0.5] Digital History
   - HIST 4006 [1.0] Seminar in Medieval History
   - HIST 4805 [1.0] Seminar on a Transnational or Thematic Topic

Music
   - MUSI 3603 [0.5] Computer Music Techniques

Philosophy
   - PHIL 2106 [0.5] Information Ethics

Political Science
   - PSCI 3406 [0.5] Public Affairs and Media Strategies
   - PSCI 4003 [0.5] Politics and the Media

Sociology
   - SOCI 2035 [0.5] Technology, Culture and Society
   - SOCI 2705 [0.5] Popular Culture in the Digital Age

Systems and Computer Engineering
   - SYSC 1005 [0.5] Introduction to Software Development
   - SYSC 2001 [0.5] Computer Systems Foundations

Technology, Society, Environment Studies
   - TSES 3001 [0.5] Technology-Society Interactions
   - TSES 4005 [0.5] Information Technology and Society

Regulations
In addition to the requirements listed here, students must satisfy:
1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Digital Humanities (DIGH) Courses

DIGH 2001 [0.5 credit]
Introduction to Digital Humanities
An introduction to the principal debates in and approaches to the Digital Humanities. Also listed as ENGL 2400.
Prerequisite(s): second-year standing or permission of the College of Humanities.
Lecture three hours a week.
DIGH 2002 [0.5 credit]
Digital Humanities: Theory and Method
A multidisciplinary survey of core theories, methodologies and tools within the Digital Humanities. Assignments will include collaborative work and applied projects.
Includes: Experiential Learning Activity
Also listed as ENGL 2401.
Prerequisite(s): second-year standing or permission of the College of Humanities.
Lecture and workshop three hours a week.

DIGH 2035 [0.5 credit]
Technology, Culture and Society
Principal theories and methods used by Science and Technology Studies (STS) scholars to examine the social and cultural shaping of technology. The substantive focus of the course is on the design, development, production, diffusion, consumption and use of technology.
Also listed as SOCI 2035.
Precludes additional credit for SOCI 2400.
Prerequisite(s): SOCI 1001 and SOCI 1002, or ANTH 1001 or ANTH 1002.
Lectures/discussion groups three hours a week.

DIGH 2705 [0.5 credit]
Popular Culture in the Digital Age
An examination of various approaches to analyzing digital media and their role in the production and consumption of contemporary cultural forms and practices. Students will reflect upon their use of digital media and the influence they have on their lives and popular culture, more generally.
Also listed as SOCI 2705.
Prerequisite(s): SOCI 1001 and SOCI 1002, or ANTH 1001 or ANTH 1002.
Lecture/discussion groups three hours a week.

DIGH 3001 [0.5 credit]
The Book in the Digital Age
A multidisciplinary course focused on the social, economic and political dimensions of the book in its manuscript, print and digital forms.
Also listed as ENGL 3401.
Prerequisite(s): third-year standing, or permission of the College of Humanities.
Lecture three hours a week.

DIGH 3035 [0.5 credit]
Science, Culture and Society: Social Studies of Science
Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.
Also listed as SOCI 3035, ANTH 3035.
Prerequisite(s): DIGH 2035 or SOCI 2035 and third-year standing.
Lecture three hours a week.

DIGH 3704 [0.5 credit]
Cognitive Science and the Digital Humanities
Exploration of the roles of human and artificial cognition in the digital humanities. Topics may include virtual and augmented reality as applied to the humanities, cognitive issues in hypertext and hypermedia; linguistic and philosophical considerations in digital media, cognitive narratology, and artificial intelligence.
Also listed as CGSC 3704.
Prerequisite(s): CGSC 1001; CGSC 2001 or DIGH 2001; and third-year standing.
Seminar three hours per week.

DIGH 3812 [0.5 credit]
Digital History
The digital representation of history, exploring the approaches, issues, and methods of working in this environment. Topics may include gaming, virtual environments, digital research tools, public digital history. (Field e).
Includes: Experiential Learning Activity
Also listed as HIST 3812.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lecture three hours a week.

DIGH 3814 [0.5 credit]
Crafting Digital History
This course applies the creative use of information and media/computing technologies to address the digital cultural heritage issues of public historians, archaeologists, and anthropologists. Topics may include webscraping, data mining, designing and implementing research databases, and visual storytelling of those results. (Field e).
Includes: Experiential Learning Activity
Also listed as HIST 3814.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week or online.

DIGH 4001 [0.5 credit]
Studies in Digital Humanities
A study of current issues and debates in Digital Humanities.
Also listed as ENGL 4155.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Seminar or lecture three hours a week.

DIGH 4002 [0.5 credit]
Digital Culture and the Text I
A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.
Also listed as ENGL 4125.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Seminar or lecture three hours a week.
DIGH 4003 [0.5 credit]
Digital Culture and the Text II
A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year. Also listed as ENGL 4145.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Seminar or lecture three hours a week.

DIGH 4004 [0.5 credit]
Digital Humanities Workshop
This workshop will provide students with the opportunity to complete an individual or collaborative capstone project in the Digital Humanities.
Includes: Experiential Learning Activity
Also listed as ENGL 4404.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Workshop three hours a week.

DIGH 4005 [0.5 credit]
Digital Humanities Practicum
Practical experience gained by working on projects under the supervision of the staff of a participating public- or private-sector institution or organization, including a final written assignment or equivalent project. A maximum of 1.0 practicum credit may be applied towards degree requirements.
Includes: Experiential Learning Activity
Also listed as ENGL 4405.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Practicum.

Disability Studies (Minor)

Program Requirements

Minor in Disability Studies (4.0 credits)
Open to all undergraduate degree students.

Requirements:

1. 2.0 credits in:
   - WGST 1808 [1.0] Introduction to Feminist Social Transformation
   - or FYSM 1402 [1.0] Issues in Women's and Gender Studies
   - DBST 2001 [0.5] Disability Society
   - DBST 3001 [0.5] Disability Studies: Policy and Activism
   - 2.0 credits in

2. 1.0 credit from:
   - CHST 3304/DBST 3304 Disability and Childhood: Transnational Perspectives
   - HUMR 3304 [0.5] Disability Rights
   - SOCI 3060/DBST 3304 Disability Studies
   - SOWK 4300 [0.5] Social Work and Persons with Disabilities
   - SXST 3103 [0.5] Sexuality and Disability

3. 1.0 credits in DBST or Approved Disability Studies Electives

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Notes

1. Courses used to fulfill Items 2 and 3 above must be from more than one discipline.
2. Other courses may be substituted for the credits specified in Items 2 and 3, when material on disability is central to the course. Such substitutions must be individually approved by the Pauline Jewett Institute of Women's and Gender Studies. Students are encouraged to consult course descriptions of Special Topics courses.

APPROVED DISABILITY STUDIES ELECTIVES

Note: access to these courses is not guaranteed, and may depend on space availability and the satisfaction of other requirements such as course prerequisites.

Anthropology
   - ANTH 3310 [0.5] Studies in Medical Anthropology
   - ANTH 4780 [0.5] Anthropology of Personhood

Critical Race Studies
   - CRST 2001 [0.5] Introduction to Critical Race Studies
   - CRST 4001 [0.5] Advanced Critical Race Studies

First Year Seminars (FYSM)
   - FYSM 1504 [1.0] Society and the Designed Environment

History
   - HIST 3515 [0.5] Madness in Modern Times

Human Rights
   - HUMR 3504 [0.5] Public Health and Human Rights
   - HUMR 4305 [0.5] Disability and Social Justice

Law
   - LAWS 3503 [0.5] Equality and Discrimination
   - LAWS 3508 [0.5] Health Law
   - LAWS 4503 [0.5] Law, Disability and Society

Psychology
   - PSYC 2301 [0.5] Introduction to Health Psychology
   - PSYC 2500 [0.5] Foundations of Developmental Psychology

Public Administration
   - PADM 4221 [0.5] Health Policy in Canada
   - PADM 4817 [0.5] Health Policy in Developing Countries

Sexuality Studies
   - SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
   - SXST 2102 [0.5] Sexuality, Gender, and Security
   - SXST 3103 [0.5] Sexuality and Disability
   - SXST 3104 [0.5] Transnational Sexualities
   - SXST 3106 [0.5] Queer(ing) Archives
   - SXST 4101 [0.5] Interdisciplinary Studies of Sexuality
   - SXST 4102 [0.5] Queer Theory
   - SXST 4103 [0.5] Politics of Kink
   - SXST 4104 [0.5] Sexuality and Political Economy
   - SXST 4105 [0.5] Queer Ecologies
**SXST 4106 [0.5]**  Queer Aesthetics: Affect, Cultural Production, Sexuality

**Social Work**

SOWK 4300 [0.5]  Social Work and Persons with Disabilities

**Sociology**

SOCI 2050 [0.5]  Sociology of Health

SOCI 3050 [0.5]  Studies in the Sociology of Health

SOCI 3056 [0.5]  Women and Health

**Technology, Society, Environment Studies**

TSES 3001 [0.5]  Technology-Society Interactions

**Women's and Gender Studies**

WGST 2801 [0.5]  Activism, Feminisms, and Social Justice

WGST 2803 [0.5]  Body Matters: The Politics of Bodies

WGST 2811 [0.5]  Masculinities

WGST 2812 [0.5]  Selected Topics in Women's and Gender Studies

WGST 2814 [0.5]  Gender, Sexuality and Cultural Production

WGST 3803 [0.5]  Feminisms and Transnationalism

WGST 3807 [0.5]  Gendered Violence

WGST 3812 [0.5]  Selected Topics in Women's and Gender Studies

WGST 4812 [0.5]  Selected Topics in Women's and Gender Studies

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**Regulations**

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

**Disability Studies (DBST) Courses**

**DBST 1001 [0.5 credit]**

**Introduction to Disability Studies**

Challenging negative stereotypes of disability by allowing students the opportunity to explore disability through many different venues including history, theory, culture, ethics, policy and disability rights. Reframing disability from personal tragedy to issues of oppression, access, inclusion and equality.

Lectures and discussion groups three hours per week.

**DBST 2001 [0.5 credit]**

**Disabling Society**

Interdisciplinary approach to the debates and theories that challenge the normative values, knowledge sources, and cultural representations of disablement in society.

Prerequisite(s): second-year standing and DBST 1001.

Lecture and discussion three hours a week.

**DBST 3001 [0.5 credit]**

**Disability Studies: Policy and Activism**

The complex legal, policy and discursive frameworks that shape the lives of persons with disability and the history of the emergence of the disability rights movement as a scholar and activist challenge to, and renegotiation of, those frameworks.

Includes: Experiential Learning Activity

Precludes additional credit for DBST 4001 (no longer offered).

Prerequisite(s): third-year standing.

Lecture three hours a week.

**DBST 3060 [0.5 credit]**

**Critical Disability Studies**

Course engages contemporary disability theory, culture, and activism to consider bodily difference and its relation to the workings of power and social control, accessibility, normalization, ableism, and medicalization. Students will gain an understanding of the contemporary debates, theories, and methodologies of critical disability studies.

Also listed as SOCI 3060.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lectures three hours a week.

**DBST 3301 [0.5 credit]**

**Introduction to Deaf Studies**

A critical introduction to Deaf community and culture as they relate to a social model of disability, to ethnicity, and to issues of diversity and inclusion. Discourse analysis of research and policy in education for Deaf students from early childhood and beyond.

Also listed as ALDS 3301.

Precludes additional credit for ALDS 3903A if taken in Winter term 2016 or Winter term 2018, and ALDS 4906A if taken in Fall term 2016.

Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or enrolment in the Minor in Disability Studies.

Seminars three hours a week.

**DBST 3304 [0.5 credit]**

**Disability and Childhood: Transnational Perspectives**

Drawing on theory and research in disabled children’s childhood studies, sociology of childhood, disability studies, and girlhood studies, this course examines the discursive and material constructions of disabled youth and childhood in transnational contexts in relation to emerging neo-colonial, neo-imperialist, and neo-liberal ideologies.

Also listed as CHST 3304.

Prerequisite(s): third-year standing in Childhood and Youth Studies or Disability Studies.

Lecture three hours a week.
**DBST 3900 [0.5 credit]**  
**Independent Study**  
Essays, discussions, and/or examinations based on a bibliography constructed by the student in consultation with an instructor.  
Prerequisite(s): third or fourth-year standing in the Disability Studies Minor and a CGPA of 9.0 or higher.

### Earth Sciences

This section presents the requirements for programs in:

- Earth Sciences B.Sc. Honours
- Earth Sciences with Concentration in Finance: Resource Valuation B.Sc. Honours
- Earth Sciences with Concentration in Resource Economics B.Sc. Honours
- Earth Sciences with Concentration in Vertebrate Paleontology and Paleoecology B.Sc. Honours
- Earth Sciences with Concentration in Geophysics B.Sc. Honours
- Earth Sciences with Concentration in Geophysics B.Sc. Honours
- Earth Sciences B.Sc. Major
- Earth Sciences B.Sc.
- Earth Sciences and Physical Geography B.Sc. Combined Honours
- Earth Sciences and Geography: Concentration in Terrain Science B.Sc. Combined Honours
- Earth Sciences: Earth Resources and Processes

#### Program Requirements

**Course Categories for Earth Sciences Programs**  
The program descriptions below make use of the following course categories that are defined in the *Academic Regulations for the Bachelor of Science Degree* section of this Calendar.

- Science Faculty Electives
- Advanced Science Faculty Electives
- Science Continuation Courses
- Science Geography
- Science Psychology
- Approved Courses Outside the Faculties of Science and Engineering and Design
- Free Elective

#### Earth Sciences

**B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (11.0 credits)**

<table>
<thead>
<tr>
<th>1.</th>
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<tbody>
<tr>
<td>1.0</td>
<td><strong>ERTH 1006 [0.5]</strong></td>
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<tr>
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<td><strong>ERTH 1009 [0.5]</strong></td>
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<tr>
<th>2.</th>
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<tr>
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<td><strong>ERTH 2102 [0.5]</strong></td>
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<tr>
<td></td>
<td><strong>ERTH 2104 [0.5]</strong></td>
</tr>
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</table>

#### 3. 0.5 credit from:

| 0.5 | **ERTH 3203 [0.5]** | Sedimentology |
|     | **ERTH 3206 [0.5]** | Sedimentary Depositional Systems (See Note, below) |

#### 4. 3.0 credits in:

| 3.0 | **ERTH 3003 [0.5]** | Geochemistry and Geochronology |
|     | **ERTH 3204 [0.5]** | Mineral Deposits |
|     | **ERTH 3205 [0.5]** | Physical Hydrogeology |

|     | **ERTH 3207 [0.5]** | Metamorphic Petrology and Processes |
|     | **ERTH 3405 [0.5]** | Geophysical Methods |
|     | **ERTH 3806 [0.5]** | Structural Geology (See Note, below) |

#### 5. 2.0 credits in **ERTH** at the 4000-level

| 2.0 | **ERTH 4908 [1.0]** | Honours Thesis |
|     | **ERTH 4909 [0.5]** | and 0.5 credit in ERTH at the 4000 level |

**B. Credits Not Included in the Major CGPA (9.0 credits)**

| 1.0 | **MATH 1007 [0.5]** | Elementary Calculus I |
|     | **MATH 1107 [0.5]** | Linear Algebra I |

| 1.0 | **CHEM 1001 [0.5]** & **CHEM 1002 [0.5]** | General Chemistry I & General Chemistry II |
|     | **CHEM 1005 [0.5]** & **CHEM 1006 [0.5]** | Elementary Chemistry I & Elementary Chemistry II |

| 1.0 | **PHYS 1007 [0.5]** & **PHYS 1008 [0.5]** | Elementary University Physics I & Elementary University Physics II |

| 0.5 | **Biol 1104 [0.5]** | Foundations of Biology II |

| 0.5 | **COMP 1005 [0.5]** | Introduction to Computer Science I |

| 0.5 | **STAT 2507 [0.5]** | Introduction to Statistical Modeling I |

| 0.5 | **ERTH 2004 [0.5]** | Maps, Satellites and the Geospatial Revolution |

| 1.0 | **1.0 credit in Science Continuation Courses (not ERTH)** |
|     | **1.0 credit in Science Continuation Courses (not ERTH)** |

| 0.5 | **NSCI 1000 [0.5]** | Seminar in Science (or approved courses outside the faculties of Science and Engineering and Design) |

| 1.5 | **1.5 credits in approved courses outside the faculties of Science and Engineering and Design** |

| 1.0 | **1.0 credit in free electives.** |

**Total Credits**  
20.0

**Note:**
1. For Items 14-17, students admitted to the Minor in Business should substitute the requirements for the Minor. See the Business section of this Calendar.

### Earth Sciences with Concentration in Finance: Resource Valuation

#### B.Sc. Honours (21.0 credits)

**A. Credits included in the Major CGPA (10.5 credits)**

<table>
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<tr>
<th>Item</th>
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<td>1.</td>
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<td>ERTH 1006 [0.5] Exploring Planet Earth</td>
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<tr>
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<td></td>
<td>ERTH 1009 [0.5] The Earth System Through Time</td>
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<td></td>
<td>ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes</td>
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<td>ERTH 2105 [0.5] Geodynamics</td>
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<tr>
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<td></td>
<td>ERTH 2314 [0.5] Sedimentation and Stratigraphy</td>
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<td></td>
<td>ERTH 2406 [0.5] Geology and Map Interpretation</td>
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<td>ERTH 2802 [0.5] Field Geology I</td>
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<td>ERTH 3203 [0.5] Sedimentology</td>
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<td>ERTH 3206 [0.5] Sedimentary Depositional Systems (See Note, below)</td>
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<td></td>
<td>ERTH 3204 [0.5] Mineral Deposits</td>
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<td>ERTH 3205 [0.5] Physical Hydrogeology</td>
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<td>ERTH 3207 [0.5] Metamorphic Petrology and Processes</td>
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<td>ERTH 3405 [0.5] Geophysical Methods</td>
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<td></td>
<td>ERTH 3806 [0.5] Structural Geology (See Note, below)</td>
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<td>5.</td>
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<td>ERTH 4303 [0.5] Resources of a Finite Earth</td>
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<td>6.</td>
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<td>ERTH 4909 [0.5] Research in Earth Sciences and 0.5 credit in ERTH at the 4000-level</td>
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<tr>
<td>7.</td>
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<td>OR ERTH 4910 [1.0] Honours Thesis in Resource Evaluation</td>
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<td>CHEM 1002 [0.5] General Chemistry II</td>
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<td>BIOL 1104 [0.5] Foundations of Biology II</td>
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<td>COMP 1005 [0.5] Introduction to Computer Science I</td>
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**B. Credits Not Included in the Major CGPA (10.5 credits)**

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<td>1.</td>
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<td>BUSI 1002 [0.5] Management Accounting</td>
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<td>BUSI 3500 [0.5] Applied Corporate Finance</td>
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<td>BUSI 3502 [0.5] Investments</td>
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<td>ECON 3803 [0.5] The Economics of Natural Resources</td>
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**Total Credits: 21.0**

### Earth Sciences with Concentration in Resource Economics

#### B.Sc. Honours (20.0 credits)

**A. Credits Included in the Major CGPA (11.0 credits)**

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<td>BIOL 1104 [0.5] Foundations of Biology II</td>
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<td>COMP 1005 [0.5] Introduction to Computer Science I</td>
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**Total Credits: 20.0**
### Earth Sciences with Concentration in Vertebrate Paleontology and Paleoecology

**B.Sc. Honours (20.0 credits)**

#### A. Credits Included in the Major CGPA (10.5 credits)

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<tr>
<td>ERTH 4908 [0.5]</td>
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<td>OR</td>
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<tr>
<td>ERTH 4909 [0.5]</td>
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<tr>
<td>and 0.5 credit in ERTH at the 4000 level</td>
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#### B. Credits Not Included in the Major CGPA (9.0 credits)

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<td>&amp; ECON 1002 [0.5]</td>
<td>Introduction to Macroeconomics</td>
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<td>ECON 2020 [0.5]</td>
<td>Intermediate Microeconomics I: Producers and Market Structure</td>
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<td>Intermediate Microeconomics II: Consumers and General Equilibrium</td>
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<td>ECON 2210 [0.5]</td>
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<td>ECON 2220 [0.5]</td>
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<td>ECON 3804 [0.5]</td>
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<td>ERTH 2004 [0.5]</td>
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**Total Credits** 20.0

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### Earth Sciences with Concentration in Vertebrate Paleontology and Paleoecology

**B.Sc. Honours (20.0 credits)**

#### A. Credits Included in the Major CGPA (10.5 credits)

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<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
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<td>Sedimentation and Stratigraphy</td>
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<td>Geology and Map Interpretation</td>
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<td>Sedimentology</td>
</tr>
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<td>ERTH 3206 [0.5]</td>
<td>Sedimentary Depositional Systems (See note, below)</td>
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#### B. Credits Not Included in the Major CGPA (9.0 credits)

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<td>ERTH 3111 [0.5]</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
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<td>ERTH 3112 [0.5]</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
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<td>ERTH 4808 [0.5]</td>
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<td>ERTH 4908 [1.0]</td>
<td>Honours Thesis</td>
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<tr>
<td>BIOL 3202 [0.5]</td>
<td>Principles of Developmental Biology</td>
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<tr>
<td>BIOL 3501 [0.5]</td>
<td>Biomechanics</td>
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<tr>
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<td>BIOL 3609 [0.5]</td>
<td>Evolutionary Concepts</td>
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<td>BIOL 3611 [0.5]</td>
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<tr>
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<td>BIOL 4502 [0.5]</td>
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<td>GEOG 3102 [0.5]</td>
<td>Geomorphology</td>
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<td>GEOG 3104 [0.5]</td>
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<tr>
<td>ERTH 2401 [0.5]</td>
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<td>ERTH 4005 [0.5]</td>
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<td>ERTH 4305 [0.5]</td>
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<td>ERTH 4006 [0.5]</td>
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<td>ERTH 4007 [0.5]</td>
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<tr>
<td>ERTH 4306 [0.5]</td>
<td>Resource Basin Analysis</td>
</tr>
<tr>
<td>ERTH 4403 [0.5]</td>
<td>Tectonic Evolution of Canada</td>
</tr>
<tr>
<td>ERTH 4820 [0.5]</td>
<td>Research Methods in Earth Sciences</td>
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<tr>
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<td>General Chemistry II</td>
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<tr>
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<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>&amp; CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
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B.Sc. Honours (20.0 credits)
Earth Sciences with Concentration in
Geophysics
B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)
1. 1.0 credit in:
   ERTH 1006 [0.5] Exploring Planet Earth
   ERTH 1009 [0.5] The Earth System Through Time
2. 1.0 credit in:
   MATH 1004 [0.5] Calculus for Engineering or Physics
   MATH 1104 [0.5] Linear Algebra for Engineering or Science
3. 1.0 credit in:
   PHYS 1001 [0.5] Foundations of Physics I
   & PHYS 1002 [0.5] Foundations of Physics II (recommended)
   OR
   PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics
   & PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
   OR
   PHYS 1007 [0.5] Elementary University Physics I
   & PHYS 1008 [0.5] Elementary University Physics II (with an average grade of B- or higher)
4. 3.0 credits in:
   ERTH 2102 [0.5] Mineralogy to Petrology
   ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes
   ERTH 2105 [0.5] Geodynamics
   ERTH 2314 [0.5] Sedimentation and Stratigraphy
   ERTH 2406 [0.5] Geology and Map Interpretation
   ERTH 2802 [0.5] Field Geology I
5. 0.5 credit from:
   ERTH 3203 [0.5] Sedimentology
   ERTH 3206 [0.5] Sedimentary Depositional Systems
6. 2.5 credits in:
   ERTH 3003 [0.5] Geochemistry and Geochronology
   ERTH 3204 [0.5] Mineral Deposits
   ERTH 3205 [0.5] Physical Hydrogeology
   ERTH 3405 [0.5] Geophysical Methods
   ERTH 3806 [0.5] Structural Geology
7. 0.5 credit in:
   ERTH 4707 [0.5] Engineering Seismology
8. 1.0 credit from:
   ERTH 4908 [1.0] Honours Thesis
   OR
   ERTH 4909 [0.5] Research in Earth Sciences
   and 0.5 credit in ERTH at the 4000-level
B. Credits Not Included in the Major CGPA (9.5 credits)
9. 0.5 credit from:
   COMP 1005 [0.5] Introduction to Computer Science I
   COMP 1006 [0.5] Introduction to Computer Science II
10. 1.0 credit from:
    CHEM 1001 [0.5] General Chemistry I
    & CHEM 1002 [0.5] General Chemistry II
    CHEM 1005 [0.5] Elementary Chemistry I
    & CHEM 1006 [0.5] Elementary Chemistry II
11. 1.0 credit in:
    MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
    STAT 2507 [0.5] Introduction to Statistical Modeling I
12. 0.5 credit in:
    ERTH 2004 [0.5] Maps, Satellites and the Geospatial Revolution
13. 4.5 credits from:
    ERTH 2312 [0.5] Paleontology
    ERTH 4003 [0.5] Directed Studies in Geology
    ERTH 4107 [0.5] Geophysical Mechanics
    ERTH 4206 [0.5] Contaminant and Remediation Hydrogeology
    ERTH 4303 [0.5] Resources of a Finite Earth
    ERTH 4305 [0.5] Carbonate Sedimentology
    ERTH 4306 [0.5] Resource Basin Analysis
    ERTH 4402 [0.5] Structural Geology
    ERTH 4403 [0.5] Tectonic Evolution of Canada
    ERTH 4801 [0.5] Physics of the Earth
    ERTH 4804 [0.5] Exploration Geophysics
    ERTH 4807 [0.5] Field Geology II
    ERTH 4820 [0.5] Research Methods in Earth Sciences
    MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
14. 0.5 credit in:
    NSCI 1000 [0.5] Seminar in Science

Note:
For Item 3 above, ERTH 3203 is required if prerequisite conditions are met.

Sedimentary Depositional Systems
Exploring Planet Earth
Field Geology I
Geology and Map Interpretation
Sedimentation and Stratigraphy
Geodynamics
Igneous Systems, Geochemistry and Processes
Geodynamics
Sedimentation and Stratigraphy
Geology and Map Interpretation
Field Geology I

Total Credits 20.0

Mathematics Faculty Electives (not ERTH or BIOL)
Note:
5.0 credit from:
4.3 credit in:
3.1 credit in:
2.1 credit in:
1.1 credit in:
A. Credits Included in the Major CGPA (10.5 credits)
1. 1.0 credit in:
   ERTH 1006 [0.5] Exploring Planet Earth
   ERTH 1009 [0.5] The Earth System Through Time
2. 1.0 credit in:
   MATH 1004 [0.5] Calculus for Engineering or Physics
   MATH 1104 [0.5] Linear Algebra for Engineering or Science
   OR
   PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics
   & PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
   OR
   PHYS 1007 [0.5] Elementary University Physics I
   & PHYS 1008 [0.5] Elementary University Physics II (with an average grade of B- or higher)
   3. 1.0 credit in:
   PHYS 1001 [0.5] Foundations of Physics I
   & PHYS 1002 [0.5] Foundations of Physics II (recommended)
4. 3.0 credits in:
   ERTH 2102 [0.5] Mineralogy to Petrology
   ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes
   ERTH 2105 [0.5] Geodynamics
   ERTH 2314 [0.5] Sedimentation and Stratigraphy
   ERTH 2406 [0.5] Geology and Map Interpretation
   ERTH 2802 [0.5] Field Geology I
5. 0.5 credit from:
   ERTH 3203 [0.5] Sedimentology
   ERTH 3206 [0.5] Sedimentary Depositional Systems
or approved course outside the Faculties of Science and Engineering and Design

15. 1.5 credits in free electives.  

Total Credits 20.0

Earth Sciences
B.Sc. Major (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit in:
   - ERTH 1006 [0.5] Exploring Planet Earth
   - ERTH 1009 [0.5] The Earth System Through Time

2. 3.5 credits in:
   - ERTH 2102 [0.5] Mineralogy to Petrology
   - ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes
   - ERTH 2105 [0.5] Geodynamics
   - ERTH 2312 [0.5] Paleontology
   - ERTH 2314 [0.5] Sedimentation and Stratigraphy
   - ERTH 2406 [0.5] Geology and Map Interpretation
   - ERTH 2802 [0.5] Field Geology I

3. 0.5 credit from:
   - ERTH 3203 [0.5] Sedimentology
   - ERTH 3206 [0.5] Sedimentary Depositional Systems

4. 3.0 credits in:
   - ERTH 3003 [0.5] Geochemistry and Geochronology
   - ERTH 3204 [0.5] Mineral Deposits
   - ERTH 3205 [0.5] Physical Hydrogeology
   - ERTH 3207 [0.5] Metamorphic Petrology and Processes
   - ERTH 3405 [0.5] Geophysical Methods
   - ERTH 3806 [0.5] Structural Geology

5. 3.0 credits in ERTH at the 4000-level 3.0

B. Credits Not Included in the Major CGPA (7.0 credits)

6. 1.0 credit in:
   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1107 [0.5] Linear Algebra I

7. 1.0 credit from:
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - CHEM 1005 [0.5] Elementary Chemistry I
   - CHEM 1006 [0.5] Elementary Chemistry II

8. 1.0 credit in:
   - PHYS 1007 [0.5] Elementary University Physics I
   - PHYS 1008 [0.5] Elementary University Physics II

9. 0.5 credit in:
   - BIOL 1104 [0.5] Foundations of Biology II

10. 0.5 credit in:
    - COMP 1005 [0.5] Introduction to Computer Science I

11. 0.5 credit in:
    - STAT 2507 [0.5] Introduction to Statistical Modeling I

12. 0.5 credit in:
    - ERTH 2004 [0.5] Maps, Satellites and the Geospatial Revolution

13. 1.0 credit in Science Continuation Courses (not ERTH)

14. 0.5 credit in:

15. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design

16. 0.5 credits in free electives.

Note:

1. For Items 13-16, students admitted to the Minor in Business should substitute the requirements for the Minor. See the Business section of this Calendar.

Earth Sciences
B.Sc. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in:
   - ERTH 1006 [0.5] Exploring Planet Earth
   - ERTH 1009 [0.5] The Earth System Through Time

2. 3.5 credits in:
   - ERTH 2102 [0.5] Mineralogy to Petrology
   - ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes
   - ERTH 2105 [0.5] Geodynamics
   - ERTH 2312 [0.5] Paleontology
   - ERTH 2314 [0.5] Sedimentation and Stratigraphy
   - ERTH 2406 [0.5] Geology and Map Interpretation
   - ERTH 2802 [0.5] Field Geology I

3. 3.5 credits in:
   - ERTH 3003 [0.5] Geochemistry and Geochronology
   - ERTH 3204 [0.5] Mineral Deposits
   - ERTH 3205 [0.5] Physical Hydrogeology
   - ERTH 3207 [0.5] Metamorphic Petrology and Processes
   - ERTH 3405 [0.5] Geophysical Methods
   - ERTH 3806 [0.5] Structural Geology

B. Credits Not Included in the Major CGPA (7.0 credits)

4. 1.0 credit in:
   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1107 [0.5] Linear Algebra I

5. 1.0 credit from:
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - CHEM 1005 [0.5] Elementary Chemistry I
   - CHEM 1006 [0.5] Elementary Chemistry II

6. 1.0 credit in:
   - PHYS 1007 [0.5] Elementary University Physics I
   - PHYS 1008 [0.5] Elementary University Physics II

7. 0.5 credit in:
   - BIOL 1104 [0.5] Foundations of Biology II

8. 0.5 credit in:
   - COMP 1005 [0.5] Introduction to Computer Science I

9. 0.5 credit in:
   - STAT 2507 [0.5] Introduction to Statistical Modeling I

10. 0.5 credit in:
    - ERTH 2004 [0.5] Maps, Satellites and the Geospatial Revolution

11. 0.5 credit in:
    - PHYS 1007 [0.5] Elementary University Physics I
    - PHYS 1008 [0.5] Elementary University Physics II

12. 0.5 credit in:
    - BIOL 1104 [0.5] Foundations of Biology II
    - PHYS 1007 [0.5] Elementary University Physics I

13. 0.5 credit in:
    - ERTH 2004 [0.5] Maps, Satellites and the Geospatial Revolution

14. 0.5 credit in:

15. 0.5 credits in approved courses outside the faculties of Science and Engineering and Design

16. 0.5 credits in free electives.
### Earth Sciences and Physical Geography
#### B.Sc. Combined Honours (20.0 credits)

**A. Credits Included in the Major CGPA (13.0 credits)**

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<th>1.</th>
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<td>GEOG 1010 [0.5]</td>
<td>Global Environmental Systems</td>
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<td>GEOG 2014 [0.5]</td>
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<td>ERTH 2104 [0.5]</td>
<td>Igneous Systems, Geochemistry and Processes</td>
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<td>ERTH 2314 [0.5]</td>
<td>Sedimentation and Stratigraphy</td>
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<td>ERTH 2406 [0.5]</td>
<td>Geology and Map Interpretation</td>
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<td>Geophysical Methods</td>
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<td>GEOG 3103 [0.5]</td>
<td>Watershed Hydrology</td>
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<td>GEO 3002 [0.5]</td>
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<td>Sedimentology</td>
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<td>ERTH 3206 [0.5]</td>
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**OR**

- ERT 4908 [0.5] Directed Studies in Geography
- 0.5 credit in ERTH, GEOG or GEOM at the 4000-level

**B. Credits Not Included in the Major CGPA (7.0 credits)**

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<tr>
<td>MATH 1007 [0.5]</td>
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<td>MATH 1107 [0.5]</td>
<td>Linear Algebra I</td>
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<td>&amp; CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
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<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 1006 [0.5]</td>
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<td>Elementary University Physics I</td>
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<td>&amp; PHYS 1008 [0.5]</td>
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<td>SEM 1000 [0.5]</td>
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**Total Credits**

20.0

**Approved Electives - B.Sc. Earth Sciences and Physical Geography**

**Biology**

<table>
<thead>
<tr>
<th>BIOL 1103 [0.5]</th>
<th>Foundations of Biology I</th>
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<tbody>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
</tbody>
</table>

**Chemistry**

<table>
<thead>
<tr>
<th>CHEM 2103 [0.5]</th>
<th>Physical Chemistry I</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2207 [0.5]</td>
<td>Introduction to Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2501 [0.5]</td>
<td>Introduction to Inorganic and Bioinorganic Chemistry</td>
</tr>
</tbody>
</table>

**Computer Science**

| COMP 1006 [0.5] | Introduction to Computer Science II |

**Mathematics**

<table>
<thead>
<tr>
<th>MATH 1005 [0.5]</th>
<th>Differential Equations and Infinite Series for Engineering or Physics</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2007 [0.5]</td>
<td>Elementary Calculus II</td>
</tr>
<tr>
<td>MATH 2107 [0.5]</td>
<td>Linear Algebra II</td>
</tr>
</tbody>
</table>

**Physics**

| PHYS 2202 [0.5] | Wave Motion and Optics |

**Statistics**
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 2509</td>
<td>Introduction to Statistical Modeling II</td>
<td>0.5</td>
</tr>
<tr>
<td>CHEM 1005</td>
<td>Elementary Chemistry I</td>
<td>1.0</td>
</tr>
<tr>
<td>CHEM 1006</td>
<td>Elementary Chemistry II</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Earth Sciences and Geography:**

**Concentration in Terrain Science**

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

1. 0.5 credit in: GEOG 2014 [0.5] The Earth's Surface 0.5
2. 0.5 credit in: ERTH 1006 [0.5] Exploring Planet Earth 0.5
3. 2.5 credits in: ERTH 2102 [0.5] Mineralogy to Petrology 0.5
ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes 0.5
ERTH 2314 [0.5] Sedimentation and Stratigraphy 0.5
ERTH 2406 [0.5] Geology and Map Interpretation 0.5
ERTH 2802 [0.5] Field Geology I 0.5
4. 0.5 credit from: ERTH 3203 [0.5] Sedimentology 0.5
ERTH 3206 [0.5] Sedimentary Depositional Systems (See Note, below) 0.5
5. 1.5 credits in: ERTH 3205 [0.5] Physical Hydrogeology 1.5
ERTH 3207 [0.5] Metamorphic Petrology and Processes 1.5
ERTH 3806 [0.5] Structural Geology 1.5
6. 1.0 credit in ERTH at the 4000-level 1.0
7. 0.5 credit from: GEOG 2006 [0.5] Introduction to Quantitative Research 0.5
STAT 2507 [0.5] Introduction to Statistical Modeling I 0.5
8. 1.5 credits in: GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution 1.5
GEOM 2007 [0.5] Points, Lines and Polygons 1.5
GEOM 2013 [0.5] Weather and Water 1.5
9. 2.0 credits in: GEOM 3002 [0.5] Introduction to Remote Sensing 2.0
GEOM 3102 [0.5] Geomorphology 2.0
GEOM 3105 [0.5] Climate and Atmospheric Change 2.0
GEOM 3108 [0.5] Soil Properties 2.0
10. 1.0 credit in: GEOG 4101 [0.5] Two Million Years of Environmental Change 1.0
GEOG 4108 [0.5] Permafrost 1.0
11. 1.0 credit from: GEOG 4906 [1.0] Honours Research Project 1.0
ERTH 4908 [1.0] Honours Thesis 1.0
ERTH 4909 and 0.5 credit 4000-level ERTH 0.5
B. Credits Not Included in the Major CGPA (7.5 credits)

12. 1.0 credit in: MATH 1007 [0.5] Elementary Calculus I 1.0
MATH 1107 [0.5] Linear Algebra I 1.0
13. 1.0 credit from: CHEM 1001 [0.5] General Chemistry I 1.0
& CHEM 1002 [0.5] General Chemistry II 1.0

**Biology and Earth Sciences**

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.5 credits in: BIOL 1103 [0.5] Foundations of Biology I 1.5
BIOL 1104 [0.5] Foundations of Biology II 1.5
BIOL 2001 [0.5] Animals: Form and Function 1.5
2. 1.0 credit in: ERTH 1006 [0.5] Exploring Planet Earth 1.0
ERTH 1009 [0.5] The Earth System Through Time 1.0
3. 0.5 credit from: BIOL 2600 [0.5] Ecology 0.5
BIOL 3605 [0.5] Field Course I 0.5
4. 3.5 credits in BIOL or BIOC, with at least 1.0 credit at the 3000-level and 1.0 credit at the 4000-level 3.5
5. 3.0 credits in: ERTH 2102 [0.5] Mineralogy to Petrology 3.0
ERTH 2312 [0.5] Paleontology 3.0
ERTH 2314 [0.5] Sedimentation and Stratigraphy 3.0
ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds 3.0
ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians 3.0
ERTH 3113 [0.5] Geology of Human Origins 3.0
6. 0.5 credit from: ERTH 3203 [0.5] Sedimentology 0.5
ERTH 3206 [0.5] Sedimentary Depositional Systems 0.5
7. 1.0 credit in ERTH at the 4000-level 1.0
8. 1.0 credit from: BIOL 4905 [1.0] Honours Workshop 1.0
BIOL 4907 [1.0] Honours Essay and Research Proposal 1.0
BIOL 4908 [1.0] Honours Research Thesis 1.0
**B.Sc. Combined Honours (20.0 credits)**

**Chemistry and Earth Sciences**

### A. Credits Included in the Major CGPA (13.5 credits)

<table>
<thead>
<tr>
<th>1. 4.0 credits in:</th>
<th>4.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2501 [0.5]</td>
<td>Introduction to Inorganic and Bioinorganic Chemistry</td>
</tr>
<tr>
<td>CHEM 3100 [0.5]</td>
<td>Physical Chemistry II</td>
</tr>
<tr>
<td>CHEM 3503 [0.5]</td>
<td>Inorganic Chemistry I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. 1.0 credit in:</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. 3.0 credits in:</th>
<th>3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2104 [0.5]</td>
<td>Igneous Systems, Geochemistry and Processes</td>
</tr>
<tr>
<td>ERTH 2105 [0.5]</td>
<td>Geodynamics</td>
</tr>
<tr>
<td>ERTH 2314 [0.5]</td>
<td>Sedimentation and Stratigraphy</td>
</tr>
<tr>
<td>ERTH 2406 [0.5]</td>
<td>Geology and Map Interpretation</td>
</tr>
<tr>
<td>ERTH 2802 [0.5]</td>
<td>Field Geology I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. 0.5 credit from:</th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 3203 [0.5]</td>
<td>Sedimentology</td>
</tr>
<tr>
<td>ERTH 3206 [0.5]</td>
<td>Sedimentary Depositional Systems (See Note, below)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. 2.0 credits in:</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 3003 [0.5]</td>
<td>Geochemistry and Geochronology</td>
</tr>
</tbody>
</table>

### B. Credits Not Included in the Major CGPA (8.0 credits)

<table>
<thead>
<tr>
<th>9. 1.0 credit in:</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1007 [0.5]</td>
<td>Elementary Calculus I</td>
</tr>
<tr>
<td>MATH 1107 [0.5]</td>
<td>Linear Algebra I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10. 1.0 credit from:</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>&amp; CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>&amp; CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. 1.0 credit in:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td>&amp; PHYS 1008 [0.5]</td>
<td>Elementary University Physics II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. 0.5 credit in:</th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 2507 [0.5]</td>
<td>Introduction to Statistical Modeling I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. 0.5 credit in:</th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1005 [0.5]</td>
<td>Introduction to Computer Science I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14. 1.0 credit in:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Science Continuation courses</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. 2.0 credits in:</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. 1.0 credit in:</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>free electives</td>
<td></td>
</tr>
</tbody>
</table>

**Total Credits** 20.0

### Chemistry and Earth Sciences

The Minor is available to students registered in degree programs other than those offered by the Department of Earth Sciences.

### Minor in Earth Sciences: Earth Resources and Processes (4.0 credits)

**Requirements**

<table>
<thead>
<tr>
<th>1. 1.0 credit in:</th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. 2.5 credits from:</th>
<th>2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 2012 [0.5]</td>
<td>Planet Hollywood</td>
</tr>
</tbody>
</table>

**Note:** for Item 5 above, ERTH 3203 is required if prerequisite conditions are met.
Students admitted to B.Sc. programs by transfer from another institution must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.

2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if, upon entry to the new program, they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Biochemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 2200 [0.5]</td>
</tr>
<tr>
<td>BIOC 4001 [0.5]</td>
</tr>
<tr>
<td>BIOC 4201 [0.5]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biology</th>
</tr>
</thead>
</table>
Course Categories for B.Sc. Programs

Science Geography Courses
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth's Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography

Science Psychology Courses
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 3207 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II

Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)
FOOD (Food Science and Nutrition)
GEOM (Geomatics)
HLTH (Health Sciences)
ISAP (Interdisciplinary Science Practice)
MATH (Mathematics)
NEUR (Neuroscience)
PHYS (Physics), except PHYS 2903
Science Geography Courses (see list above)
Science Psychology Courses (see list above)
STAT (Statistics)
TSES (Technology, Society, Environment) except TSES 2305

Science Faculty Electives
Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)
BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
COMP (Computer Science) except COMP 1001
ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering
ENSC 2001

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives
Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

Prohibited Courses
The following courses are not acceptable for credit in any B.Sc. program:

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.
Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:
1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Earth Sciences: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Earth Sciences students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: EERTH 3999

Work/Study Pattern:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Pattern</td>
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Legend
- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees
- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements
B. Sc. Honours Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements
For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.
For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing
For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

B.Sc. Major Program
B.Sc. Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics. 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing
For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Earth Sciences (ERTH) Courses

ERTH 1006 [0.5 credit]
Exploring Planet Earth
Origin of the Earth, concepts of geological time, and exploration of the interaction and duration of geological processes that shape the surface to deep interior of our planet, the climate, and formation of rocks and earth resources.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 1001 (no longer offered), ERTH 1010, ERTH 2404.
Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended. This course is for students who are enrolled in the Faculty of Science.
Lectures three hours a week, a laboratory three hours a week.

ERTH 1009 [0.5 credit]
The Earth System Through Time
Origin and co-evolution of Earth and life over its 4.56 billion year history. Connections between plate tectonics, rock formation, climate and global change. Early marine life, colonization of land, mass extinctions, and the use of fossils for interpreting past ecosystems.
Includes: Experiential Learning Activity
Precludes additional credit for GEOL 1008 (no longer offered), ERTH 1011.
Prerequisite(s): This course is for students who are enrolled in the Faculty of Science.
Lectures three hours a week, a laboratory three hours a week.
ERTH 1010 [0.5 credit]
Our Dynamic Planet Earth
Origin of the Earth, concepts of geological time, and exploration of the interaction and duration of geological processes that shape the surface to deep interior of our planet, the climate, and formation of rocks and earth resources.
Precludes additional credit for ERTH 1001 (no longer offered) and ERTH 1006.
Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended. This course is for students who are not enrolled in the Faculty of Science. Lectures three hours a week.

ERTH 1011 [0.5 credit]
Evolution of the Earth
Origin and co-evolution of Earth and life over its 4.56 billion year history. Connections between plate tectonics, rock formation, climate and global change. Early marine life, colonization of land, mass extinctions and the use of fossils for interpreting past ecosystems.
Precludes additional credit for GEOL 1008 (no longer offered) and ERTH 1009.
Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended; ERTH 1010 is normally taken prior to this course. This course is for students who are not enrolled in the Faculty of Science. Lectures three hours a week.

ERTH 2004 [0.5 credit]
Maps, Satellites and the Geospatial Revolution
Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing).
Also listed as GEOM 1004.
Precludes additional credit for GEOM 2004 (no longer offered).
Lectures and laboratory, four hours per week.

ERTH 2102 [0.5 credit]
Mineralogy to Petrology
Chemical, optical and crystallographic properties of common rock-forming minerals, with introduction to common mineral assemblages of igneous, sedimentary, and metamorphic rocks.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3202 (no longer offered).
Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013) and (CHEM 1001 or CHEM 1005) and (CHEM 1002 or CHEM 1006) and (MATH 1004 or MATH 1007) and (MATH 1104 or MATH 1107).
Lectures two hours a week and laboratory three hours a week.

ERTH 2104 [0.5 credit]
Igneous Systems, Geochemistry and Processes
The sources and magmatic evolution of volcanic and plutonic rocks systems, with emphasis on geochemical, mineralogical, and textural characteristics, and relations to igneous processes.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3202 (no longer offered).
Prerequisite(s): (CHEM 1001 or CHEM 1005) and (CHEM 1002 or CHEM 1006), (MATH 1004 or MATH 1007), (MATH 1104 or MATH 1107) and ERTH 2102.
Lectures three hours a week, laboratory three hours a week and a field excursion.

ERTH 2105 [0.5 credit]
Geodynamics
The structure, composition, and rheological properties of the Earth: lithosphere, mantle and core. Plate tectonics and its relation to geophysical fields, driving mechanisms, and processes at plate boundaries and in plate interiors.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3805 (no longer offered).
Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).
Lectures two hours a week and a laboratory three hours a week.

ERTH 2312 [0.5 credit]
Paleontology
Introduction to macrofossil and microfossil groups, their paleoenvironmental significance, and principles of evolutionary paleoecology.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 2316, GEOL 2301 (no longer offered) and GEOL 2306 (no longer offered).
Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).
Lectures two hours a week and a laboratory three hours a week.
ERTH 2314 [0.5 credit]
Sedimentation and Stratigraphy
Origin of sediments and their transport, distribution, and primary structures; processes of sediment-to-rock transformation; spatial patterns; controls of stratigraphy; methods of correlation.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 2318.
Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).
Lectures three hours a week and a laboratory three hours a week.

ERTH 2316 [0.5 credit]
Paleoecology
Introduction to macrofossil and microfossil groups, their paleoenvironmental significance, and principles of evolutionary paleoecology.
Precludes additional credit for ERTH 2312. Not available for credit in B.Sc. Earth Sciences programs.
Prerequisite(s): ERTH 1006 and ERTH 1009. Priority given to students in the Minor in Earth Sciences.
Lectures two hours a week.

ERTH 2318 [0.5 credit]
Sedimentology
Origin of sediments and their transport, distribution, and primary structures; processes of sediment-to-rock transformation; spatial patterns; controls of stratigraphy and methods of correlation.
Precludes additional credit for ERTH 2314. Not available for credit in B.Sc. Earth Sciences programs.
Prerequisite(s): ERTH 1006 and ERTH 1009. Priority given to students in the Minor in Earth Sciences.
Lectures three hours a week.

ERTH 2401 [0.5 credit]
Dinosaurs
A general introduction to dinosaurs, their place in evolution, their social behaviour, the Mesozoic landscape and extinction theories.
Lectures three hours a week.

ERTH 2402 [0.5 credit]
Climate Change: An Earth Sciences Perspective
An exploration of the often dramatic climate changes that have occurred through earth history from a geological perspective, emphasizing the history of earth climates, geological causes of climate change and impact that rapid climate change has had on the biosphere.
Lectures three hours a week.

ERTH 2403 [0.5 credit]
Introduction to Oceanography
An environmental approach to understanding the oceans; introducing the physical and biological aspects of oceanography, marine resources and marine pollution.
Precludes additional credit for ERTH 3206.
Lectures three hours per week.

ERTH 2406 [0.5 credit]
Geology and Map Interpretation
Analysis and interpretation of geological features and processes using rocks, maps and cross sections. Introduction to computational methods.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2102 and ERTH 2004.
Lectures two hours a week and a laboratory three hours a week.

ERTH 2415 [0.5 credit]
Natural Disasters
Physical characteristics and causes of natural disasters of geological origin such as volcanic eruptions, earthquakes, tsunami, landslides, hurricanes and meteor impacts. Discussion on historical perspective, societal impact and mitigation strategies. Emphasis on Canadian case histories.
Precludes additional credit for ERTH 1003 (no longer offered).
Prerequisite(s): second-year standing in any degree program. With the exception of the Minor in Earth Sciences, available as a free elective only in any B.Sc. program, including Earth Sciences.
Lectures three hours a week.

ERTH 2419 [0.5 credit]
On the Origin of Planets
Origin and evolution of all planetary objects in the solar system. Topics include the geology of comets, asteroids, the terrestrial planets and rocky moons, Earth’s formation and early evolution, ocean worlds, the search for exoplanets and detection of extraterrestrial life.
Lectures three hours a week.

ERTH 2802 [0.5 credit]
Field Geology I
Field analysis using geological, geophysical and computational methods leading to the interpretation of the origins of geological features and processes.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2406 and permission of the department.
Field work for two weeks off campus. A supplementary fee will apply.
ERTH 3002 [0.5 credit]
Gemology
Gemstones including their physical and chemical properties, geological formation and geographic occurrence. Introduction to gemological laboratory methods.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2102.
Lectures two hours a week and laboratory two hours a week.

ERTH 3003 [0.5 credit]
Geochemistry and Geochronology
Geochemical composition of reservoirs from the deep Earth to surface environments. Use of geochemistry and isotope geochemistry to track geological processes. Introduction to a variety of scientific dating methods (geochronology).
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 2101 (no longer offered).
Prerequisite(s): ERTH 2102, ERTH 2104 and ERTH 2105.
Lecture three hours a week and a laboratory two hours a week.

ERTH 3111 [0.5 credit]
Vertebrate Evolution: Mammals, Reptiles, and Birds
Evolution of mammals, reptiles and birds. Emphasis on surveying amniote diversity, and the origin of key amniote transformations, as evidenced by the fossil record.
Includes: Experiential Learning Activity
Also listed as BIOL 3111.
Prerequisite(s): ERTH 1009 or BIOL 2001, or permission of the department.
Lectures two hours a week and a laboratory three hours a week.

ERTH 3112 [0.5 credit]
Vertebrate Evolution: Fish and Amphibians
Evolution of fish and amphibians. Emphasis on surveying fish and amphibian diversity, and the origin of key transformations of these groups, as evidenced by the fossil record.
Includes: Experiential Learning Activity
Also listed as BIOL 3112.
Prerequisite(s): ERTH 1009 or BIOL 2001, or permission of the department.
Lectures two hours a week and a laboratory three hours a week.

ERTH 3113 [0.5 credit]
Geology of Human Origins
The origin and evolution of our species from geological, biological and cultural perspectives. The course traces human ancestry from our primate roots through time and changing environments, and explores controversies, frauds, and misperceptions.
Prerequisite(s): any 1000 or 2000 level Earth Sciences or Biology course.
Lectures three hours per week.

ERTH 3203 [0.5 credit]
Sedimentology
A 10-day field study of modern and ancient sedimentary and ecological systems and their stratigraphy in a geological region outside of the Ottawa area. Subsequent in-class seminars examine significant changes in sedimentary environments through Earth's history. A supplementary fee will apply.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3201 (no longer offered).
Prerequisite(s): ERTH 2314, enrolment in one of the ERTH Honours, Combined Honours or Major programs, a 2000-level CGPA of 8.0 and permission of the Department.
Ten-day off-campus field course.

ERTH 3204 [0.5 credit]
Mineral Deposits
Analysis and interpretation of the geological and geochemical processes responsible for mineral deposit genesis in a global context.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2104.
Lectures and laboratory five hours a week.

ERTH 3205 [0.5 credit]
Physical Hydrogeology
Principles of deep- to shallow fluid flow within the Earth's crust, and introduction to the exploration, development and management of groundwater as a global resource.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).
Lecture three hours a week and a laboratory three hours a week.

ERTH 3206 [0.5 credit]
Sedimentary Depositional Systems
Application of sedimentary facies in class and local field-based settings to interpret modern and ancient depositional environments and stratigraphic succession related to climatic and oceanographic influences. Subsequent in-class seminars examine significant changes in sedimentary environments through Earth's history.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3208 (no longer offered).
Prerequisite(s): ERTH 2314.
Field and class based instruction, 6 hours a week.

ERTH 3207 [0.5 credit]
Metamorphic Petrology and Processes
Genesis of metamorphic rocks as determined from field, petrographic and geochemical data.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3202 (no longer offered).
Prerequisite(s): ERTH 2104.
Lectures two hours a week, a laboratory three hours a week and a field excursion.
ERTH 3405 [0.5 credit]
Geophysical Methods
An introduction to the tools of applied geophysics including seismology, electrical, magnetic, and gravitational surveying methods.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2105.
Lecture two hours a week and a laboratory three hours a week.

ERTH 3806 [0.5 credit]
Structural Geology
Structures and deformational processes in a variety of crustal settings. Applications to geological engineering and mineral and petroleum exploration.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2105 and ERTH 2406.
Lecture two hours a week and a laboratory three hours a week.

ERTH 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ERTH 4003 [0.5 credit]
Directed Studies in Geology
One or more projects involving at least 15 days field and/or laboratory research, not related to thesis research. Assessment based on written reports and an oral presentation. Expenses for long-distance travel are borne by the student.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in any B.Sc. Hons. or Combined Hons. program in Earth Sciences.
Schedule to be arranged.

ERTH 4004 [0.5 credit]
Special Topics in Earth Sciences
Field, laboratory or literature research, not related to thesis research. Assessment based on written reports and an oral presentation. Expenses for travel are borne by the student.
Prerequisite(s): fourth-year standing in any B.Sc. Hons. or Combined Hons. program in Earth Sciences. Major CGPA 8.5 or higher at time of registration for the course.
Schedule to be arranged.

ERTH 4005 [0.5 credit]
Micropaleontology
Paleoecological and biostratigraphic significance, and evolutionary history of marine and freshwater microorganisms.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2312.
Lectures, seminars and/or laboratory five hours a week.

ERTH 4006 [0.5 credit]
Geobiology
Exploration of the relationship between micro- and macro-evolutionary processes and the Earth's physical and chemical environment. Paleobiology and evolutionary ecology in the context of paleoceanography, paleolimnology and paleoclimatology. May include one or two weeks of field based instruction with costs borne by the student.
Prerequisite(s): ERTH 2312.
Field excursions in addition to lectures or seminars three hours a week.

ERTH 4007 [0.5 credit]
Evolutionary Developmental Paleobiology
This course explores the mechanistic basis of organismic evolution from genetic, morphogenetic and epigenetic perspectives, within a phylogenetic context of living and extinct vertebrates.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2312 or BIOL 2001, and BIOL 2104.
Lectures or seminars three hours per week.

ERTH 4107 [0.5 credit]
Geotechnical Mechanics
Includes: Experiential Learning Activity
Also listed as CIVE 3208.
Prerequisite(s): ERTH 2406 and ERTH 3405.
Lectures three hours a week, laboratory three hours alternate weeks.

ERTH 4206 [0.5 credit]
Contaminant and Remediation Hydrogeology
Geochemical and physical processes controlling contaminant release, migration, and fate in groundwater along with the processes and techniques used for contaminant mitigation and remediation. Examples will include organic and inorganic contaminants in a variety of settings.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3003 and ERTH 3205.
Lectures and seminars three hours per week.
ERTH 4209 [0.5 credit]  
**Mineral Exploration Field Geology**  
Introduction to the essentials of conducting geological mapping campaign in the Canadian Shield in a field area that has seen considerable industry exploration for volcanogenic massive sulfide mineralization. Activities include outcrop and trench mapping, strain analysis, interpretation of geophysical data, drilling proposals, report writing.  
Includes: Experiential Learning Activity  
Precludes additional credit for ERTH 3209.  
Prerequisite(s): ERTH 2104, ERTH 3207, ERTH 3806.  
Field work for two weeks off-campus. A supplementary fee will apply.  

ERTH 4303 [0.5 credit]  
**Resources of a Finite Earth**  
Earth's resources: where they occur, how they are concentrated, how they are extracted and used, how human exploitation of natural resources affects the environment, and the limits to growth imposed by finite supplies of natural resources.  
Prerequisite(s): third-year standing in any degree program.  
Lectures three hours a week.  

ERTH 4305 [0.5 credit]  
**Carbonate Sedimentology**  
The origin, composition and diagenesis of carbonate rocks. Study of modern and ancient platform systems; development of facies models; petrographic and geochemical analysis of limestones and dolostones.  
Includes: Experiential Learning Activity  
Prerequisite(s): ERTH 3203 or ERTH 3206.  
Lecture two hours a week and a laboratory three hours a week.  

ERTH 4306 [0.5 credit]  
**Resource Basin Analysis**  
Surface and subsurface geological and geophysical techniques used to define the distribution and origin of geological basins, the architecture of basin fill, and characterize the distribution of water, petroleum and mineral resources.  
Includes: Experiential Learning Activity  
Prerequisite(s): ERTH 3203 or ERTH 3206, ERTH 3205, and ERTH 3806.  
Lectures, seminars and laboratory five hours a week.  

ERTH 4402 [0.5 credit]  
**Structural Geology**  
A study of the structural evolution of mountain belts, with emphasis on field methods.  
Includes: Experiential Learning Activity  
Prerequisite(s): ERTH 3806.  
Lectures, seminars and laboratory five hours a week.  

ERTH 4403 [0.5 credit]  
**Tectonic Evolution of Canada**  
Geologic evolution of Canada focusing on geological styles and tectonic processes of Archean cratons, Proterozoic and Phanerozoic orogenic belts.  
Prerequisite(s): ERTH 3806.  
Lectures and seminars three hours a week.  

ERTH 4504 [0.5 credit]  
**Advanced Igneous Petrology**  
Volcanology, petrology, mineralogy and geochemistry of igneous rocks and their tectonic setting. May include one to two weeks of field-based instruction with costs borne by the student.  
Includes: Experiential Learning Activity  
Prerequisite(s): ERTH 3003.  
Field excursions in addition to lectures or seminars three hours per week.  

ERTH 4507 [0.5 credit]  
**Advanced Metamorphic Petrology**  
Introduction to the quantitative analysis of pressure-temperature-time trajectories and rock-forming processes during metamorphic petrogenesis; may include one or two weeks of field-based instruction, with costs borne by the student.  
Includes: Experiential Learning Activity  
Prerequisite(s): ERTH 2802 and ERTH 3207.  
Field excursions, lectures, or seminars three hours per week.  

ERTH 4707 [0.5 credit]  
**Engineering Seismology**  
Prerequisite(s): (MATH 1004 or MATH 1007), (MATH 1104 or MATH 1107), STAT 2507 and ERTH 3405 or permission of the department.  
Also offered at the graduate level, with different requirements, as ERTH 5707, for which additional credit is precluded.  
Lectures three hours a week.  

ERTH 4801 [0.5 credit]  
**Physics of the Earth**  
The physical properties of the solid Earth. Gravitational, magnetic and palaeomagnetic fields; seismology and earthquake occurrence; heat flow and thermal history. Geodynamic processes.  
Prerequisite(s): ERTH 3405 and ERTH 3806.  
Also offered at the graduate level, with different requirements, as ERTH 5701, for which additional credit is precluded.  
Lectures three hours a week.
ERTH 4803 [0.5 credit]
Radiogenic Isotope Geology
Use of radiogenic isotope systems to understand the differentiation history and evolution of large-scale isotopic reservoirs. Data, models and interpretations behind our present day knowledge and understanding of the Earth's history. Assessment of geochronological results and interpretations.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3003.
Also offered at the graduate level, with different requirements, as ERTH 5609, for which additional credit is precluded.
Lectures, seminars or laboratories three hours per week.

ERTH 4804 [0.5 credit]
Exploration Geophysics
Application of geophysical methods to explore for petroleum and mineral resources, with emphasis on seismic and electromagnetic methods. Case histories illustrate the concepts.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3405.
Lectures and laboratories five hours per week.

ERTH 4807 [0.5 credit]
Field Geology II
Field camp integrating advanced field, theory and experimental data. Assessment is based on reports, seminars, and oral examinations. Part of the cost is borne by the student. Departmental funding assistance is available for only one 4000-level field course per student.
Includes: Experiential Learning Activity
Prerequisite(s): completion of the third-year Earth Sciences course requirements and permission of the Department. A supplementary fee will apply.
Field work off campus.

ERTH 4808 [0.5 credit]
Vertebrate Paleontology Field Camp
Field camp extends the student's vertebrate paleontological knowledge by integrating field, theory, and experimental data. Assessment based on written reports and seminars. Part of the cost is borne by the student. Departmental funding assistance is available for only one 4000-level field course per student.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3111 or ERTH 3112, and ERTH 3113. A Major CGPA of 8.5 or higher and permission of the department is required at the time of registration.
Field work for two weeks off campus. A supplementary fee will apply.

ERTH 4815 [0.5 credit]
Natural Hazards in Canada
Overview of the main natural hazards (such as floods, landslides, forest fires, earthquakes) and severe weather phenomena (such as ice storms, hail, tornadoes) in the Canadian environment. Risk of catastrophic events and their impact on society and infrastructure.
Prerequisite(s): third-year standing in earth science programs or permission of the department.
Also offered at the graduate level, with different requirements, as ERTH 5215 and IPIS 5505, for which additional credit is precluded.
Lectures three hours a week.

ERTH 4820 [0.5 credit]
Research Methods in Earth Sciences
Research approaches, methodologies and resources in Earth Sciences; analytical methods in Earth Sciences; data acquisition, evaluation and interpretation; principles and strategies of scientific and professional writing; and communication of results.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Earth Sciences programs.
Lectures, seminars, or laboratories three hours a week. May also include visits to other research institutes or workshops with visiting instructors.

ERTH 4908 [1.0 credit]
Honours Thesis
Independent studies. Requires prior written approval of a topic from a supervisor and the course co-ordinator. Oral and written proposal, progress and defence reports are required.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 4909, ERTH 4910.
Prerequisite(s): restricted to B.Sc. Honours and Combined Honours ERTH programs. Major CGPA 8.5 or higher at time of registration for the course.

ERTH 4909 [0.5 credit]
Research in Earth Sciences
Understanding research methods, data interpretation and presentation, through readings, seminars and-or laboratory projects related to a topic selected by the student with approval of a faculty advisor.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 4908, ERTH 4910.
Prerequisite(s): restricted to B.Sc. Honours and Combined Honours Earth Sciences programs.
Economics Program Requirements

This section presents the requirements for programs in:

- Economics B.Econ. Honours
- Economics B.Econ. Honours with Concentration
- Economics B. Econ. Honours with Concentrations
- Concentration in Computational Analysis
- Concentration in Development
- Concentration in Economic Data Science
- Concentration in Economic Theory
- Concentration in Financial Economics
- Concentration in International Political Economy
- Concentration in Natural Resources, Environment, and Economy
- Concentration in Mathematics and Quantitative Economics
- Economics B.Econ. Combined Honours
- Economics B.A. Honours Combined
- Economics B.Econ.
- Specialization in International Economic Policy B.G.In.S. Honours
- Stream in International Economic Policy B.G.In.S.
- Minor in Economics
- Minor in Industrial Economics
- Post-Baccalaureate Diploma in Economics

Program Requirements

Economics

B.Econ. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

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<tbody>
<tr>
<td>ECON 1001</td>
<td>Introduction to Microeconomics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 1002</td>
<td>Introduction to Macroeconomics &amp; ECON 1002 [0.5]</td>
<td>0.5</td>
</tr>
<tr>
<td>FYSM 1003</td>
<td>Elementary Mathematics for Economics I</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 1401</td>
<td>Elementary Mathematics for Economics I</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 1402</td>
<td>Elementary Mathematics for Economics II</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 2020</td>
<td>Intermediate Microeconomics I: Producers and Market Structure</td>
<td>0.5</td>
</tr>
</tbody>
</table>

B. Credits Not Included in the Major CGPA (9.5 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 4905</td>
<td>Honours Capstone Seminar (see Note 1 below)</td>
<td>1.0</td>
</tr>
<tr>
<td>ECON 4908</td>
<td>Honours Essay</td>
<td>1.0</td>
</tr>
<tr>
<td>ECON 3900</td>
<td>Research Methods in Economics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 3920</td>
<td>Professional Practice of Economics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 4903</td>
<td>Honours Capstone Seminar (see Note 1 below)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Total Credits 20.0

Note: ECON 4908 [1.0] Honours Essay may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace the ECON 4905 requirement together with an ECON elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay guidelines maintained by the Department for further details.

Economics

B.Econ. Honours with Concentration (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 1001</td>
<td>Introduction to Microeconomics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 1002</td>
<td>Introduction to Macroeconomics &amp; ECON 1002 [0.5]</td>
<td>0.5</td>
</tr>
<tr>
<td>FYSM 1003</td>
<td>Elementary Mathematics for Economics I</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 1401</td>
<td>Elementary Mathematics for Economics I</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 1402</td>
<td>Elementary Mathematics for Economics II</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 2020</td>
<td>Intermediate Microeconomics I: Producers and Market Structure</td>
<td>0.5</td>
</tr>
</tbody>
</table>

B. Credits Not Included in the Major CGPA (9.5 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 4905</td>
<td>Honours Capstone Seminar (see Note 1 below)</td>
<td>1.0</td>
</tr>
<tr>
<td>ECON 4908</td>
<td>Honours Essay</td>
<td>1.0</td>
</tr>
<tr>
<td>ECON 3900</td>
<td>Research Methods in Economics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 3920</td>
<td>Professional Practice of Economics</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Total Credits 20.0

Note: ECON 4908 [1.0] Honours Essay may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace the ECON 4905 requirement together with an ECON elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay guidelines maintained by the Department for further details.

ERTH 4910 [1.0 credit]
Honours Thesis in Resource Evaluation

Independent studies: Analysis and interpretation of geological, environmental and/or financial data to determine economic value of a natural resource, and its viability for sustainable development. Requires approval of the supervisor and course coordinator. Oral and written proposal, progress and defense reports are required. Includes: Experiential Learning Activity Precludes additional credit for ERTL 4908 and ERTL 4909.

Prerequisite(s): Restricted to B.Sc. Honours in Earth Sciences with Concentration in Finance: Resource Valuation. Major CGPA 8.5 or higher at time of registration.

ERTH 4909.

Includes: Experiential Learning Activity proposal, progress and defense reports are required. Oral and written viability for sustainable development. Requires approval to determine economic value of a natural resource, and its geological, environmental and/or financial data to

Independent studies: Analysis and interpretation of geological, environmental and/or financial data to determine economic value of a natural resource, and its viability for sustainable development. Requires approval of the supervisor and course coordinator. Oral and written proposal, progress and defense reports are required. Includes: Experiential Learning Activity Precludes additional credit for ERTL 4908 and ERTL 4909.

Prerequisite(s): Restricted to B.Sc. Honours in Earth Sciences with Concentration in Finance: Resource Valuation. Major CGPA 8.5 or higher at time of registration.

ERTH 4909.

Includes: Experiential Learning Activity proposal, progress and defense reports are required. Oral and written viability for sustainable development. Requires approval to determine economic value of a natural resource, and its geological, environmental and/or financial data to
4. 1.0 credit in ECON at the 4000 level 1.0

B. Credits Not Included in the Major CGPA (7.5 credits)

5. 4.0 credits in electives not in ECON 4.0
6. 3.5 credits in free electives 3.5

Total Credits 20.0

Note:
An Honours essay, ECON 4908 [1.0], may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace both the ECON 4905 requirement and a 0.5-credit 4000 level ECON elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay Guidelines maintained by the Department for further details.

Economics
B. Econ. Honours
with Concentrations (20.0 credits)

A. Credits Included in the Major CGPA (14.5 credits)

1. 6.5 credits in:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 1001 [0.5]</td>
<td>Introduction to Microeconomics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 1002 [0.5]</td>
<td>Introduction to Macroeconomics</td>
<td>0.5</td>
</tr>
<tr>
<td>or FYSM 1003 [1]</td>
<td>Introduction to Economics</td>
<td>1.0</td>
</tr>
<tr>
<td>ECON 1401/MATH</td>
<td>Elementary Mathematics for Economics I</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 1402/MATH</td>
<td>Elementary Mathematics for Economics II</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 2020 [0.5]</td>
<td>Intermediate Microeconomics: Producers and Market Structure</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 2030 [0.5]</td>
<td>Intermediate Microeconomics: Consumers and General Equilibrium</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 2102 [0.5]</td>
<td>Intermediate Macroeconomics I</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 2103 [0.5]</td>
<td>Intermediate Macroeconomics II</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 2210 [0.5]</td>
<td>Introductory Statistics for Economics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 2220 [0.5]</td>
<td>Introductory Econometrics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 3900 [0.5]</td>
<td>Research Methods in Economics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 3920 [0.5]</td>
<td>Professional Practice of Economics</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 4905 [0.5]</td>
<td>Honours Capstone Seminar (see Note below)</td>
<td>0.5</td>
</tr>
</tbody>
</table>

2. Two of the concentrations described below, also included in the Major CGPA 8.0

B. Credits Not Included in the Major CGPA (5.5 credits)

3. 3.0 credits in electives not in ECON 3.0
4. 2.5 credits in free electives 2.5

Total Credits 20.0

Note: an Honours essay, ECON 4908 [1.0], may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace both the ECON 4905 requirement and a 0.5 credit free elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay Guidelines maintained by the Department for further details.

Concentration in Computational Analysis (4.0 credits)

2a. 1.0 credit in:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1005 [0.5]</td>
<td>Introduction to Computer Science I</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 1006 [0.5]</td>
<td>Introduction to Computer Science II</td>
<td>0.5</td>
</tr>
</tbody>
</table>

(See Note 1 below)

2b. 2.0 credits in:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 2401 [0.5]</td>
<td>Introduction to Systems Programming</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 2402 [0.5]</td>
<td>Abstract Data Types and Algorithms</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 1805 [0.5]</td>
<td>Discrete Structures I (see Note 2 below)</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 2804 [0.5]</td>
<td>Discrete Structures II</td>
<td>0.5</td>
</tr>
</tbody>
</table>

2c. 1.0 credit from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 2404 [0.5]</td>
<td>Introduction to Software Engineering</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 3005 [0.5]</td>
<td>Database Management Systems</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 4111 [0.5]</td>
<td>Data Management for Business Intelligence</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 4003 [0.5]</td>
<td>Transaction Processing Systems</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 3803 [0.5]</td>
<td>Introduction to Theory of Computation</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 3804 [0.5]</td>
<td>Design and Analysis of Algorithms I</td>
<td>0.5</td>
</tr>
<tr>
<td>COMP 3801 [0.5]</td>
<td>Algorithms for Modern Data Sets</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Total Credits 4.0

Notes:
1. For Item 2a of the Concentration in Computational Analysis, COMP 1405 may replace COMP 1005 and COMP 1406 may replace COMP 1006.
2. COMP 1805 in the Concentration in Computational Analysis is not required if precluded course MATH 1800 is required by another component of the student’s program, such as the Concentration in Mathematics and Quantitative Economics, in which case an additional 0.5 credit in COMP is required from the list of electives in Item 2c.

Concentration in Development (4.0 credits)

2a. 3.0 credits in:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 3508 [0.5]</td>
<td>Introduction to Economic Development</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 3509 [0.5]</td>
<td>Development Planning and Project Evaluation</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 4507 [0.5]</td>
<td>The Economics of Development</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 4508 [0.5]</td>
<td>International Aspects of Economic Development</td>
<td>0.5</td>
</tr>
<tr>
<td>PSCI 2102 [0.5]</td>
<td>Comparative Politics of the Global South</td>
<td>0.5</td>
</tr>
<tr>
<td>PSCI 4104 [0.5]</td>
<td>Development in the Global South - Theory and Practice</td>
<td>0.5</td>
</tr>
</tbody>
</table>

2b. 1.0 credit from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 3220 [0.5]</td>
<td>Canadian Economic History</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 3230 [0.5]</td>
<td>Selected Topics in Economic History</td>
<td>0.5</td>
</tr>
<tr>
<td>ECON 3510 [0.5]</td>
<td>African Economic Development</td>
<td>0.5</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>------------</td>
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</tr>
<tr>
<td>ECON 3808</td>
<td>The Economics of Transition</td>
<td>[0.5]</td>
</tr>
<tr>
<td>ECON 3870</td>
<td>Comparative Economic Systems</td>
<td>[0.5]</td>
</tr>
<tr>
<td>PSCI 4105</td>
<td>Selected Problems in Development in the Global South</td>
<td>[0.5]</td>
</tr>
<tr>
<td>PSCI 4409</td>
<td>Issues in Development Management</td>
<td>[0.5]</td>
</tr>
</tbody>
</table>

**Total Credits: 4.0**

### Concentration in Economic Data Science (4.0 credits)

2a. 1.5 credits in:  
- BUSI 2400 [0.5] Foundations of Information Systems  
- COMC 1005 [0.5] Introduction to Computer Science I  
- ECON 2708 [0.5] Applied Data Analysis  

2b. 2.0 credits in:  
- ECON 4002 [0.5] Statistical Analysis in Economics  
- ECON 4706 [0.5] Econometrics I  
- ECON 4708 [0.5] Economic Data Science - Analytics  
- ECON 4709 [0.5] Economic Data Science - Applications  

2c. 0.5 credit from:  
- BUSI 4406 [0.5] Business Analytics  
- BUSI 4408 [0.5] Social Analytics  
- ECON 4707 [0.5] Econometrics II  
- ECON 4713 [0.5] Time-Series Econometrics  
- ECON 4880 [0.5] Special Topics in Economics  

**Total Credits: 4.0**

### Concentration in Economic Theory (4.0 credits)

2a. 3.0 credits in: Core Theory  
- ECON 3001 [0.5] Mathematical Methods of Economics  
- ECON 4001 [0.5] Mathematical Analysis in Economics  
- ECON 4002 [0.5] Statistical Analysis in Economics  
- ECON 4020 [0.5] Advanced Microeconomic Theory  
- ECON 4021 [0.5] Advanced Macroeconomic Theory  
- ECON 4706 [0.5] Econometrics I  

2b. 1.0 credit in:  
- ECON at the 4000 level  

**Total Credits: 4.0**

### Concentration in Financial Economics (4.0 credits)

2a. 1.0 credit in:  
- BUSI 1001 [0.5] Principles of Financial Accounting  
- BUSI 1002 [0.5] Management Accounting  
  (See Note 1 below)  

2b. 1.5 credits from:  
- ECON 3050 [0.5] Introduction to Financial Economics  
- ECON 4051 [0.5] Financial Asset Pricing  
- ECON 4052 [0.5] Corporate Financial Economics  
- BUSI 3500 [0.5] Applied Corporate Finance  
- BUSI 3502 [0.5] Investments  
- BUSI 3512 [0.5] Derivatives  
  (see Note 2, below)  

2c. 1.5 credits from:  
- ECON 3602 [0.5] International Monetary Problems  
  or ECON 4602 [0.5] International Monetary Theory and Policy  
- ECON 3607 [0.5] Monetary and Financial Institutions  
- ECON 4053 [0.5] Financial Market Institutions  
- ECON 4056 [0.5] Insurance Economics  
- ECON 4057 [0.5] Behavioural Financial Economics  
- PSCI 4805 [0.5] Political Economy of Global Money and Finance  
- BUSI 2504 [0.5] & BUSI 2505 [0.5] and one of:  
  - BUSI 4500 [0.5]  
  - BUSI 4502 [0.5] (see Note 3, below)  

**Total Credits: 4.0**

**Notes**

1. For Item 2a of the Concentration in Financial Economics, BUSI 1004 [0.5] may replace BUSI 1001 [0.5] and BUSI 1005 [0.5] may replace BUSI 1002 [0.5].

2. For Item 2b of the Concentration in Financial Economics, students taking BUSI 3500 [0.5], BUSI 3502 [0.5] and BUSI 3512 [0.5] must meet all required prerequisites for these courses as stated in the Undergraduate Calendar description at the time of registration.

3. For Item 2c of the Concentration in Financial Economics, BUSI 2504 [0.5] and BUSI 2505 [0.5] may not count for credit inside the major without also including either BUSI 4500 [0.5] or BUSI 4502 [0.5].
### Concentration in Mathematics and Quantitative Economics (4.0 credits)

2a. 3.0 credits in:
- ECON 3803 [0.5] The Economics of Natural Resources
- ECON 3804 [0.5] Environmental Economics
- GEOG 2200 [0.5] Global Connections
- GEOG 2300 [0.5] Space, Place and Culture
- GEOG 3022 [0.5] Environmental and Natural Resources
- PSCI 3801 [0.5] Environmental Politics

2b. 0.5 credit from:
- ECON 4407 [0.5] Project Evaluation
- GEOG 4004 [0.5] Environmental Impact Assessment
- TSES 4001 [0.5] Technology and Society: Risk

2c. 0.5 credit from:
- ERTH 4303 [0.5] Resources of a Finite Earth
- GEOG 3209 [0.5] Sustainability and Environment in the South
- GEOG 4022 [0.5] Seminar in People, Resources and Environmental Change
- PSCI 4808 [0.5] Global Environmental Politics
- TSES 3002 [0.5] Energy and Sustainability

### Concentration in Natural Resources, Environment, and Economy (4.0 credits)

2a. 3.0 credits in:
- ECON 1401 [0.5] Environmental Economics
- ECON 1402 [0.5] Global Connections
- GEOG 3022 [0.5] Environmental and Natural Resources
- PSCI 3801 [0.5] Environmental Politics

2b. 0.5 credit from:
- ECON 4407 [0.5] Project Evaluation
- GEOG 4004 [0.5] Environmental Impact Assessment
- TSES 4001 [0.5] Technology and Society: Risk

2c. 0.5 credit from:
- ERTH 4303 [0.5] Resources of a Finite Earth
- GEOG 3209 [0.5] Sustainability and Environment in the South
- GEOG 4022 [0.5] Seminar in People, Resources and Environmental Change
- PSCI 4808 [0.5] Global Environmental Politics
- TSES 3002 [0.5] Energy and Sustainability

### Notes:
1. Students enrolled in the Concentration in Mathematics and Quantitative Economics must replace ECON 1401 [0.5] and ECON 1402 [0.5] in Item 1 of the B.Econ. Honours with Concentration(s) program requirements with either (i) MATH 1052 [0.5] and MATH 1152 [0.5], or (ii) MATH 1007 [0.5] and MATH 1107 [0.5]. Students who intend to take MATH 2000 [1.0] are strongly recommended to choose option (i). Please note that MATH 2000 is a prerequisite to upper year MATH courses such as MATH 3001 [0.5].

2. Students who have completed MATH 1004 [0.5] and MATH 1104 [0.5] can replace ECON 1401 [0.5] and ECON 1402 [0.5] in Item 1 of the B.Econ. Honours with Concentration(s) program requirements.

3. MATH 2007 [0.5] may replace MATH 2052 [0.5]. Students who intend to take MATH 2000 [1.0] are strongly recommended to take MATH 2052 [0.5].

4. MATH 2107 Linear Algebra II may replace MATH 2152 [0.5]. Students who intend to take MATH 2000 [1.0] are strongly recommended to take MATH 2152 [0.5].

5. MATH 2008 [0.5] may replace MATH 2052 [0.5]. In this case, the credit requirement under Item 2b will be reduced from 1.0 credit to 0.5 credit, and the credit requirement under Item 2c will be increased from 1.0 credit to 1.5 credit.

6. Students interested in other 3000 level MATH courses not listed under requirement 2c, may seek permission from the Department of Economics to have these courses count towards this requirement.

7. Students interested in other 4000 level MATH courses not listed under requirement 2d, may seek permission from the Department of Economics to have these courses count towards this requirement.

### Economics

#### B.Econ. Combined Honours (20.0 credits)

Students admitted to the Bachelor of Economics may register for a Combined Bachelor of Economics and any other discipline in which a B.A. Combined program is available.

#### A. Credits Included in the Economics Major CGPA (7.5 credits)

1. **6.5 credits in:**
   - ECON 1001 [0.5] Introduction to Microeconomics
   - ECON 1002 [0.5] Introduction to Macroeconomics
   - ECON 1401/MATH 1200 [0.5] Elementary Mathematics for Economics I
   - ECON 1402/MATH 1205 [0.5] Elementary Mathematics for Economics II
   - ECON 4005 [0.5] Operations Research II
   - ECON 4700 [0.5] Measurement Economics
   - MATH 4007 [0.5] Measure and Integration Theory (Honours)
   - MATH 4205 [0.5] Introduction to General Topology (Honours)

   **Total Credits:** 4.0
ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure
ECON 2030 [0.5] Intermediate Microeconomics II: Consumers and General Equilibrium
ECON 2102 [0.5] Intermediate Macroeconomics I
ECON 2103 [0.5] Intermediate Macroeconomics II
ECON 2210 [0.5] Introductory Statistics for Economics
ECON 2220 [0.5] Introductory Econometrics
ECON 3900 [0.5] Research Methods in Economics
ECON 3920 [0.5] Professional Practice of Economics
ECON 4905 [0.5] Honours Capstone Seminar (see Note 1 below)

2. 1.0 credit in ECON at the 3000 or 4000 level 1.0

B. Additional Requirements (12.5 credits) 12.5

3. The requirements for Combined Honours in the other discipline must be satisfied

4. Sufficient credits in free electives to make 20.0 credits for the degree.

Total Credits 20.0

Note: ECON 4908 [1.0] Honours Essay, may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace the ECON 4905 requirement together with an ECON elective requirement. Qualified students who choose to pursue the Honours essay stream must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay guidelines maintained by the Department for further details.

Economics

B.A. Honours Combined (20.0 credits)

Students already enrolled in a B.A. discipline may add Economics as an additional discipline under the B.A. Combined Honours. Economics course requirements for the B.A. Combined Honours are the same as those listed under the B.Econ. Combined Honours, above.

Economics

B.Econ. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 3.5 credits in: 3.5
   - ECON 1001 [0.5] Introduction to Microeconomics
   - ECON 1002 [0.5] Introduction to Macroeconomics
   - FYSM 1003 [1.0] Introduction to Economics
   - ECON 1401/MATH 1401 Elementary Mathematics for Economics I
   - ECON 1402/MATH 1402 Elementary Mathematics for Economics II
   - ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure
   - ECON 2102 [0.5] Intermediate Macroeconomics I
   - ECON 2210 [0.5] Introductory Statistics for Economics

2. 3.5 credits in ECON at the 2000 level or higher 3.5

3. 6.0 credits in electives not in ECON 6.0

4. 2.0 credits in free electives. 2.0

Total Credits 15.0

Specialization in International Economic Policy

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credits in: International Experience Requirement Preparation
   - GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization 7.5
   a. 1.0 credit in: Foundations 1.0
      - ECON 1001 [0.5] Introduction to Microeconomics
      - FYSM 1003 [1.0] Introduction to Economics
   b. 0.5 credit in: Microeconomics 0.5
      - ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors
      - ECON 2009 [0.5] Managerial Economics
      or
      - ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure
   c. 0.5 credit in: Macroeconomics 0.5
      - ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors
      - ECON 2102 [0.5] Intermediate Macroeconomics I
   d. 0.5 credit in: Research Methodologies 0.5
      - IPAF 2000 [0.5] Quantitative Approaches to Policy Analysis
      or
      - ECON 2210 [0.5] Introductory Statistics for Economics
   e. 2.0 credits in: International and Public Economics 2.0
      - ECON 3403 [0.5] Introduction to Public Economics: Expenditures
      - ECON 3405 [0.5] Introduction to Public Economics: Taxation
      - ECON 3601 [0.5] Introduction to International Trade
      - ECON 3602 [0.5] International Monetary Problems
   f. 3.0 credits from: International Economic Policy 3.0
      - ECON 3370 [0.5] The Economics of Migration
      - ECON 3508 [0.5] Introduction to Economic Development
      - ECON 3509 [0.5] Development Planning and Project Evaluation
      - ECON 3510 [0.5] African Economic Development
B.G.In.S. (15.0 credits)
Stream in International Economic Policy

a. Foundations
- ECON 1001 [0.5] Introduction to Microeconomics
- & ECON 1002 [0.5] Introduction to Macroeconomics
- or FYSM 1003 [1.0] Introduction to Economics

b. Microeconomics
- ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors
- or ECON 2009 [0.5] Managerial Economics
- or ECON 2020 [0.5] Intermediate Microeconomics: Producers and Market Structure

c. Macroeconomics
- ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors
- or ECON 2102 [0.5] Intermediate Macroeconomics I

d. Research Methodologies
- IPAF 2000 [0.5] Quantitative Approaches to Policy Analysis
- or ECON 2210 [0.5] Introductory Statistics for Economics

e. International Economic Policy
- ECON 3403 [0.5] Introduction to Public Economics: Expenditures
- ECON 3405 [0.5] Introduction to Public Economics: Taxation

Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.

B. Credits Not Included in the Major CGPA (8.0 credits)
5. 4.0 credits in: 
- Free Electives

C. Additional Requirements
4. 8.0 credits in:
- ECON 3405
- ECON 3400
- ECON 3305
- ECON 3300
- ECON 3205
- ECON 3200
- ECON 3105
- ECON 3100

Note: To meet the prerequisite requirements for ECON at the 2000 level or higher, or IPAF 2000 [0.5], students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.

B. Credits Not Included in the Major CGPA (7.0 credits)
3. 7.0 credits in: 
- Free Electives

C. Additional Requirements
4. The Language requirement must be met.

Total Credits 20.0

Stream in International Economic Policy
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in: Core Courses
- GINS 1000 [0.5] Global History
- GINS 1010 [0.5] International Law and Politics
- GINS 1020 [0.5] Anthropology, Globalization and Culture
- GINS 2000 [0.5] Ethics and Globalization
- GINS 2010 [0.5] Globalization and International Economic Issues
- GINS 2020 [0.5] Global Literature
- GINS 3010 [0.5] Global and International Theory
- GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream

a. Foundations
- ECON 1001 [0.5] Introduction to Microeconomics
- & ECON 1002 [0.5] Introduction to Macroeconomics
- or FYSM 1003 [1.0] Introduction to Economics

b. Microeconomics
- ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors
- or ECON 2009 [0.5] Managerial Economics
- or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure

c. Macroeconomics
- ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors
- or ECON 2102 [0.5] Intermediate Macroeconomics I

d. Research Methodologies
- IPAF 2000 [0.5] Quantitative Approaches to Policy Analysis
- or ECON 2210 [0.5] Introductory Statistics for Economics

e. International Economic Policy
- ECON 3403 [0.5] Introduction to Public Economics: Expenditures
- ECON 3405 [0.5] Introduction to Public Economics: Taxation

Note: To meet the prerequisite requirements for ECON at the 2000 level or higher, or IPAF 2000 [0.5], students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.

B. Credits Not Included in the Major CGPA (7.0 credits)
3. 7.0 credits in: 
- Free Electives

C. Additional Requirements
4. The Language requirement must be met.

Total Credits 15.0

Minor in Economics (4.0 credits)
Open to all undergraduate degree students not pursuing a Major in Economics or the B.G.In.S. Specialization or Stream in International Economic Policy.

Requirements:
1. 1.0 credit in:
- ECON 1001 [0.5] Introduction to Microeconomics
- & ECON 1002 [0.5] Introduction to Macroeconomics
- or FYSM 1003 [1.0] Introduction to Economics

2. 0.5 credit in:
- ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors
- or ECON 2009 [0.5] Managerial Economics
- or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure

3. 0.5 credit in:
- ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors
- or ECON 2102 [0.5] Intermediate Macroeconomics I

4. 0.5 credit in:
- ECON at the 2000 level or higher,
- or IPAF 2000 [0.5]

5. 1.5 credits in ECON at the 2000 level or higher

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Minor in Industrial Economics (4.0 credits)
Open to all B.Eng. students and other undergraduate degree students not pursuing a Major in Economics who have successfully completed ECOR 3800 and SYSC 3200 while registered in a B.Eng. program.

Requirements:
1. 1.0 credit in:
- ECON 3508 [0.5] Introduction to Economic Development
- ECON 3509 [0.5] Development Planning and Project Evaluation
- ECON 3510 [0.5] African Economic Development
- ECON 3601 [0.5] Introduction to International Trade
- ECON 3602 [0.5] International Monetary Problems
- ECON 3603 [0.5] The Economics of Natural Resources
- ECON 3604 [0.5] Environmental Economics
- ECON 3607 [0.5] European Economic Integration
- ECON 3608 [0.5] The Economics of Transition
- ECON 3680 [0.5] Agricultural Economics
- ECON 3670 [0.5] Comparative Economic Systems

Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.
**Bachelor of Economics Regulations**

The regulations presented in this section apply to all Bachelor of Economics (B.Econ.) programs.

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.Econ. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.Econ. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**0000-Level Courses**

Students in B.Econ. programs may not count any 0000-level Mathematics courses for credit toward their degree. Such students may, however, be required to take one or more of these courses to replace missing program prerequisites in which case the courses will be set aside as “no credit for degree” (NCD).

**Access to Economics Courses**

To meet the prerequisite requirements for most 2000-level Economics courses, students must have obtained a grade of C- or higher in ECON 1401 and a grade of C- or higher in FYSM 1003 [1.0] or ECON 1000 [1.0] or, equivalently, an average grade of C- or higher in ECON 1001 and ECON 1002, one or both of which have been transferred from another university.

**Regulations**

**Post-Baccalaureate Diploma**

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

**Definition**

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

**Program Requirements**

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

**English as a Second Language Requirement**

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

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### Post-Baccalaureate Diploma in Economics (4.0 credits)

**Admission to this program requires the permission of the Department of Economics.**

**Requirements:**

1. **3.0 credits in:**
   - ECON 4001 [0.5] Mathematical Analysis in Economics
   - ECON 4002 [0.5] Statistical Analysis in Economics
   - ECON 4020 [0.5] Advanced Microeconomic Theory
   - ECON 4021 [0.5] Advanced Macroeconomic Theory
   - ECON 4706 [0.5] Econometrics I
   - ECON 4990 [0.5] Research and Writing in Economics

2. **1.0 credit in electives approved by the Department,** normally in economics at the 4000 level but may include ESLA 1906 and/or ECON 3001.

**Total Credits** 4.0

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### Bachelor of Economics Regulations

The regulations presented in this section apply to all Bachelor of Economics (B.Econ.) programs.

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).
Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

• A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
• A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
• Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.
Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database.

Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Economics Honours: Co-op Admission and Continuation Requirements
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the second year of the Bachelor of Economics Honours program
2. A major CGPA of 8.00 or higher and an overall CGPA of 8.00 or higher;
3. Successfully completed all required first- and second-year courses before beginning the first work term.

To obtain the co-op designation in Bachelor of Economics, students must successfully complete three (3) work terms.

Work Term Report Course: ECON 3999

Work/Study Pattern:

Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.
Degree
• Bachelor of Economics (B.Econ.) (Honours)

Admission Requirements
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais) as well as 4U Advanced Functions or MATH 0005. In addition, 4U Calculus and Vectors or MATH 0107 is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum. For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

Advanced Standing
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in a Bachelor of Economics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma
• Post-Baccalaureate Diploma in Economics
To be eligible for admission to the Post-Baccalaureate Diploma in Economics students must normally have:
1. an undergraduate degree with a GPA of 9.0 or higher, preferably with honours,
2. successfully completed university-level introductory (micro- and macro-) economics, calculus, and linear algebra with a grade of C+ or higher in each, and
3. permission of the Department of Economics.

Students may be granted advanced standing to a maximum of 1.0 credit. Advanced standing does not negate the 3.0 credit residency requirement.

Note: students who already hold an honours undergraduate degree in economics are encouraged to apply for admission to graduate programs in economics through the Graduate Admissions web site at graduate.carleton.ca.

Economics (ECON) Courses

ECON 1000 [1.0 credit]
Introduction to Economics
An introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation, and international economic problems.
Precludes additional credit for ECON 1001, ECON 1002, and FYSM 1003.
Lectures three hours a week, discussion groups one hour every two weeks.

ECON 1001 [0.5 credit]
Introduction to Microeconomics
An introduction to the major tools and policy problems of microeconomics. Economic analysis is applied to a variety of contemporary issues such as taxation, pollution, wage determination, poverty, market power, and international trade.
Precludes additional credit for ECON 1000 and FYSM 1003.
Lectures three hours a week, discussion groups one hour every two weeks.
ECON 1002 [0.5 credit]
Introduction to Macroeconomics
An introduction to the major tools and policy problems of macroeconomics. Economic analysis is applied to a variety of contemporary problems such as: saving, investment and interest rates; unemployment; money and inflation; exchange rates; fiscal and monetary policy. Precludes additional credit for ECON 1000 and FYSM 1003.
Lectures three hours a week, discussion groups one hour every two weeks.

ECON 1401 [0.5 credit]
Elementary Mathematics for Economics I
Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152.
Prerequisite(s): Ontario Grade-12 U Advanced Functions, or MATH 0005, or equivalent; and ECON 1001 or ECON 1000 or FYSM 1003, which may be taken concurrently with ECON 1401.
Lectures three hours a week, tutorials one hour a week.

ECON 1402 [0.5 credit]
Elementary Mathematics for Economics II
Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model. Also listed as MATH 1402.
Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401 or MATH 1401 with a grade of C- or higher.
Lectures three hours a week, tutorials one hour a week.

ECON 2001 [0.5 credit]
Intermediate Microeconomics for Non-Mathematical Majors
The main topics in microeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their applications. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.I.B., B.Math., or B.Sc. program.
Precludes additional credit for ECON 2002 (no longer offered), ECON 2003 (no longer offered), ECON 2009, ECON 2020, and ECON 2030.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

ECON 2009 [0.5 credit]
Managerial Economics
An economic analysis of managerial decision-making. Elements of production and cost; price and output determination under perfectly and imperfectly competitive market structures; the role of information; topics in business strategy; and the impact of government intervention. Not open to students in any Economics program.
Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2020.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; MATH 1009 (or equivalent) with a grade of C- or higher.
Lectures three hours a week, tutorials one and half hours a week.

ECON 2020 [0.5 credit]
Intermediate Microeconomics I: Producers and Market Structure
Theory of the firm: elements of production and cost; input allocation, pricing, and firm behaviour under perfectly and imperfectly competitive market structures; the role of information; game theory and public policy, including basic competition policy. Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2009.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401/MATH 1401 with a grade of C- or higher and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.
Lectures three hours a week, tutorials one and a half hours a week.
ECON 2030 [0.5 credit]
Intermediate Microeconomics II: Consumers and General Equilibrium
Theory of consumer choice and demand; applications to intertemporal choice, labour supply, and/or choice under uncertainty; welfare analysis; general equilibrium theory; externalities and the role of government.
Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), and ECON 2003 (no longer offered).
Prerequisite(s): ECON 2020 with a grade of C- or higher or ECON 2009 with a grade of C+ or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 2101 [0.5 credit]
Intermediate Macroeconomics for Non-Mathematical Majors
The main topics in macroeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their application. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.Math., or B.Sc. program.
Precludes additional credit for ECON 2102 and ECON 2103.
Prerequisite(s): ECON 1002 or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

ECON 2102 [0.5 credit]
Intermediate Macroeconomics I
An introduction to the macroeconomic modeling of output in the short and long run, and to fixed-price models of the closed and open economy over the business cycle. Policy prescriptions in relation to the business cycle are analysed.
Precludes additional credit for ECON 2101.
Prerequisite(s): ECON 1002 or ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 2103 [0.5 credit]
Intermediate Macroeconomics II
An extension of macroeconomic modeling to the dynamics of wage-price adjustment in the intermediate and long run, to the theoretical foundations of basic macroeconomic relationships, and to contemporary policy issues arising in relation to the business cycle and long-run growth.
Precludes additional credit for ECON 2101.
Prerequisite(s): ECON 2102 with a grade of C- or higher, ECON 1001 with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 2210 [0.5 credit]
Introductory Statistics for Economics
Basic statistical methods for the study of economics. Topics include descriptive statistics, elementary probability theory, sampling distributions, estimation and hypothesis testing for one and two population parameters.
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2200 (no longer offered), ECON 2201 (no longer offered), STAT 2507, STAT 2606, and STAT 3502.
Prerequisite(s): ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 2220 [0.5 credit]
Introductory Econometrics
Topics include correlation, simple and multiple linear regression, and an introduction to statistical computing using an econometrics package. Emphasis on understanding appropriate methods and their properties, as distinct from their formal theoretical development. Empirical applications.
Precludes additional credit for ECON 2200 (no longer offered), ECON 2202 (no longer offered), STAT 2509, and STAT 2607.
Prerequisite(s): ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 2708 [0.5 credit]
Applied Data Analysis
An introduction to concepts and tools for using various forms of data to study applied economic problems. Topics may include identifying relevant datasets, collecting and cleaning both research-ready and user-assembled data sets, data visualization, and summary statistics.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1005 with a grade of C- or higher; and ECON 1402 (or equivalent), with a grade of C- or higher; and ECON 2210 (or equivalent), with a grade of C+ or higher.
Lectures three hours a week, tutorial 1.5 hours a week.
ECON 3001 [0.5 credit]
Mathematical Methods of Economics
Constrained optimization via Lagrange and Kuhn-Tucker conditions; implicit functions and implicit differentiation; comparative static methods applied to models such as utility maximization and least-cost production; homogeneous functions; concave and convex functions; compounding and exponential functions; economic models involving integration; differential equations.
Precludes additional credit for ECON 2400 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; and ECON 1401 and ECON 1402 (or equivalent) with a grade of C- or higher in each and a combined grade point average in ECON 1401 and ECON 1402 of 6.50 or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 3050 [0.5 credit]
Introduction to Financial Economics
The major theories and basic tools used to address modern financial economic issues. Topics may include time value of money, bond and stock valuation, investment criteria, capital budgeting, the risk-return tradeoff, options and option valuation, cost of capital, and the fundamentals of international corporate finance.
Precludes additional credit for BUSI 2503, BUSI 2504, ECON 2504 (no longer offered), BUSI 2505, and ECON 2505 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002 each with a grade of C- or higher, or ECON 1000 or FYSM 1003 with a grade of C- or higher, ECON 1402 (or equivalent) with a grade of C- or higher, and BUSI 1002 or BUSI 1005 with a grade of C- or higher.
Lectures three hours a week.

ECON 3201 [0.5 credit]
Economic Thought and Policy in Canada
An account of the interrelationship between economic theories expounded in Canada and their issue in national policy.
Precludes additional credit for ECON 3404 (no longer offered).
Prerequisite(s): an introductory course in one of the social sciences or Canadian history.
Lectures three hours a week.

ECON 3220 [0.5 credit]
Canadian Economic History
A survey of Canadian economic history from the sixteenth century to the present.
Also listed as HIST 3220.
Precludes additional credit for ECON 2305 or HIST 2305 (no longer offered), ECON 3203 (no longer offered), ECON 3202 or HIST 3203 (no longer offered), and ECON 3207 or HIST 3204 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3230 [0.5 credit]
Selected Topics in Economic History
An examination of the economic development of North America or Europe or other possible selected sets of countries. Countries examined vary from year to year. Also listed as HIST 3230.
Precludes additional credit for ECON 3005 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

ECON 3300 [0.5 credit]
Public Policy Toward Business
The interaction of government and business in the Canadian economy. Reasons for government involvement in selected public policy areas. Topics covered may include competition policy, regulation of firms by boards and commissions, environmental regulation, and public enterprise.
Prerequisite(s): ECON 1001 and ECON 1002.
Lectures three hours a week.
ECON 3370 [0.5 credit]
The Economics of Migration
An introduction to the economic aspects of migration. Topics include, among others: the economics of migration within countries; the economics of host country integration of immigrants; the impact of immigration on outcomes in the host country; the impacts of emigration on the home country.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3380 [0.5 credit]
The Economics of Gender and Ethnicity
The impact of gender and ethnicity on labour-market outcomes. Topics may include: employment, work, earnings, and poverty; discrimination and policy responses; immigration; the economics of the household; gender and development; micro-credit; labour standards.
Precludes additional credit for ECON 3100 (no longer offered) and ECON 3810 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3403 [0.5 credit]
Introduction to Public Economics: Expenditures
The role and nature of the government sector in the economy, the theory of public goods, the equity and efficiency effects of public expenditures, voting rules and fiscal policies, techniques of public expenditure analysis, and intergovernmental fiscal relations.
Precludes additional credit for ECON 3003 (no longer offered) and ECON 3408 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4402 (no longer offered) or ECON 4403.
Prerequisite(s): ECON 1001 and ECON 1002 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3405 [0.5 credit]
Introduction to Public Economics: Taxation
The role and nature of the government sector in the economy, principles of taxation, tax equity, incidence and excess burden of taxes, structure of taxes in the economy, role of personal, corporate, sales and wealth taxes, fiscal stabilization policy, and the economics of public debt.
Precludes additional credit for ECON 3003 (no longer offered) and ECON 3407 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4401 (no longer offered) or ECON 4404.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3420 [0.5 credit]
Economic Theories of Federalism
Economic dimensions of federalism, with reference to Canadian experience. Issues include: fiscal federalism; impact of federal economic policies on provincial economies; decentralization possibilities for fiscal and economic development policies; and consequences of policies such as provincial trade barriers and impediments to factor flows.
Precludes additional credit for ECON 3206 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3450 [0.5 credit]
Political Economy in the Modern State
An examination of the role of government in the economy, with emphasis on alternate forms of social coordination and the advantages and disadvantages of each form in the Canadian system.
Precludes additional credit for ECON 3305 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3460 [0.5 credit]
Introduction to Health Economics
Health as an economic good: demand and need; supply and cost. Public health and personal health care.
Alternative health-care delivery systems: financing, performance, quality, and cost effectiveness.
Preclusion: credit will not be given if taken concurrently with or after ECON 4460.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3508 [0.5 credit]
Introduction to Economic Development
A discussion of the principles of economic development. Application to the problems of the developing countries.
Precludes additional credit for ECON 3603 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4507.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3509 [0.5 credit]
Development Planning and Project Evaluation
An introduction to the tools used in the planning and evaluation of development projects. Topics include the theory, application, strengths and limitations of cost-benefit analysis and competing approaches, and an examination of project evaluation techniques.
Precludes additional credit for ECON 3604 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.
ECON 3510 [0.5 credit]
African Economic Development
Domestic and international aspects of development problems and policies in the African context. Topics may include human resource development, growth and poverty reduction, domestic resource mobilization, the implications of ethnic diversity, governance, and institutions, and issues of trade, investment, aid, migration, and health.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3600 [0.5 credit]
Introduction to International Economics
A discussion of theory and policy in international trade and finance. Intended for students planning to take only 0.5 credit in international economics at the 3000-level.
Precludes additional credit for ECON 3601 and ECON 3602. Credit will not be given if taken concurrently with or after ECON 4601 or ECON 4602.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

ECON 3601 [0.5 credit]
Introduction to International Trade
An extension of the basic principles of economics to international trade. Topics covered include the theory of international specialization, tariffs and other barriers to trade, trade liberalization and economic integration, international movements of labour and capital, trade and development.
Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4601.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3602 [0.5 credit]
International Monetary Problems
A discussion of the theory and institutions of the international monetary system, and the related balance of payments problems of nation states.
Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4602.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3607 [0.5 credit]
Monetary and Financial Institutions
The behaviour of financial intermediaries and institutions such as the Bank of Canada, banks and trust companies, and regulatory bodies such as the Canada Deposit Insurance Corporation and the Superintendent of Financial Institutions.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3706 [0.5 credit]
Applied Econometrics
Introduction to applied econometric methods with emphasis on the use of the regression model for empirical research. Real-world examples are used extensively to illustrate key concepts. Hands-on computer exercises are an integral part of the course.
Includes: Experiential Learning Activity
Precludes additional credit for ECON 4706.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, ECON 2201 (or equivalent) with a grade of C- or higher, and ECON 2202 (or equivalent) with a grade of C+ or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 3801 [0.5 credit]
Regional Economics
Unequal distribution of economic activity between spatially defined regions. The pattern in Canada since World War II and the outlook for the future is evaluated, considering "natural" adjustment mechanisms and policy tools.
Precludes additional credit for ECON 3401 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3803 [0.5 credit]
The Economics of Natural Resources
The application of economic analysis to questions concerning natural-resource use, management and conservation, as well as market failures and environmental effects. Policy problems relating to natural resources are discussed.
Precludes additional credit for ECON 3805 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3804 [0.5 credit]
Environmental Economics
Microeconomic analysis of environmental issues. Frameworks for measuring environmental costs and benefits. The efficiency of alternative pollution control policies. Applications include air and water pollution and global environmental problems such as ozone depletion and global warming.
Precludes additional credit for ECON 3806 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.
ECON 3807 [0.5 credit]
European Economic Integration
A discussion of the theories of free trade areas and customs, monetary, and economic unions, and the related historical experience of Europe. Topics include: currency area and the euro, coordination of fiscal policy and the EU budget, common agricultural policy, labour mobility, and regional policy.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3808 [0.5 credit]
The Economics of Transition
The transition from state ownership and central planning to mixed ownership structure with resource allocation by market mechanisms. "Classical socialism" is criticized and the processes of transition in countries of Central and Eastern Europe, the former Soviet Union, and Asia are compared.
Precludes additional credit for ECON 3700 (no longer offered), ECON 3701 (no longer offered), and ECON 3702 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3820 [0.5 credit]
Topics in Canadian Economic Policy
Economic analysis applied to selected policy areas, issues or institutions. One or more of the following topics may be dealt with: decision-making by bureaucratic institutions, policy problems arising from poverty, the economics of natural resources and pollution, urban economics.
Precludes additional credit for ECON 3800 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3840 [0.5 credit]
An Economic Analysis of Law
An introduction to the application of economic principles and methodology to a variety of legal problems with emphasis on the theory of property rights and the allocation of resources.
Precludes additional credit for ECON 3204 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3850 [0.5 credit]
Economics of Information and the Media
An introduction to the economics of information and the media, with a focus on the analysis of production and distribution of information, the application of theory to selected communications-media industries in Canada, and the analysis of existing Canadian policies.
Precludes additional credit for ECON 3200 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4205 (no longer offered) or ECON 4850.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3856 [0.5 credit]
Housing Economics
Examination of housing markets, housing finance, and government housing policy using the tools of microeconomics. Models of demand, supply, and market equilibrium emphasizing the special characteristics of housing, including heterogeneity, durability, and spatial fixity. Relationships to other goods and markets and the wider macroeconomy.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3860 [0.5 credit]
Agricultural Economics
An examination of the agricultural industry in the national economy and in low-income societies, with emphasis on the working out of the basic forces that determine supply and demand for the industry, and the functional distribution of income among the factors of production.
Precludes additional credit for ECON 3406 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3864 [0.5 credit]
Transportation Economics
Factors affecting demand for and supply of transportation services; demand elasticities and cost structures of various modes of transport; transportation service pricing. Topics may include transport demand forecasting, transportation investment and project appraisal, and the role of transport in economic development.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.
ECON 3870 [0.5 credit]
Comparative Economic Systems
Analysis of the structure, institutions, and performance of alternative economic systems, including capitalism, socialism, and communism. Selected countries are studied as examples of these systems.
Precludes additional credit for ECON 4806 (no longer offered) and ECON 4807 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3878 [0.5 credit]
Contemporary Economic Issues
Content may vary from year to year and is announced in advance of the registration period.
Lectures and/or seminars three hours a week.

ECON 3880 [0.5 credit]
Special Studies in Economics
Content may vary from year to year and is announced in advance of the registration period.
Precludes additional credit for ECON 3402 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures and/or seminars three hours a week.

ECON 3900 [0.5 credit]
Research Methods in Economics
The process of doing basic research in economics: development of the research proposal, finding and critically evaluating relevant literature, model development, methods for locating and collecting economic data, analytical methods, and writing mechanics. This course has a strong practical focus.
Includes: Experiential Learning Activity
Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.
Seminars three hours a week.

ECON 3920 [0.5 credit]
Professional Practice of Economics
Development of skills used by professional economists, including writing professional documents such as policy briefs and memos, data visualization, communication of economic ideas in non-technical terms, presentation skills, and team-based problem solving.
Includes: Experiential Learning Activity
Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.
Seminars three hours a week.

ECON 3999 [0.0 credit]
Co-operative Work Term
Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Honours Economics or Applied Economics Co-operative Education option, satisfactory completion of the Co-op preparation classes offered by the Co-operative Education Office, and permission of the Department.

ECON 4001 [0.5 credit]
Mathematical Analysis in Economics
Analysis and algebra: set theory, sequences and series, quadratic forms, separation and fixed-point theorems. Static optimization: the Weierstrass, Lagrange, and Kuhn-Tucker theorems; convexity and quasi-convexity; the envelope theorem. Dynamic optimization: the Maximum Principle and Bellman's equation. Applications of these tools to economic theory.
Prerequisite(s): ECON 3001 with a grade of C+ or higher. Lectures three hours a week, tutorials one and a half hours a week.

ECON 4002 [0.5 credit]
Statistical Analysis in Economics
Probability: including conditional probability, random variables and distributions, unconditional and conditional expectations. Distributions: including special distributions and their properties, and sampling distributions of estimators. Nonparametric methods and limit theorems; stochastic processes; simulation and bootstrap methods. Applications of these tools to economic theory.
Precludes additional credit for STAT 3500 (no longer offered), STAT 3508, and STAT 3558.
Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4004 [0.5 credit]
Operations Research I
Linear programming, duality, sensitivity analysis, transportation and network problems. Both theory and a wide range of applications are studied.
Precludes additional credit for BUSI 2300 (no longer offered), MATH 3801, and SYSC 3200.
Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4005 [0.5 credit]
Operations Research II
Dynamic programming, inventory models, queuing, simulation, and non-linear programming.
Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher, and ECON 2210 (or equivalent) or STAT 2605 or STAT 3502 with a grade of C- or higher.
Lectures three hours a week.
ECON 4020 [0.5 credit]
Advanced Microeconomic Theory
Advanced theory of individual economic behaviour in production, consumption, and general equilibrium. Elementary tools of mathematics are employed in the exposition of most topics. Precludes additional credit for ECON 4200 (no longer offered).
Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4020.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4021 [0.5 credit]
Advanced Macroeconomic Theory
An introduction to advanced macroeconomic models. Topics may include analysis of business cycles, inflation, unemployment, economic growth, fiscal and monetary policy, consumption decisions of households, and investment decisions of firms. Precludes additional credit for ECON 4201 (no longer offered).
Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4021.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4025 [0.5 credit]
Game Theory and Economics
Analysis of strategic behaviour using methods of modern game theory. Topics include analysis of business cycles, inflation, unemployment, economic growth, fiscal and monetary policy, consumption decisions of households, and investment decisions of firms. Precludes additional credit for ECON 4201 (no longer offered).
Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4025.
Lectures three hours a week.

ECON 4026 [0.5 credit]
Macroeconomic Dynamics
Dynamic models as applied to topics such as economic growth, business cycles, consumption, investment, inflation, and real-financial linkages. Empirical and/or policy issues may also be discussed. Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4026.
Lectures three hours a week.

ECON 4030 [0.5 credit]
Economics of Uncertainty and Information
Uncertainty, imperfect information, and asymmetric information in the allocation of resources and the performance of markets and alternative coordinating mechanisms. Precludes additional credit for ECON 4006 (no longer offered) and ECON 4260 (no longer offered).
Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4051 [0.5 credit]
Financial Asset Pricing
Factors that drive security prices and models that attempt to account for aspects of security returns, including the generic arbitrage pricing model, the capital asset pricing model (CAPM), the consumption CAPM, and the intertemporal CAPM. Precludes additional credit for BUSI 3500, ECON 3500 (no longer offered), BUSI 3502, ECON 3502 (no longer offered).
Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4052 [0.5 credit]
Corporate Financial Economics
Optimization and corporate finance. Corporate governance and managerial compensation. Capital structure and the Modigliani-Miller theorem. Agency theory and asymmetric information. The issue of equity, debt, and other securities. Dividend policy. Investment and capital budgeting, NPV, and real options. Precludes additional credit for BUSI 3500 (or ECON 3500, no longer offered) and BUSI 3502 (or ECON 3502, no longer offered).
Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.
Lectures three hours a week.
ECON 4053 [0.5 credit]
Financial Market Modeling
The modeling of the evolution of prices in (near) efficient markets and the evaluation of functions of these prices such as guarantees, options, warrants, futures, and other types of derivatives. Arrow-Debreu state-contingent claims. Notions of complete and incomplete markets. Precludes additional credit for ECON 4100 (no longer offered) and ECON 4504 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 3001 with a grade of C- or higher. Lectures three hours a week.

ECON 4056 [0.5 credit]
Insurance Economics
The theory of insurance founded on probability and decision theory. The optimal design of insurance policies from a risk-sharing and an information economics perspective. Principal-agent problems including adverse selection, asymmetric information, and moral hazard with implications for insurance. The interaction between insurance and other markets. Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent) with a grade of C- or higher. Lectures three hours a week.

ECON 4057 [0.5 credit]
Behavioural Financial Economics
Market efficiency and the limits of arbitrage. Heuristics and biases identified by behavioural decision theorists and their effect on the behaviour of managers and investors. Behavioural theories of market trading volume and asset prices. Behavioural approaches to corporate financial economics problems. Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 3050 with a grade of C- or higher. Lectures three hours a week.

ECON 4108 [0.5 credit]
Behavioural Economics
Major factors underlying economic behaviour, including various views of the role of rationality in economic analyses of individual decision-making and institutional design and a detailed treatment of behavioural heuristics and biases and their implications for nudging techniques that aim to improve economic outcomes. Prerequisite(s): ECON 2030 with a grade of C- or higher. Lectures three hours a week.

ECON 4109 [0.5 credit]
Experimental Economics
An introduction to the use of and insights gained from both laboratory- and field-type experimental methods in economic research. Topics include analysis of individual rationality, performance of markets, and design of economic systems. In-class experiments are an integral part of the course. Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 with a grade of C- or higher. Lectures three hours a week.

ECON 4209 [0.5 credit]
Selected Topics in the History of Economic Thought
The development of economic thought through time in relation to selected economic problems. Precludes additional credit for ECON 4105 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher, and ECON 2103 with a grade of C+ or higher. Also offered at the graduate level, with different requirements, as ECON 5209, for which additional credit is precluded. Lectures and/or seminars three hours a week.

ECON 4230 [0.5 credit]
Economic History
The application of economic theory and quantitative techniques to selected topics in economic history, which may include historical patterns of growth and welfare, nineteenth-century globalization, technological change, the development of agriculture, industrialization, the Great Depression, and the origins of central banks. Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher. Also offered at the graduate level, with different requirements, as ECON 5230, for which additional credit is precluded. Lectures three hours a week.

ECON 4301 [0.5 credit]
Market Structure and Firm Behaviour
Various theoretical and empirical studies of firm and market organization with emphasis on the pricing, advertising, investment and locational behaviour of firms in imperfectly competitive markets. Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.

ECON 4302 [0.5 credit]
Competition and Regulatory Policy
Public policies relating to competition and regulation. Topics may include: Ramsey pricing, peak-load pricing, cross-subsidization, access pricing (ECPR), multi-part pricing and price discrimination, predatory and targeted pricing, vertical restrictions, traditional regulation (including rate-of-return regulation), incentive regulation (including price caps), and the political economy of regulation. Precludes additional credit for ECON 4300 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.
ECON 4309 [0.5 credit]
Applied Industrial Economics
The empirical application of microeconomics, with special emphasis on the Canadian economy. Topics include: consumer demand, firm production and investment, and industrial and trade structure.
Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher.
Lectures three hours a week.

ECON 4360 [0.5 credit]
Labour Economics
The application of price theory to the labour market. Topics include models of labour supply and labour demand, human capital and the economics of education, and unions and their impact on the labour market.
Precludes additional credit for ECON 4305 (no longer offered) and ECON 4306 (no longer offered).
Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4365 [0.5 credit]
Industrial Relations
Economic analysis of selected industrial relations and labour market policy problems. Topics include unionization, strike activity, the economics of occupational health and safety, pension policy, and the impact of new technology on the labour market.
Precludes additional credit for ECON 4605 (no longer offered).
Prerequisite(s): ECON 2030 with a grade of C- or higher, or ECON 2003 (no longer offered) with a grade of C- or higher.
Lectures three hours a week.

ECON 4403 [0.5 credit]
Public Economics: Expenditures
A discussion of the theory of government expenditures and an examination of empirical attempts to quantify the theory. Examination of current topics such as expenditures and grants in the Canadian federation.
Precludes additional credit for ECON 4402 (no longer offered).
Prerequisite(s): ECON 2030 with a grade of C- or higher, or ECON 2003 (no longer offered) with a grade of C- or higher.
Lectures three hours a week.

ECON 4404 [0.5 credit]
Public Economics: Taxation
A discussion of the theory of taxation and an examination of empirical attempts to quantify the theory. Some topics of current interest, such as the redistribution of income in Canada and tax reform, are examined.
Precludes additional credit for ECON 4401 (no longer offered).
Prerequisite(s): ECON 2030 with a grade of C- or higher, or ECON 2003 (no longer offered) with a grade of C- or higher.
Lectures three hours a week.

ECON 4407 [0.5 credit]
Project Evaluation
Techniques and problems in the evaluation of public and private projects. Examination of alternative approaches to public decision-making including cost-benefit analysis, cost-effectiveness analysis, and multiple-objective frameworks. Case studies of projects in various areas such as natural resources, the environment, human resources, public services, and transportation.
Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4460 [0.5 credit]
Health Economics
Economic analysis of the organization, financing, and utilization of health-care services. Topics include supply and demand of health care, the impact of private and social health insurance on demand, and policy issues in the provision of health care in Canada.
Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4507 [0.5 credit]
The Economics of Development
An examination of some theoretical approaches to the economics of development, together with analysis of some economic policy issues of a largely internal character, such as intersectoral investment allocation, income distribution, unemployment, and investment in human development.
Prerequisite(s): ECON 2030 with a grade of C- or higher, or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher.
Lectures three hours a week.
ECON 4601 [0.5 credit]  
International Trade Theory and Policy  
International trade theory and its implications for economic policy. Topics such as determinants of trade and specialization, gains from trade and commercial policy, international factor mobility, growth and development.  
Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.  
Lectures three hours a week.

ECON 4602 [0.5 credit]  
International Monetary Theory and Policy  
International monetary theory and its implications for economic policy. Topics such as sources of disequilibrium and adjustment in the balance of payments under fixed versus flexible exchange rates, international capital movements, and international monetary reform.  
Prerequisite(s): ECON 2103 with a grade of C- or higher.  
Lectures three hours a week.

ECON 4670 [0.5 credit]  
Monetary Theory and Policy  
The role of money and the monetary system in determining income, employment, and price level; techniques of monetary policy; the relationship between monetary and fiscal policy.  
Precludes additional credit for ECON 4607 (no longer offered) and ECON 4608 (no longer offered).  
Prerequisite(s): ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.  
Lectures three hours a week.

ECON 4700 [0.5 credit]  
Measurement Economics  
National accounting and index numbers. Topics may include: the measurement of output and income, capital and depreciation, productivity, employment and unemployment, poverty and inequality, household production, pollution and resource depletion, and the balance of payments; price indexes; standard-of-living indexes; and international comparisons.  
Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.  
Lectures three hours a week.

ECON 4706 [0.5 credit]  
Econometrics I  
An introduction to econometric theory and analysis of the classical normal linear regression model. Topics include estimation methods, hypothesis testing, multicollinearity, indicator variables, heteroscedasticity, and an introduction to time-series methods.  
Precludes additional credit for ECON 3706.  
Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.  
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4707 [0.5 credit]  
Econometrics II  
An extension of ECON 4706. Topics include model specification, diagnostic checks, qualitative and limited dependent variables, panel data, and simultaneous equations models.  
Prerequisite(s): ECON 4706 with a grade of C+ or higher, or STAT 3503 with a grade of C+ or higher.  
Lectures three hours a week.

ECON 4708 [0.5 credit]  
Economic Data Science - Analytics  
An introduction to methods of statistical and machine learning analytics for economic analysis. Tools relevant for both small and large data sets will be covered. Topics may include approaches to classification, dimension reduction strategies, and prediction models and tools.  
Includes: Experiential Learning Activity  
Prerequisite(s): ECON 2708 with a grade of C+ or higher; and ECON 4706 (or equivalent) with a grade of C+ or higher.  
Lectures three hours a week.

ECON 4709 [0.5 credit]  
Economic Data Science - Applications  
Application of data science and machine learning methods to real-world economic problems. Students will apply their data science knowledge in hands-on projects to answer topical research questions. This course has a strong practical focus.  
Includes: Experiential Learning Activity  
Prerequisite(s): ECON 4708 with a grade of C+ or higher.  
Lectures three hours a week.

ECON 4713 [0.5 credit]  
Time-Series Econometrics  
An introduction to the basic concepts and tools of time-series econometrics. Topics include stationary and non-stationary time series, identification, estimation and forecasting, unit root testing, cointegration analysis, error-correction models and ARCH models, together with relevant economic applications.  
Precludes additional credit for ECON 4803 (no longer offered) and STAT 4603.  
Prerequisite(s): ECON 4706 with a grade of C- or higher, or STAT 3503 with a grade of C- or higher.  
Lectures three hours a week.

ECON 4714 [0.5 credit]  
Advanced Topics in Applied Econometrics  
Advanced coverage of one or more areas of current interest in applied econometrics. An empirical research project may be required.  
Includes: Experiential Learning Activity  
Precludes additional credit for ECON 4804 (no longer offered).  
Prerequisite(s): ECON 4706 with a grade of C+ or higher; and ECON 4707, which may be taken concurrently with ECON 4714.  
Lectures three hours a week.
ECON 4800 [0.5 credit]
Spatial Economics
Spatial dimensions of economic activity and organization. Theories of urban agglomeration effects, transport costs, forward and backward linkages, and associated spatial dynamics; empirical analysis of spatial economic clusters; effects of globalization and economic growth on the spatial structure of production and the associated policy response.
Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4850 [0.5 credit]
Advanced Economics of Information and Media
The economics of information production, its distribution through broadcasting, publishing or the Internet, its exchange through telephone and e-mail networks, and its use in private and public organizations. An analysis of telecommunications, broadcasting, copyright, privacy, and Internet policy.
Precludes additional credit for ECON 4205 (no longer offered).
Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.
Lectures three hours a week.

ECON 4880 [0.5 credit]
Special Topics in Economics
Selected advanced topics of interest to upper-year Honours Economics and Applied Economics students. Topics may vary from year to year and are announced in advance of the registration period.
Includes: Experiential Learning Activity
Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher; and ECON 3706 or ECON 4706, which may be taken concurrently with ECON 4880 or may be waived by permission of the Department.
Lectures and/or seminars three hours a week.

ECON 4903 [0.5 credit]
Tutorial in Economics
An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 (no longer offered) or ECON 4901 (no longer offered) or ECON 4902 (no longer offered) or ECON 4905.
Prerequisite(s): permission of the Department.

ECON 4904 [0.5 credit]
Tutorial in Economics
An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 (no longer offered) or ECON 4901 (no longer offered) or ECON 4902 (no longer offered) or ECON 4905.
Prerequisite(s): permission of the Department.

ECON 4905 [0.5 credit]
Honours Capstone Seminar
The development of individual research projects in suitable economics topic areas with the exchange of results at each stage through in-class discussions and written and oral reports and culminating in a major research paper by each course registrant.
Includes: Experiential Learning Activity
Precludes additional credit for ECON 4890, ECON 4900 (no longer offered), ECON 4901, and ECON 4902.
Prerequisite(s): ECON 3900 with a grade of C+ or higher, ECON 3920 with a grade of C+ or higher, and registration in an Honours Economics program.
Seminars three hours a week.

ECON 4908 [1.0 credit]
Honours Essay
Students taking Honours in Economics or Applied Economics may write an Honours essay during their final year. This essay counts for one credit. Students work under an individual faculty adviser.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Department.

ECON 4990 [0.5 credit]
Research and Writing in Economics
Development of fundamental research and writing skills pertinent to the discipline of economics. Writing summary reviews of economics texts of increasing sophistication; writing up empirical and/or theoretical results of increasing complexity.
Prerequisite(s): registration in the Post-Baccalaureate Diploma in Economics program and/or permission of the Department.
Seminars three hours a week, tutorials one and a half hours a week.

Engineering
This section presents the requirements for programs in:

- Aerospace Engineering - Bachelor of Engineering
  Stream A: Aerodynamics, Propulsion and Vehicle Performance
- Aerospace Engineering - Bachelor of Engineering
  Stream B: Aerospace Structures, Systems and Vehicle Design
- Aerospace Engineering - Bachelor of Engineering
  Stream C: Aerospace Electronics and Systems
- Aerospace Engineering - Bachelor of Engineering
  Stream D: Space Systems Design
- Architectural Conservation and Sustainability Engineering - Bachelor of Engineering
- Architectural Conservation and Sustainability Engineering - Bachelor of Engineering Stream A: Structural
- Architectural Conservation and Sustainability Engineering - Bachelor of Engineering Stream B: Environmental
- Biomedical and Electrical Engineering Bachelor of Engineering
• Biomedical and Mechanical Engineering Bachelor of Engineering
• Civil Engineering Bachelor of Engineering
• Communications Engineering Bachelor of Engineering
• Computer Systems Engineering Bachelor of Engineering
• Electrical Engineering Bachelor of Engineering
• Engineering Physics Bachelor of Engineering
• Environmental Engineering Bachelor of Engineering
• Mechanical Engineering Bachelor of Engineering
• Software Engineering Bachelor of Engineering
• Sustainable and Renewable Energy Stream A: Smart Technologies for Power Generation and Distribution Bachelor of Engineering
• Sustainable and Renewable Energy Stream B: Efficient Energy Generation and Conversion Bachelor of Engineering

Program Requirements
Course Categories for Engineering Programs
The following categories of courses are used in defining the programs.

Basic Science Electives
Courses in this classification must be chosen from among those listed as acceptable for the current academic year. The list is published annually on the engineering academic support website: carleton.ca/engineering/uas. The list will change from year to year and only courses on the list valid in the year the course is taken, or courses for which formal approval of the Faculty has been obtained can be used as credit toward an engineering degree. Courses not on the list may be used to fulfill a Basic Science elective requirement with the permission of the Faculty of Engineering and Design and provided all other specified course requirements are met. Note that access to courses on the list is not guaranteed and may depend on space availability and the satisfaction of other requirements including, for example, course prerequisites.

Complementary Studies Electives
Courses in this classification must be chosen from among those listed as acceptable for the current academic year. The list is published annually on the engineering academic support website: carleton.ca/engineering/uas. Registration in CUOL or online course sections is not acceptable. Note that access to courses on the list is not guaranteed and may depend on space availability and the satisfaction of other requirements including, for example, course prerequisites.

Communications Electives for Communications Engineering

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ELEC 4503</td>
<td>Radio Frequency Lines and Antennas</td>
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</tr>
<tr>
<td>ELEC 4505</td>
<td>Telecommunication Circuits</td>
<td>0.5</td>
</tr>
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<td>ELEC 4506</td>
<td>Computer-Aided Design of Circuits and Systems</td>
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<td>ELEC 4509</td>
<td>Communication Links</td>
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<td>ELEC 4702</td>
<td>Fiber Optic Communications</td>
<td>0.5</td>
</tr>
<tr>
<td>SYSC 4607</td>
<td>Wireless Communications</td>
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</tbody>
</table>

Computer Science Electives for Software Engineering
The list of computer science (COMP) electives for software engineering degree is published annually on the engineering academic support website: carleton.ca/engineering/uas. The list will change from year to year and only courses on the list valid in the year the course is taken, or courses for which formal approval of the Faculty has been obtained, can be used as credit toward the Software Engineering degree.

Aerospace Engineering Bachelor of Engineering
Students in Aerospace Engineering must satisfy the requirements for one of the following streams:

Aerospace Engineering - Bachelor of Engineering Stream A: Aerodynamics, Propulsion and Vehicle Performance (21.0 credits)

First Year
1. a) 4.0 credits in: 4.0
   CHEM 1101 0.5 Chemistry for Engineering Students
   ECOR 1041 0.25 Computation and Programming
   ECOR 1042 0.25 Data Management
   ECOR 1043 0.25 Circuits
   ECOR 1044 0.25 Mechatronics
   ECOR 1045 0.25 Statics
   ECOR 1046 0.25 Mechanics
   ECOR 1047 0.25 Visual Communication
   ECOR 1048 0.25 Dynamics
   MATH 1004 0.5 Calculus for Engineering or Physics
   MATH 1104 0.5 Linear Algebra for Engineering or Science
   PHYS 1004 0.5 Introductory Electromagnetism and Wave Motion
   b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:
   ECOR 1055 0.0 Introduction to Engineering Disciplines I
   ECOR 1056 0.0 Introduction to Engineering Disciplines II
   ECOR 1057 0.0 Engineering Profession
2. 0.5 credit in Complementary Studies Electives 0.5
3. 0.5 credit in Basic Science Electives 0.5

Second Year
4. a) 5.0 credits in: 5.0
   AERO 2001 0.5 Aerospace Engineering Graphical Design
### Design (21.0 credits)

**Stream B: Aerospace Structures, Systems and Vehicle Design**

**Aerospace Engineering - Bachelor of Engineering**

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<td>ECOR 2050</td>
<td>0.5</td>
<td>Design and Analysis of Engineering Experiments</td>
</tr>
<tr>
<td>ELEC 3605</td>
<td>0.5</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>MAAE 2101</td>
<td>0.5</td>
<td>Engineering Dynamics</td>
</tr>
<tr>
<td>MAAE 2202</td>
<td>0.5</td>
<td>Mechanics of Solids I</td>
</tr>
<tr>
<td>MAAE 2300</td>
<td>0.5</td>
<td>Fluid Mechanics I</td>
</tr>
<tr>
<td>MAAE 2400</td>
<td>0.5</td>
<td>Thermodynamics and Heat Transfer</td>
</tr>
<tr>
<td>MAAE 2700</td>
<td>0.5</td>
<td>Engineering Materials</td>
</tr>
<tr>
<td>MATH 1005</td>
<td>0.5</td>
<td>Differential Equations and Infinite Series for Engineering or Physics</td>
</tr>
<tr>
<td>MATH 2004</td>
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<td>Multivariable Calculus for Engineering or Physics</td>
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b) Successful completion of

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<tr>
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<tr>
<td>ECOR 2995</td>
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#### Third Year

5. **5.5 credits in:**

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<td>AERO 3002</td>
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<td>Aerospace Design and Practice</td>
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<tr>
<td>AERO 3700</td>
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<td>Communication Skills for Engineering Students</td>
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<td>Applied Thermodynamics</td>
</tr>
<tr>
<td>MAAE 3500</td>
<td>0.5</td>
<td>Feedback Control Systems</td>
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<tr>
<td>MATH 3705</td>
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<td>Mathematical Methods I</td>
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<tr>
<td>SYSC 3600</td>
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<td>Systems and Simulation</td>
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#### Fourth Year

6. **3.5 credits from:**

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<td>AERO 4003</td>
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<td>Aerospace Systems Design</td>
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<tr>
<td>AERO 4302</td>
<td>0.5</td>
<td>Aerodynamics and Heat Transfer</td>
</tr>
<tr>
<td>AERO 4306</td>
<td>0.5</td>
<td>Aerospace Vehicle Performance</td>
</tr>
<tr>
<td>AERO 4308</td>
<td>0.5</td>
<td>Aircraft Stability and Control</td>
</tr>
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<td>MAAE 4907</td>
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</tr>
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<td>ECOR 4995</td>
<td>0.5</td>
<td>Professional Practice</td>
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7. **1.5 credits from:**

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<td>ELEC 4504</td>
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<td>Avionics Systems</td>
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<tr>
<td>MAAE 4000</td>
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<td>Design and Analysis of Engineering Experiments</td>
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<td>AERO 3101</td>
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<td>Lightweight Structures</td>
</tr>
<tr>
<td>AERO 3700</td>
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<td>Introductory Aeroelasticity</td>
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<td>AERO 4608</td>
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<td>Composite Materials</td>
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<tr>
<td>MAAE 4907</td>
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<td>Engineering Design Project</td>
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</table>

7. **1.5 credits from**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>ELEC 4504</td>
<td>0.5</td>
<td>Avionics Systems</td>
</tr>
</tbody>
</table>
Aerospace Engineering - Bachelor of Engineering

Stream C: Aerospace Electronics and Systems (21.0 credits)

First year

1. a) 4.0 credits in:  
   - CHEM 1101 [0.5] Chemistry for Engineering Students
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1045 [0.25] Statics
   - ECOR 1046 [0.25] Mechanics
   - ECOR 1047 [0.25] Visual Communication
   - ECOR 1048 [0.25] Dynamics
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

   b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:
   - ECOR 1055 [0.0] Introduction to Engineering Disciplines I
   - ECOR 1056 [0.0] Introduction to Engineering Disciplines II
   - ECOR 1057 [0.0] Engineering Profession

2. 0.5 credit in Complementary Studies Electives 0.5

3. 0.5 credit in Basic Science Elective 0.5

Second year

4. a) 5.0 credits in:  
   - AERO 2001 [0.5] Aerospace Engineering Graphical Design
   - ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
   - ELEC 2501 [0.5] Circuits and Signals
   - ELEC 2507 [0.5] Electronics I
   - ELEC 2607 [0.5] Switching Circuits
   - MAAE 2101 [0.5] Engineering Dynamics
   - MAAE 2202 [0.5] Mechanics of Solids I
   - MAAE 2700 [0.5] Engineering Materials
   - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   - MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics

   b) Successful completion of
   - ECOR 2995 [0.0] Engineering Portfolio

Third year

5. 5.5 credits in:  
   - AERO 3002 [0.5] Aerospace Design and Practice
   - CCDP 2100 [0.5] Communication Skills for Engineering Students
   - ECOR 3800 [0.5] Engineering Economics

Fourth year

6. 3.5 credits in:  
   - AERO 4003 [0.5] Aerospace Systems Design
   - ECOR 4995 [0.5] Professional Practice
   - ELEC 4504 [0.5] Avionics Systems
   - MAAE 2400 [0.5] Thermodynamics and Heat Transfer
   - MAAE 4907 [1.0] Engineering Design Project
   - SYSC 3501 [0.5] Communication Theory

7. 1.5 credits from:  
   4000-level AERO, MAAE or MECH, or
   - AERO 3240 [0.5] Orbital Mechanics
   - AERO 3841 [0.5] Spacecraft Design I
   - ELEC 4502 [0.5] Microwave Circuits
   - ELEC 4503 [0.5] Radio Frequency Lines and Antennas
   - ELEC 4505 [0.5] Telecommunication Circuits
   - ELEC 4506 [0.5] Computer-Aided Design of Circuits and Systems
   - ELEC 4509 [0.5] Communication Links
   - ELEC 4600 [0.5] Radar and Navigation
   - ELEC 4602 [0.5] Electrical Power Systems
   - ELEC 4609 [0.5] Integrated Circuit Design and Fabrication
   - ELEC 4703 [0.5] Solar Cells
   - ELEC 4706 [0.5] High-Speed Electronics: Circuits and Systems
   - ELEC 4707 [0.5] Analog Integrated Electronics
   - ELEC 4708 [0.5] Advanced Digital Integrated Circuit Design
   - ELEC 4709 [0.5] Integrated Sensors
   - SYSC 4205 [0.5] Image Processing for Medical Applications
   - SYSC 4600 [0.5] Digital Communications
   - SYSC 4607 [0.5] Wireless Communications

8. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0

Aerospace Engineering - Bachelor of Engineering

Stream D: Space Systems Design (21.0 credits)

First year

1. a) 4.0 credits in:  
   - CHEM 1101 [0.5] Chemistry for Engineering Students
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1047 [0.25] Engineering Portfolio

Third year

5. 5.5 credits in:  
   - AERO 3002 [0.5] Aerospace Design and Practice
   - CCDP 2100 [0.5] Communication Skills for Engineering Students
   - ECOR 3800 [0.5] Engineering Economics

Fourth year

6. 3.5 credits in:  
   - AERO 4003 [0.5] Aerospace Systems Design
   - ECOR 4995 [0.5] Professional Practice
   - ELEC 4504 [0.5] Avionics Systems
   - MAAE 2400 [0.5] Thermodynamics and Heat Transfer
   - MAAE 4907 [1.0] Engineering Design Project
   - SYSC 3501 [0.5] Communication Theory

7. 1.5 credits from:  
   4000-level AERO, MAAE or MECH, or
   - AERO 3240 [0.5] Orbital Mechanics
   - AERO 3841 [0.5] Spacecraft Design I
   - ELEC 4502 [0.5] Microwave Circuits
   - ELEC 4503 [0.5] Radio Frequency Lines and Antennas
   - ELEC 4505 [0.5] Telecommunication Circuits
   - ELEC 4506 [0.5] Computer-Aided Design of Circuits and Systems
   - ELEC 4509 [0.5] Communication Links
   - ELEC 4600 [0.5] Radar and Navigation
   - ELEC 4602 [0.5] Electrical Power Systems
   - ELEC 4609 [0.5] Integrated Circuit Design and Fabrication
   - ELEC 4703 [0.5] Solar Cells
   - ELEC 4706 [0.5] High-Speed Electronics: Circuits and Systems
   - ELEC 4707 [0.5] Analog Integrated Electronics
   - ELEC 4708 [0.5] Advanced Digital Integrated Circuit Design
   - ELEC 4709 [0.5] Integrated Sensors
   - SYSC 4205 [0.5] Image Processing for Medical Applications
   - SYSC 4600 [0.5] Digital Communications
   - SYSC 4607 [0.5] Wireless Communications

8. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0
UNOFFICIAL 2021-22 Undergraduate Calendar
CIVE 3202 [0.5]  Mechanics of Solids II  
CIVE 3203 [0.5]  Introduction to Structural Analysis  
CIVE 3204 [0.5]  Introduction to Structural Design  
CIVE 3205 [0.5]  Design of Structural Steel Components  
CIVE 3206 [0.5]  Design of Reinforced Concrete Components  
CIVE 3207 [0.5]  Historic Site Recording and Assessment  
CIVE 3209 [0.5]  Building Science  
CIVE 4202 [0.5]  Wood Engineering  
ECOR 3800 [0.5]  Engineering Economics  

Fourth year  
5.  4.0 credits in:  
ARCH 4200 [0.5]  Architectural Conservation Philosophy and Ethics  
CIVE 4601 [0.5]  Building Pathology and Rehabilitation  
CIVE 4918 [1.0]  Design Project  
ECOR 4995 [0.5]  Professional Practice  
ENVE 4105 [0.5]  Green Building Design  
ENVE 4106 [0.5]  Indoor Environmental Quality  
ENVE 4107 [0.5]  Building Services Engineering  

6.  1.5 credits from:  
CIVE 3208 [0.5]  Geotechnical Mechanics  
CIVE 4200 [0.5]  Matrix Analysis of Framed Structures  
CIVE 4201 [0.5]  Finite Element Methods in Civil Engineering  
CIVE 4302 [0.5]  Reinforced and Prestressed Concrete Design  
CIVE 4303 [0.5]  Urban Planning  
CIVE 4307 [0.5]  Municipal Hydraulics  
CIVE 4308 [0.5]  Behaviour and Design of Steel Structures  
CIVE 4400 [0.5]  Construction/Project Management  
CIVE 4403 [0.5]  Masonry Design  
CIVE 4407 [0.5]  Municipal Engineering  
CIVE 4500 [0.5]  Computer Methods in Civil Engineering  
CIVE 4614 [0.5]  Building Fire Safety  
CIVE 4907 [1.0]  Engineering Research Project  
CIVE 4917 [0.5]  Undergraduate Directed Study  
ENVE 3003 [0.5]  Water Resources Engineering  
ENVE 4003 [0.5]  Air Pollution and Emissions Control  
ENVE 4200 [0.5]  Climate Change and Engineering  
MECH 4407 [0.5]  Heating and Air Conditioning  
SREE 4002 [0.5]  The Energy Economy, Reliability and Risk  

Total Credits 21.5  

Note: Students admitted starting from fall 2019 are not eligible to select either the Structural or Environmental stream of the program.

Architectural Conservation and Sustainability Engineering Bachelor of Engineering  
Architectural Conservation and Sustainability Engineering students with an admission and catalog term prior fall 2019 must satisfy the requirements for one of the following streams:

Architectural Conservation and Sustainability Engineering - Bachelor of Engineering  
Stream A: Structural (22.0 credits)  

First year  
1.  5.5 credits in:  
ARCH 1000 [0.5]  Introduction to Architecture  
CHEM 1001 [0.5]  General Chemistry I  
CHEM 1002 [0.5]  General Chemistry II  
ECOR 1010 [0.5]  Introduction to Engineering  
ECOR 1101 [0.5]  Mechanics I  
ECOR 1606 [0.5]  Problem Solving and Computers  
ENVE 1001 [0.5]  Architecture and the Environment  
MATH 1004 [0.5]  Calculus for Engineering or Physics  
MATH 1005 [0.5]  Differential Equations and Infinite Series for Engineering or Physics  
MATH 1104 [0.5]  Linear Algebra for Engineering or Science  
PHYS 1004 [0.5]  Introductory Electromagnetism and Wave Motion  

Second year  
2.  5.5 credits in:  
ARCC 2202 [0.5]  Architectural Technology 1  
CCDP 2100 [0.5]  Communication Skills for Engineering Students  
CDNS 2400 [0.5]  Heritage Conservation in Canada  
CIVE 2004 [0.5]  GIS, Surveying, CAD and BIM  
CIVE 2200 [0.5]  Mechanics of Solids I  
CIVE 2700 [0.5]  Civil Engineering Materials  
ECOR 2606 [0.5]  Numerical Methods  
ENVE 2001 [0.5]  Process Analysis for Environmental Engineering  
MAAE 2300 [0.5]  Fluid Mechanics I  
MAAE 2400 [0.5]  Thermodynamics and Heat Transfer  
MATH 2004 [0.5]  Multivariable Calculus for Engineering or Physics  

Third year  
3.  5.5 credits in:  
ARCC 2203 [0.5]  Architectural Technology 3  
ARCC 3202 [0.5]  Architectural Technology 4  
CIVE 3202 [0.5]  Mechanics of Solids II  
CIVE 3203 [0.5]  Introduction to Structural Analysis  
CIVE 3204 [0.5]  Introduction to Structural Design  
CIVE 3205 [0.5]  Design of Structural Steel Components  
CIVE 3206 [0.5]  Design of Reinforced Concrete Components  
CIVE 3207 [0.5]  Historic Site Recording and Assessment  
CIVE 3209 [0.5]  Building Science  
ECOR 2050 [0.5]  Design and Analysis of Engineering Experiments  
ECOR 3800 [0.5]  Engineering Economics  

Fourth year  
4.  4.0 credits in:  

366  The Academic Year (Graduate and Undergraduate Studies)
### Arch 4200 [0.5]
Architectural Conservation Philosophy and Ethics

### CIVE 4202 [0.5]
Wood Engineering

### CIVE 4601 [0.5]
Building Pathology and Rehabilitation

### CIVE 4918 [1.0]
Design Project

### ECOR 4995 [0.5]
Professional Practice

### ENVE 4105 [0.5]
Green Building Design

### ENVE 4106 [0.5]
Indoor Environmental Quality

#### 5. 1.5 credits from:

<table>
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<th>Credits</th>
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<tr>
<td>CIVE 4000 [0.5]</td>
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<td>CIVE 4917 [0.5]</td>
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<td>ENVE 4003 [0.5]</td>
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<td>MECH 4407 [0.5]</td>
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<tr>
<td>SREE 4002 [0.5]</td>
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</tbody>
</table>

(See Note 2, below)

#### Total Credits

22.0

### Notes:

1. For Item 1 and students transferring into Architectural Conservation and Sustainability Engineering (Structural or Environmental Stream), students in good standing who have successfully completed CHEM 1101 while registered in another engineering program may replace CHEM 1001 and CHEM 1002 with CHEM 1101 plus one 0.5 credit course from the Basic Science Electives list.

2. For Item 5 in the Structural Stream, CIVE 4907 may replace 1.0 credit.

---

### Architectural Conservation and Sustainability Engineering - Bachelor of Engineering Stream B: Environmental (22.0 credits)

#### First year

**1. 5.5 credits in:**

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<th>Course</th>
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<td>ARCH 1000 [0.5]</td>
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<td>CHEM 1002 [0.5]</td>
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<td>ECOR 1010 [0.5]</td>
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<td>MATH 1000 [0.5]</td>
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<td>MATH 1004 [0.5]</td>
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<td>MATH 1005 [0.5]</td>
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**Second year**

**2. 5.5 credits in:**

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<td>CIVE 2200 [0.5]</td>
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<td>MAAE 2300 [0.5]</td>
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<td>MATH 2004 [0.5]</td>
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**Third year**

**3. 5.5 credits in:**

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<td>ARCC 3202 [0.5]</td>
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<tr>
<td>CIVE 3204 [0.5]</td>
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<td>CIVE 3207 [0.5]</td>
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**Fourth year**

**4. 5.0 credits in:**

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<td>ENVE 4105 [0.5]</td>
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<td>ENVE 4106 [0.5]</td>
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<td>ENVE 4918 [1.0]</td>
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**5. 0.5 credit from:**

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<th>Credits</th>
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<tr>
<td>CIVE 4201 [0.5]</td>
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<tr>
<td>CIVE 4303 [0.5]</td>
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<tr>
<td>CIVE 4400 [0.5]</td>
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</tbody>
</table>
### Biomedical and Electrical Engineering Bachelor of Engineering (21.0 credits)

#### First year

1. **4.5 credits in:**
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1045 [0.25] Statics
   - ECOR 1046 [0.25] Mechanics
   - ECOR 1047 [0.25] Visual Communication
   - ECOR 1048 [0.25] Dynamics
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

2. **0.5 credit from:**
   - CHEM 1101
   - CHEM 1002
   - OR (with permission of the department)

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

- ECOR 1055 [0.0] Introduction to Engineering Disciplines I
- ECOR 1056 [0.0] Introduction to Engineering Disciplines II
- ECOR 1057 [0.0] Engineering Profession

#### Second year

3. **5.0 credits in:**
   - BIOL 1103 [0.5] Foundations of Biology I
   - CCDP 2100 [0.5] Communication Skills for Engineering Students
   - ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
   - ELEC 2501 [0.5] Circuits and Signals

#### Notes:

1. For **Item 1** and students transferring into Architectural Conservation and Sustainability Engineering (Structural or Environmental Stream), students in good standing and who have successfully completed CHEM 1101 while registered in another engineering program may replace CHEM 1001 and CHEM 1002 with CHEM 1101 plus one 0.5 credit course from the Basic Science Electives list.

#### Third year

4. **4.5 credits in:**
   - ELEC 3105 [0.5] Electromagnetic Fields
   - ELEC 3909 [0.5] Electromagnetic Waves
   - SYSC 3203 [0.5] Bioelectrical Systems
   - SYSC 3501 [0.5] Communication Theory
   - SYSC 3610 [0.5] Biomedical Systems, Modeling, and Control

   **or**

   - SYSC 4201 [0.5] Ethics, Research Methods
   - SYSC 4202 [0.5] and Standards for Biomedical Engineering

5. **0.5 credit from:**
   - CHEM 2204
   - CHEM 2203
   - BIOL 4309
   - BIOL 3306
   - BIOL 2303
   - BIOL 2201
   - BIOL 2004
   - BIOL 1104
   - MATH 1005
   - MATH 3007
   - MATH 2004
   - MATH 1005
   - ELEC 2607 [0.5] Switching Circuits
   - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   - MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
   - SYSC 2006 [0.5] Foundations of Imperative Programming
   - SYSC 2510 [0.5] Probability, Statistics and Random Processes for Engineers
   - SYSC 3610 [0.5] Biomedical Systems, Modeling, and Control
   - SYSC 4201 [0.5] Ethics, Research Methods
   - SYSC 4202 [0.5] and Standards for Biomedical Engineering

   **or**

   - SYSC 4201 [0.5] Ethics, Research Methods
   - SYSC 4202 [0.5] and Standards for Biomedical Engineering

#### Fourth year

6. **0.5 credit from:**
   - ELEC 4319 [0.5] Studies in Exercise Physiology
   - CHEM 2203 [0.5] Organic Chemistry I
   - CHEM 2204 [0.5] Organic Chemistry II
   - OR (with permission of the department)

   **or**

   - SYSC 2004 [0.5] Object-Oriented Software Development
   - SYSC 2010 [0.5] Programming Project

7. **2.0 credits in:**
   - ECOR 4995 [0.5] Professional Practice
   - ELEC 4601 [0.5] Microprocessor Systems
   - SYSC 4203 [0.5] Bioinstrumentation and Signals
   - SYSC 4405 [0.5] Digital Signal Processing

8. **1.0 credit in:**
   - SYSC 4907 [1.0] Engineering Project

9. **0.5 credit from:**
   - ELEC 4709 [0.5] Integrated Sensors
   - SYSC 4202 [0.5] Clinical Engineering
   - SYSC 4205 [0.5] Image Processing for Medical Applications

10. **1.0 credit from:**
    - OR
Bachelor of Engineering (21.0 credits)
Biomedical and Mechanical Engineering
Bachelor of Engineering (21.0 credits)

<table>
<thead>
<tr>
<th>Level</th>
<th>Credits</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year</td>
<td>4.5</td>
<td>CHEM 1001 [0.5] General Chemistry I, CHEM 1002 [0.5] General Chemistry II, ECOR 1041 [0.25] Computation and Programming, ECOR 1042 [0.25] Data Management, ECOR 1043 [0.25] Circuits, ECOR 1044 [0.25] Mechatronics, ECOR 1045 [0.25] Statics, ECOR 1046 [0.25] Mechanics, ECOR 1047 [0.25] Visual Communication, ECOR 1048 [0.25] Dynamics, MATH 1004 [0.5] Calculus for Engineering or Physics, MATH 1104 [0.5] Linear Algebra for Engineering or Science, PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td>Second year</td>
<td>4.5</td>
<td>BIOL 1103 [0.5] Foundations of Biology I, MAAE 2001 [0.5] Engineering Graphical Design, MAAE 2101 [0.5] Engineering Dynamics, MAAE 2202 [0.5] Mechanics of Solids I, MAAE 2300 [0.5] Fluid Mechanics I, MAAE 2400 [0.5] Thermodynamics and Heat Transfer, MAAE 2700 [0.5] Engineering Materials, MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics, MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics</td>
</tr>
<tr>
<td>Third year</td>
<td>6.0</td>
<td>CCDF 2100 [0.5] Communication Skills for Engineering Students, ECOR 2050 [0.5] Design and Analysis of Engineering Experiments</td>
</tr>
</tbody>
</table>

**Total Credits:** 21.0

**Biomedical and Mechanical Engineering Bachelor of Engineering (21.0 credits)**

**First year**
1. a) 4.5 credits in: 4.5
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1045 [0.25] Statics
   - ECOR 1046 [0.25] Mechanics
   - ECOR 1047 [0.25] Visual Communication
   - ECOR 1048 [0.25] Dynamics
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
   - b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:
      - ECOR 1055 [0.0] Introduction to Engineering Disciplines I
      - ECOR 1056 [0.0] Introduction to Engineering Disciplines II
      - ECOR 1057 [0.0] Engineering Profession

2. 0.5 credit in Complementary Studies Electives 0.5

**Second year**
3. a) 4.5 credits in: 4.5
   - BIOL 1103 [0.5] Foundations of Biology I
   - MAAE 2001 [0.5] Engineering Graphical Design
   - MAAE 2101 [0.5] Engineering Dynamics
   - MAAE 2202 [0.5] Mechanics of Solids I
   - MAAE 2300 [0.5] Fluid Mechanics I
   - MAAE 2400 [0.5] Thermodynamics and Heat Transfer
   - MAAE 2700 [0.5] Engineering Materials
   - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   - MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
   - b) Successful completion of:
      - ECOR 2995 [0.0] Engineering Portfolio

4. 0.5 credit in Complementary Studies Electives 0.5

**Third year**
5. 6.0 credits in: 6.0
   - CCDF 2100 [0.5] Communication Skills for Engineering Students
   - ECOR 2050 [0.5] Design and Analysis of Engineering Experiments

**Fourth year**
6. 3.5 credits in: 3.5
   - ECOR 4995 [0.5] Professional Practice
   - MAAE 4907 [1.0] Engineering Design Project
   - MAAE 4013 [0.5] Biomedical Device Design
   - MAAE 4210 [0.5] Biomechanics
   - MAAE 4406 [0.5] Heat Transfer
   - SYSC 4201 [0.5] Ethics, Research Methods and Standards for Biomedical Engineering

7. 0.5 credit in MAAE, MECH or AERO at the 4000 level, SYSC 4202 [0.5], SYSC 4203 [0.5] 0.5

8. 1.0 credits from: 1.0
   - BIOL 2005 [0.5] Human Biology
   - BIOL 2201 [0.5] Cell Biology and Biochemistry
   - CHEM 2203 [0.5] Organic Chemistry I
   - OR (with permission of the department)
     - 1.0 credit in BIOL, BIOC or CHEM

**Total Credits:** 21.0

**Civil Engineering Bachelor of Engineering (21.0 credits)**

**First year**
1. a) 4.5 credits in: 4.5
   - CHEM 1101 [0.5] Chemistry for Engineering Students
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1045 [0.25] Statics
   - ECOR 1046 [0.25] Mechanics
   - ECOR 1047 [0.25] Visual Communication
   - ECOR 1048 [0.25] Dynamics
   - ERTC 2404 [0.5] Engineering Geoscience
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
   - b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:
      - ECOR 1055 [0.0] Introduction to Engineering Disciplines I
      - ECOR 1056 [0.0] Introduction to Engineering Disciplines II
      - ECOR 1057 [0.0] Engineering Profession

**Total Credits:** 21.0
The Academic Year (Graduate and Undergraduate Studies)

2. 0.5 credit in Complementary Studies Elective 0.5

Second year
3. a) 5.0 credits in:
   - CIVE 2100 [0.5] Communication Skills for Engineering Students
   - CIVE 2004 [0.5] GIS, Surveying, CAD and BIM
   - CIVE 2101 [0.5] Engineering Mechanics
   - CIVE 2200 [0.5] Mechanics of Solids I
   - CIVE 2700 [0.5] Civil Engineering Materials
   - ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
   - MAAE 2300 [0.5] Fluid Mechanics I
   - MAAE 2400 [0.5] Thermodynamics and Heat Transfer
   - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   - MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
   - b) Successful completion of
     - ECOR 2995 [0.0] Engineering Portfolio

Third year
4. 5.0 credits in:
   - CIVE 3202 [0.5] Mechanics of Solids II
   - CIVE 3203 [0.5] Introduction to Structural Analysis
   - CIVE 3204 [0.5] Introduction to Structural Design
   - CIVE 3205 [0.5] Design of Structural Steel Components
   - CIVE 3206 [0.5] Design of Reinforced Concrete Components
   - CIVE 3208 [0.5] Geotechnical Mechanics
   - CIVE 3209 [0.5] Building Science
   - CIVE 3304 [0.5] Transportation Engineering and Planning
   - ECOR 3800 [0.5] Engineering Economics
   - MATH 3705 [0.5] Mathematical Methods I

5. 0.5 credit in Complementary Studies Elective 0.5

Fourth year
6. 3.5 credits in:
   - CIVE 4208 [0.5] Geotechnical Engineering
   - CIVE 4209 [0.5] Highway Engineering
   - CIVE 4400 [0.5] Construction/Project Management
   - CIVE 4407 [0.5] Municipal Engineering
   - CIVE 4918 [1.0] Design Project
   - ECOR 4995 [0.5] Professional Practice

7. 2.0 credits from:
   - CIVE 4200 [0.5] Matrix Analysis of Framed Structures
   - CIVE 4201 [0.5] Finite Element Methods in Civil Engineering
   - CIVE 4202 [0.5] Wood Engineering
   - CIVE 4301 [0.5] Foundation Engineering
   - CIVE 4302 [0.5] Reinforced and Prestressed Concrete Design
   - CIVE 4303 [0.5] Urban Planning
   - CIVE 4307 [0.5] Municipal Hydraulics
   - CIVE 4308 [0.5] Behaviour and Design of Steel Structures
   - CIVE 4403 [0.5] Masonry Design

CIVE 4500 [0.5] Computer Methods in Civil Engineering
CIVE 4614 [0.5] Building Fire Safety
CIVE 4907 [1.0] Engineering Research Project
CIVE 4917 [0.5] Undergraduate Directed Study
ENVE 3003 [0.5] Water Resources Engineering
ENVE 4105 [0.5] Green Building Design
ENVE 4200 [0.5] Climate Change and Engineering

Total Credits 21.0

Communications Engineering Bachelor of Engineering (21.0 credits)

First year
1. a) 4.0 credits in:
   - CHEM 1101 [0.5] Chemistry for Engineering Students
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1045 [0.25] Statics
   - ECOR 1046 [0.25] Mechanics
   - ECOR 1047 [0.25] Visual Communication
   - ECOR 1048 [0.25] Dynamics
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
   - b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:
      - ECOR 1055 [0.0] Introduction to Engineering Disciplines I
      - ECOR 1056 [0.0] Introduction to Engineering Disciplines II
      - ECOR 1057 [0.0] Engineering Profession

2. 0.5 credit in Basic Science Electives 0.5

Second year
4. a) 5.0 credits in:
   - CIVE 2100 [0.5] Communication Skills for Engineering Students
   - ELEC 2501 [0.5] Circuits and Signals
   - ELEC 2507 [0.5] Electronics I
   - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   - MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
   - SYSC 2004 [0.5] Object-Oriented Software Development
   - SYSC 2006 [0.5] Foundations of Imperative Programming
   - SYSC 2310 [0.5] Introduction to Digital Systems
   - SYSC 2320 [0.5] Introduction to Computer Organization and Architecture
   - SYSC 2510 [0.5] Probability, Statistics and Random Processes for Engineers
   - b) Successful completion of
      - ECOR 2995 [0.0] Engineering Portfolio
Bachelor of Engineering (21.0 credits)  
Computer Systems Engineering

First year  
1. a) 4.0 credits in:  
CHEM 1101 [0.5] Chemistry for Engineering Students  
ECOR 1041 [0.25] Computation and Programming  
ECOR 1042 [0.25] Data Management  
ECOR 1043 [0.25] Circuits  
ECOR 1044 [0.25] Mechatronics  
ECOR 1045 [0.25] Statics  
ECOR 1046 [0.25] Mechanics  
ECOR 1047 [0.25] Visual Communication  
ECOR 1048 [0.25] Dynamics  
MATH 1004 [0.5] Calculus for Engineering or Physics  
MATH 1104 [0.5] Linear Algebra for Engineering or Science  
PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion  

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0] Introduction to Engineering Disciplines I  
ECOR 1056 [0.0] Introduction to Engineering Disciplines II  
ECOR 1057 [0.0] Engineering Profession  

2. 0.5 credit in Basic Science Electives  
CCDP 2100 [0.5] Communication Skills for Engineering Students  
ELEC 2501 [0.5] Circuits and Signals  
MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics  
MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics  
MATH 2006 [0.5] Foundations of Imperative Programming  
SYSC 2100 [0.5] Algorithms and Data Structures  
SYSC 2310 [0.5] Introduction to Digital Systems  
SYSC 2320 [0.5] Introduction to Computer Organization and Architecture  
SYSC 2510 [0.5] Probability, Statistics and Random Processes for Engineers

b) Successful completion of  
ECOR 2995 [0.0] Engineering Portfolio

Third year  
5. 5.0 credits in:  
ECOR 2050 [0.5] Design and Analysis of Engineering Experiments  
ECOR 3800 [0.5] Engineering Economics  
ELEC 3509 [0.5] Electronics II  
ELEC 3909 [0.5] Electromagnetic Waves  
SYSC 3310 [0.5] Introduction to Real-Time Systems  
SYSC 3500 [0.5] Signals and Systems  
SYSC 3503 [0.5] Communication Theory II  
SYSC 4502 [0.5] Communications Software  
SYSC 4504 [0.5] Fundamentals of Web Development  
SYSC 4602 [0.5] Computer Communications

Fourth year  
6. 3.5 credits in:  
ECOR 4995 [0.5] Professional Practice  
SYSC 4405 [0.5] Digital Signal Processing  
SYSC 4604 [0.5] Digital Communication Theory  
SYSC 4607 [0.5] Wireless Communications  
SYSC 4700 [0.5] Telecommunications Engineering  
SYSC 4701 [0.5] Communications Systems Lab  
SYSC 4810 [0.5] Introduction to Network and Software Security

7. 1.0 credit from:  
SYSC 4907 [1.0] Engineering Project (if supervisor is in Systems and Computer Engineering)

8. 1.0 credit from:  
SYSC 2010 [0.5] Programming Project  
or SYSC or ELEC at the 3000 level or above (may include 1.0 credit in SYSC at the 5000 level)

9. 0.5 credit in Complementary Studies Electives  
Total Credits 21.0
Bachelor of Engineering (21.0 credits)

Electrical Engineering

First year
1. a) 4.0 credits in: 4.0
   - CHEM 1101 [0.5] Chemistry for Engineering Students
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1045 [0.25] Statics
   - ECOR 1046 [0.25] Mechanics
   - ECOR 1047 [0.25] Visual Communication
   - ECOR 1048 [0.25] Dynamics
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:
   - ECOR 1055 [0.0] Introduction to Engineering Disciplines I
   - ECOR 1056 [0.0] Introduction to Engineering Disciplines II
   - ECOR 1057 [0.0] Engineering Profession

2. 0.5 credit in: 0.5
   - Basic Science Electives

3. 0.5 credit in: 0.5
   - Complementary Studies Electives

Second year
4. a) 5.0 credits in: 5.0
   - CCDP 2100 [0.5] Communication Skills for Engineering Students
   - ELEC 2501 [0.5] Circuits and Signals
   - ELEC 2507 [0.5] Electronics I
   - ELEC 2602 [0.5] Electric Machines and Power
   - ELEC 2607 [0.5] Switching Circuits
   - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   - MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
   - MATH 3705 [0.5] Mathematical Methods I
   - SYSC 2004 [0.5] Object-Oriented Software Development
   - SYSC 2006 [0.5] Foundations of Imperative Programming
b) Successful completion of
   - ECOR 2995 [0.0] Engineering Portfolio

Third year
5. 5.5 credits in: 5.5
   - ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
   - ECOR 3800 [0.5] Engineering Economics
   - ELEC 3105 [0.5] Electromagnetic Fields
   - ELEC 3500 [0.5] Digital Electronics
   - ELEC 3509 [0.5] Electronics II
   - ELEC 3907 [0.5] Engineering Project
   - ELEC 3908 [0.5] Physical Electronics
   - ELEC 3909 [0.5] Electromagnetic Waves
   - SYSC 3006 [0.5] Computer Organization
   - SYSC 3501 [0.5] Communication Theory
   - SYSC 3600 [0.5] Systems and Simulation

Fourth year
6. 1.5 credits in: 1.5
   - ECOR 4995 [0.5] Professional Practice
   - ELEC 4601 [0.5] Microprocessor Systems
   - SYSC 4505 [0.5] Automatic Control Systems I

7. 1.0 credit from: 1.0
   - ECOR 4907 [1.0] Engineering Project (if supervisor is in Electronics)
   - SYSC 4907 [1.0] Engineering Project (if supervisor is in Systems and Computer Engineering)

8. 2.0 credits from: 2.0
   - MECH 4503 [0.5] An Introduction to Robotics
   - SYSC 3020 [0.5] Introduction to Software Engineering
   - SYSC 3200 [0.5] Industrial Engineering
   - ELEC 3508 [0.5] Power Electronics
   - or ELEC OR SYSC at the 4000 level

9. 0.5 credit from: 0.5
   - Basic Science Electives, or
   - ENVE, CIVE, IDES, MAAE, AERO, MECH at the 2000 level or above, or
   - MECH 4503 [0.5] An Introduction to Robotics
   - SYSC 3020 [0.5] Introduction to Software Engineering
   - SYSC 3200 [0.5] Industrial Engineering
   - or any ELEC or SYSC at the 4000 level

10. 0.5 credit in: 0.5
    - Complementary Studies Electives

Total Credits: 21.0
b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

- ECOR 1055 [0.0] Introduction to Engineering Disciplines I
- ECOR 1056 [0.0] Introduction to Engineering Disciplines II
- ECOR 1057 [0.0] Engineering Profession

2. 0.5 credit in Complementary Studies Electives

Second year

3. a) 5.5 credits in:

- ELEC 2501 [0.5] Circuits and Signals
- ELEC 2507 [0.5] Electronics I
- MAAE 2400 [0.5] Thermodynamics and Heat Transfer
- MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
- MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
- MATH 3705 [0.5] Mathematical Methods I
- PHYS 2202 [0.5] Wave Motion and Optics
- PHYS 2604 [0.5] Modern Physics I
- SYSC 2004 [0.5] Object-Oriented Software Development
- SYSC 2006 [0.5] Foundations of Imperative Programming
- CCDP 2100 [0.5] Communication Skills for Engineering Students

b) Successful completion of:

- ECOR 2995 [0.0] Engineering Portfolio

Third year

4. 5.5 credits in:

- ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
- ECOR 3800 [0.5] Engineering Economics
- ELEC 2607 [0.5] Switching Circuits
- ELEC 3105 [0.5] Electromagnetic Fields
- ELEC 3907 [0.5] Engineering Project
- ELEC 3908 [0.5] Physical Electronics
- ELEC 3909 [0.5] Electromagnetic Waves
- PHYS 3606 [0.5] Modern Physics II
- PHYS 3701 [0.5] Elements of Quantum Mechanics
- PHYS 3807 [0.5] Mathematical Physics I
- SYSC 3600 [0.5] Systems and Simulation

Fourth year

5. 3.5 credits in:

- ECOR 4995 [0.5] Professional Practice
- ELEC 3500 [0.5] Digital Electronics
- ELEC 3509 [0.5] Electronics II
- ELEC 4908 [1.0] Engineering Physics Project
- PHYS 4007 [0.5] Fourth-Year Physics Laboratory: Selected Experiments and Seminars
- PHYS 4707 [0.5] Introduction to Quantum Mechanics I

6. 0.5 credit from:

- PHYS 4203 [0.5] Physical Applications of Fourier Analysis
- PHYS 4208 [0.5] Modern Optics

- PHYS 4409 [0.5] Thermodynamics and Statistical Physics
- PHYS 4508 [0.5] Solid State Physics
- PHYS 4708 [0.5] Introduction to Quantum Mechanics II
- PHYS 4807 [0.5] Statistical Data Analysis Techniques for Physics

7. 0.5 credit in ELEC at the 4000 level excluding: 0.5

- ELEC 4504, ELEC 4600, ELEC 4703, and ELEC 4705

8. 0.5 credit in Complementary Studies Electives

Total Credits: 21.0

Environmental Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.5 credits in:

- CHEM 1001 [0.5] General Chemistry I
- CHEM 1002 [0.5] General Chemistry II
- ECOR 1041 [0.25] Computation and Programming
- ECOR 1042 [0.25] Data Management
- ECOR 1043 [0.25] Circuits
- ECOR 1044 [0.25] Mechatronics
- ECOR 1045 [0.25] Statics
- ECOR 1046 [0.25] Mechanics
- ECOR 1047 [0.25] Visual Communication
- ECOR 1048 [0.25] Dynamics
- MATH 1004 [0.5] Calculus for Engineering or Physics
- MATH 1104 [0.5] Linear Algebra for Engineering or Science
- PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

- ECOR 1055 [0.0] Introduction to Engineering Disciplines I
- ECOR 1056 [0.0] Introduction to Engineering Disciplines II
- ECOR 1057 [0.0] Engineering Profession

Second year

2. 0.5 credit in Complementary Studies Electives

Third year

3. a) 5.0 credits in:

- BIOL 1103 [0.5] Foundations of Biology I
- BIOL 1104 [0.5] Foundations of Biology II
- CHEM 2800 [0.5] Foundations for Environmental Chemistry
- CIVE 2200 [0.5] Mechanics of Solids I
- ENVE 2001 [0.5] Process Analysis for Environmental Engineering
- ERTH 2404 [0.5] Engineering Geoscience
- MAAE 2300 [0.5] Fluid Mechanics I
- MAAE 2400 [0.5] Thermodynamics and Heat Transfer
- MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
- MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics

b) Successful completion of:

- ECOR 2995 [0.0] Engineering Portfolio
### Bachelor of Engineering (21.0 credits)

#### First year

**1. 4.0 credits in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1101</td>
<td>Chemistry for Engineering Students</td>
</tr>
<tr>
<td>ECOR 1041</td>
<td>Computation and Programming</td>
</tr>
<tr>
<td>ECOR 1042</td>
<td>Data Management</td>
</tr>
<tr>
<td>ECOR 1043</td>
<td>Circuits</td>
</tr>
<tr>
<td>ECOR 1044</td>
<td>Mechatronics</td>
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<td>ECOR 1045</td>
<td>Statics</td>
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<td>Dynamics</td>
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<tr>
<td>MATH 1004</td>
<td>Calculus for Engineering or Physics</td>
</tr>
<tr>
<td>MATH 1104</td>
<td>Linear Algebra for Engineering or Science</td>
</tr>
<tr>
<td>PHYS 1004</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
</tbody>
</table>

**b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECOR 1055</td>
<td>Introduction to Engineering Disciplines I</td>
</tr>
<tr>
<td>ECOR 1056</td>
<td>Introduction to Engineering Disciplines II</td>
</tr>
<tr>
<td>ECOR 1057</td>
<td>Engineering Profession</td>
</tr>
</tbody>
</table>

**2. 0.5 credit in Complementary Studies Electives**

**3. 0.5 credit in Basic Science Electives**

#### Second year

**4. 5.0 credits in:**

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ECOR 2050</td>
<td>Design and Analysis of Engineering Experiments</td>
</tr>
<tr>
<td>ELEC 3605</td>
<td>Electrical Engineering</td>
</tr>
<tr>
<td>MAAE 2001</td>
<td>Engineering Graphical Design</td>
</tr>
<tr>
<td>MAAE 2101</td>
<td>Engineering Dynamics</td>
</tr>
<tr>
<td>MAAE 2202</td>
<td>Mechanics of Solids I</td>
</tr>
<tr>
<td>MAAE 2300</td>
<td>Fluid Mechanics I</td>
</tr>
<tr>
<td>MAAE 2400</td>
<td>Thermodynamics and Heat Transfer</td>
</tr>
<tr>
<td>MAAE 2700</td>
<td>Engineering Materials</td>
</tr>
<tr>
<td>MATH 1005</td>
<td>Differential Equations and Infinite Series for Engineering or Physics</td>
</tr>
<tr>
<td>MATH 2004</td>
<td>Multivariable Calculus for Engineering or Physics</td>
</tr>
</tbody>
</table>

**b) Successful completion of**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>ECOR 2995</td>
<td>Engineering Portfolio</td>
</tr>
</tbody>
</table>

#### Third year

**5. 5.5 credits in:**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCDP 2100</td>
<td>Communication Skills for Engineering Students</td>
</tr>
<tr>
<td>ELEC 3800</td>
<td>Engineering Economics</td>
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<tr>
<td>MAAE 3004</td>
<td>Dynamics of Machinery</td>
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<tr>
<td>MAAE 3202</td>
<td>Mechanics of Solids II</td>
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<tr>
<td>MAAE 3300</td>
<td>Fluid Mechanics II</td>
</tr>
<tr>
<td>MAAE 3400</td>
<td>Applied Thermodynamics</td>
</tr>
<tr>
<td>MAAE 3500</td>
<td>Feedback Control Systems</td>
</tr>
<tr>
<td>MATH 3705</td>
<td>Mathematical Methods I</td>
</tr>
<tr>
<td>MECH 3002</td>
<td>Machine Design and Practice</td>
</tr>
</tbody>
</table>

**Total Credits**

21.0
Bachelor of Engineering (21.0 credits)

**Fourth year**

6. **3.0 credits in:**
   - ECOR 4995 [0.5] Professional Practice
   - MAAE 4102 [0.5] Materials: Strength and Fracture
   - MAAE 4907 [1.0] Engineering Design Project
   - MECH 4003 [0.5] Mechanical Systems Design
   - MECH 4406 [0.5] Heat Transfer
   
   **Total Credits** 21.0

Software Engineering

Bachelor of Engineering (21.0 credits)

**First year**

1. a) **4.0 credits in:**
   - CHEM 1101 [0.5] Chemistry for Engineering Students
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1045 [0.25] Statics
   - ECOR 1046 [0.25] Mechanics
   - ECOR 1047 [0.25] Visual Communication
   - ECOR 1048 [0.25] Dynamics
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
   
   **b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:**
   - ECOR 1055 [0.0] Introduction to Engineering Disciplines I
   - ECOR 1056 [0.0] Introduction to Engineering Disciplines II
   - ECOR 1057 [0.0] Engineering Profession
   
   **2. 0.5 credit in** Basic Science Electives 0.5

2. **0.5 credit in** Complementary Studies Electives 0.5

**Second year**

4. a) **5.0 credits in:**
   - CCDP 2100 [0.5] Communication Skills for Engineering Students
   - COMP 1805 [0.5] Discrete Structures I
   - COMP 2804 [0.5] Discrete Structures II
   - ELEC 2501 [0.5] Circuits and Signals
   - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   - SYSC 2004 [0.5] Object-Oriented Software Development
   - SYSC 2006 [0.5] Foundations of Imperative Programming
   - SYSC 2100 [0.5] Algorithms and Data Structures
   
   **b) Successful completion of:**
   - ECOR 2995 [0.0] Engineering Portfolio

**Third year**

5. **5.0 credits in:**
   - COMP 3005 [0.5] Database Management Systems
   - ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
   - SYSC 3101 [0.5] Programming Languages
   - SYSC 3110 [0.5] Software Development Project
   - SYSC 3120 [0.5] Software Requirements Engineering
   - SYSC 3303 [0.5] Real-Time Concurrent Systems
   - SYSC 3310 [0.5] Introduction to Real-Time Systems
   - SYSC 4001 [0.5] Operating Systems
   - SYSC 4106 [0.5] The Software Economy and Project Management
   
   **6. 0.5 credit from:**
   - ELEC 2507 [0.5] Electronics I
   - ELEC 4705 [0.5] Electronic Materials, Devices and Transmission Media
   or 0.5 credit in Basic Science Electives

**Fourth year**

7. **2.0 credits in:**
   - ECOR 4995 [0.5] Professional Practice
   - SYSC 4101 [0.5] Software Validation
   - SYSC 4806 [0.5] Software Engineering Lab
   - SYSC 4810 [0.5] Introduction to Network and Software Security
   
   **8. 1.0 credit in:**
   - SYSC 4907 [1.0] Engineering Project

9. **1.0 credit from** SYSC or ELEC courses at the 3000 level or above 1.0

10. **1.0 credit from** the list in Item 9 or 1.0 credit in Computer Science Electives for Software Engineering or 1.0 credit in SYSC at the 5000 level (with permission of the department)

11. **0.5 credit in** Complementary Studies Electives 0.5

**Total Credits** 21.0

Sustainable and Renewable Energy Stream A: Smart Technologies for Power Generation and Distribution

Bachelor of Engineering (21.0 credits)

**First year**

1. a) **4.0 credits in:**
   - CHEM 1101 [0.5] Chemistry for Engineering Students
   - ECOR 1041 [0.25] Computation and Programming
   - ECOR 1042 [0.25] Data Management
   - ECOR 1043 [0.25] Circuits
   - ECOR 1044 [0.25] Mechatronics
   - ECOR 1045 [0.25] Statics
   - ECOR 1046 [0.25] Mechanics
   - ECOR 1047 [0.25] Introduction to Network and Software Security
   
   **b) Successful completion of:**
   - ECOR 2995 [0.0] Engineering Portfolio

**Second year**

5. **5.0 credits in:**
   - COMP 3005 [0.5] Database Management Systems
   - ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
   - SYSC 3101 [0.5] Programming Languages
   - SYSC 3110 [0.5] Software Development Project
   - SYSC 3120 [0.5] Software Requirements Engineering
   - SYSC 3303 [0.5] Real-Time Concurrent Systems
   - SYSC 3310 [0.5] Introduction to Real-Time Systems
   - SYSC 4001 [0.5] Operating Systems
   - SYSC 4106 [0.5] The Software Economy and Project Management
   
   **6. 0.5 credit from:**
   - ELEC 2507 [0.5] Electronics I
   - ELEC 4705 [0.5] Electronic Materials, Devices and Transmission Media
   or 0.5 credit in Basic Science Electives

**Third year**

7. **2.0 credits in:**
   - ECOR 4995 [0.5] Professional Practice
   - SYSC 4101 [0.5] Software Validation
   - SYSC 4806 [0.5] Software Engineering Lab
   - SYSC 4810 [0.5] Introduction to Network and Software Security

**Fourth year**

8. **1.0 credit in:**
   - SYSC 4907 [1.0] Engineering Project

9. **1.0 credit from** SYSC or ELEC courses at the 3000 level or above 1.0

10. **1.0 credit from** the list in Item 9 or 1.0 credit in Computer Science Electives for Software Engineering or 1.0 credit in SYSC at the 5000 level (with permission of the department)

11. **0.5 credit in** Complementary Studies Electives 0.5

**Total Credits** 21.0
4. a) 5.0 credits in:

- ELEC 2501 [0.5] Circuits and Signals
- ELEC 2507 [0.5] Electronics I
- ELEC 2602 [0.5] Electric Machines and Power
- ELEC 2607 [0.5] Switching Circuits
- ENVE 2001 [0.5] Process Analysis for Environmental Engineering
- MAAE 2300 [0.5] Fluid Mechanics I
- MAAE 2400 [0.5] Thermodynamics and Heat Transfer
- MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
- MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
- SYSC 2006 [0.5] Foundations of Imperative Programming

b) Successful completion of

- ECOR 2995 [0.0] Engineering Portfolio

5. 5.5 credits in:

- ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
- CCDP 2100 [0.5] Communication Skills for Engineering Students
- ECOR 3800 [0.5] Engineering Economics
- ELEC 3105 [0.5] Electromagnetic Fields
- ELEC 3508 [0.5] Power Electronics
- ELEC 4602 [0.5] Electrical Power Systems
- SREE 3001 [0.5] Sustainable and Renewable Energy Sources
- SREE 3002 [0.5] Electricity: Use, Distribution, Integration of Distributed Generation
- SREE 3003 [0.5] Sustainable and Renewable Electricity Generation
- SYSC 3006 [0.5] Computer Organization
- SYSC 3600 [0.5] Systems and Simulation

6. 3.5 credits in:

- ELEC 4703 [0.5] Solar Cells

- SREE 4001 [0.5] Efficient Energy Conversion
- SREE 4002 [0.5] The Energy Economy, Reliability and Risk
- SYSC 4505 [0.5] Automatic Control Systems I
- SYSC 4602 [0.5] Computer Communications

- 7. 1.0 credit in:

- SREE 4907 [1.0] Energy Engineering Project

- 8. 0.5 credit in Complementary Studies Electives

- 9. 0.5 credit in any 4000-level Engineering course for which prerequisites have been satisfied

Total Credits 21.0

Sustainable and Renewable Energy Stream B: Efficient Energy Generation and Conversion Bachelor of Engineering (21.0 credits)

First year

1. a) 4.0 credits in:

- CHEM 1101 [0.5] Chemistry for Engineering Students
- ECOR 1041 [0.25] Computation and Programming
- ECOR 1042 [0.25] Data Management
- ECOR 1043 [0.25] Circuits
- ECOR 1044 [0.25] Mechatronics
- ECOR 1045 [0.25] Statics
- ECOR 1046 [0.25] Mechanics
- ECOR 1047 [0.25] Visual Communication
- ECOR 1048 [0.25] Dynamics
- MATH 1004 [0.5] Calculus for Engineering or Physics
- MATH 1104 [0.5] Linear Algebra for Engineering or Science
- PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

- ECOR 1055 [0.0] Introduction to Engineering Disciplines I
- ECOR 1056 [0.0] Introduction to Engineering Disciplines II
- MAAE 2202 [0.5] Engineering Graphical Design
- MAAE 2300 [0.5] Fluid Mechanics I
- MAAE 2400 [0.5] Engineering Graphical Design
- SREE 4907 [1.0] Energy Engineering Project

Second year

4. a) 5.0 credits in:

- ELEC 2501 [0.5] Circuits and Signals
- ELEC 2507 [0.5] Electronics I
- ELEC 2602 [0.5] Electric Machines and Power
- ELEC 2607 [0.5] Switching Circuits
- ENVE 2001 [0.5] Process Analysis for Environmental Engineering
- MAAE 2300 [0.5] Fluid Mechanics I
- MAAE 2400 [0.5] Thermodynamics and Heat Transfer
- MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
- MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
- SYSC 2006 [0.5] Foundations of Imperative Programming

b) Successful completion of

- ECOR 2995 [0.0] Engineering Portfolio

Third year

5. 5.5 credits in:

- ECOR 2050 [0.5] Design and Analysis of Engineering Experiments
- CCDP 2100 [0.5] Communication Skills for Engineering Students
- ECOR 3800 [0.5] Engineering Economics
- ELEC 3105 [0.5] Electromagnetic Fields
- ELEC 3508 [0.5] Power Electronics
- ELEC 4602 [0.5] Electrical Power Systems
- SREE 3001 [0.5] Sustainable and Renewable Energy Sources
- SREE 3002 [0.5] Electricity: Use, Distribution, Integration of Distributed Generation
- SREE 3003 [0.5] Sustainable and Renewable Electricity Generation
- SYSC 3006 [0.5] Computer Organization
- SYSC 3600 [0.5] Systems and Simulation

Fourth year

6. 3.5 credits in:

- ELEC 4703 [0.5] Solar Cells

- SREE 4001 [0.5] Efficient Energy Conversion
- SREE 4002 [0.5] The Energy Economy, Reliability and Risk
- SYSC 4505 [0.5] Automatic Control Systems I
- SYSC 4602 [0.5] Computer Communications

- 7. 1.0 credit in:

- SREE 4907 [1.0] Energy Engineering Project

- 8. 0.5 credit in Complementary Studies Electives

- 9. 0.5 credit in any 4000-level Engineering course for which prerequisites have been satisfied

Total Credits 21.0
Students in Engineering programs are covered by the common University regulations regarding graduation, with the following additions and amendments.

**Academic Performance Evaluation for Engineering**

Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar), all undergraduate students including the process of Graduation, with the following additions and amendments:

**Regulations**

The regulations presented in this section apply to all Bachelor of Engineering programs.

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar), with the following additions and amendments:

**Academic Performance Evaluation for Engineering**

1. In Engineering programs, all credits are included in the Major CGPA, making it identical to the Overall CGPA.
2. Students who are not assigned the status Good Standing or Academic Warning will be required to leave the degree with either the status Continue in Alternate (CA) or the status Dismissed from Program (DP).

**Graduation**

Students in Engineering programs are covered by the common University regulations regarding graduation, with the following additions and amendments.

**Course Load**

Regulations regarding Course Load and Overload can be found in the Academic Regulations of the University section of this Calendar. The normal course load in Engineering is defined as the number of credits required in the student's program for the current year status of the students. Since the programs in Engineering require more than 20.0 credits in total, the normal course load is more than 5.0 credits in some years of the program. Registration in more than this number of credits constitutes an overload.

**Co-operative Education Programs**

All Engineering programs are available with or without participation in the Co-operative Education option.

**Year Status Prerequisites**

Year Status in Engineering is used in some course prerequisites to limit access to only those students who have sufficient preparation. In particular, students will not have access to second, third or fourth year engineering, science or mathematics courses until they have achieved second year status. Similarly, to take some specific engineering, science and mathematics courses in third or fourth year, that year status must be achieved. For additional information on prerequisites, see the individual course descriptions.

**2nd year:** Students may not continue into 2000-level (or higher) engineering courses unless all the following requirements are met:

1. Successful completion of all ECOR 1040 series of courses, with a minimum grade of C-
2. Successful completion of all ECOR 1050 series of courses,
3. Successful completion of all MAAE 2700 series of courses, with a minimum grade of C-
4. Successful completion of all MATH 1004, MATH 1104, CHEM 1101 (or CHEM 1001 and CHEM 1002), and PHYS 1004 (or PHYS 1001 and PHYS 1002),
5. Successful completion of all English as a Second Language Requirements, and any additional requirements as determined in the admission process.

**3rd year:** Students may not take courses with third-year status in Engineering as a prerequisite until successful completion of 4.0 credits from the second-year requirements of their current program.

**4th year:** Students may not take courses with fourth-year status in Engineering as a prerequisite until successful completion of all second-year requirements and successful completion of 3.5 credits from the third-year requirements of their current program.

**Time Limit**

The Bachelor of Engineering degree must be completed within eight calendar years of initial registration. Students

### Course Load

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Total Credits</td>
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</table>

### Year Status Prerequisites

**2nd year:**

- Successful completion of all ECOR 1040 series of courses with a minimum grade of C-
- Successful completion of all ECOR 1050 series of courses
- Successful completion of all MAAE 2700 series of courses with a minimum grade of C-
- Successful completion of all MATH 1004, MATH 1104, CHEM 1101 (or CHEM 1001 and CHEM 1002), and PHYS 1004 (or PHYS 1001 and PHYS 1002)
- Successful completion of all English as a Second Language Requirements, and any additional requirements as determined in the admission process.

**3rd year:**

- Students may not take courses with third-year status in Engineering as a prerequisite until successful completion of 4.0 credits from the second-year requirements of their current program.

**4th year:**

- Students may not take courses with fourth-year status in Engineering as a prerequisite until successful completion of all second-year requirements and successful completion of 3.5 credits from the third-year requirements of their current program.
who do not complete their program requirements within this limit will be given the status Continue in Alternate.

**Academic Appeals**
The Engineering Committee on Admission and Studies handles all academic appeals.

**Co-operative Education**
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

**Undergraduate Co-operative Education Policy**

**Admission Requirements**
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

**Employment**
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.
Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Engineering: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Engineering program
2. An overall CGPA of 8.00 or higher;
3. Successfully completed all required first and second year courses before beginning the first work term;
4. Students must be eligible for third-year standing when they return for a study term after their first work placement.

Students in all Bachelor of Engineering concentrations must successfully complete four (4) work terms to obtain the co-op designation.

Work Term Courses:

Aerospace Engineering and Mechanical Engineering, Biomedical and Mechanical Engineering:

- MAAE 3999 [0.0] Co-operative Work Term

Architectural Conservation and Sustainability Engineering:

- CIVE 3999 [0.0] Co-operative Work Term
- or ENVE 3999 [0.0] Co-operative Work Term

Civil Engineering:

- CIVE 3999 [0.0] Co-operative Work Term

Communications Engineering, Computer Systems Engineering and Software Engineering:

- SYSC 3999 [0.0] Co-operative Work Term

Biomedical and Electrical Engineering, Electrical Engineering and Engineering Physics:

- ELEC 3999 [0.0] Co-operative Work Term

Environmental Engineering:

- ENVE 3999 [0.0] Co-operative Work Term

Sustainable and Renewable Energy Engineering:

- ELEC 3999 [0.0] Co-operative Work Term
- MAAE 3999 [0.0] Co-operative Work Term

(depending on student’s stream)

Work/Study Patterns

Aerospace Engineering, Architectural Conservation and Sustainability Engineering, Biomedical and Mechanical Engineering, Civil Engineering, Communications Engineering, Environmental Engineering, Mechanical Engineering, Sustainable and Renewable Energy Engineering

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Electrical Engineering, Engineering Physics

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Advances for admission to programs for which the demand for places by qualified applicants exceeds the stated minimum requirements. Some programs may also require specific course prerequisites and prerequisite course average. These averages may be considerably higher than the stated minimum requirements; be eligible for work in Canada (for off-campus work placements).

Note that meeting the above entrance requirements only establishes eligibility for admission to the program. Enrolment in the co-op option may be limited at the discretion of the department.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Aerospace Engineering (AERO) Courses
AERO 2001 [0.5 credit]
Aerospace Engineering Graphical Design
Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Assignments will make extensive use of Computer-Aided Design (CAD) and will include the production of detail and assembly drawings from actual physical models.
Includes: Experiential Learning Activity
Also listed as MAAE 2001.
Prerequisite(s): Second-year status in Engineering.
Lectures and tutorials two hours a week, laboratory four hours a week.

AERO 3002 [0.5 credit]
Aerospace Design and Practice
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2001 and third-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.
AERO 3101 [0.5 credit]
Lightweight Structures
Structural concepts; theory of elasticity; bending, torsion and shear in thin-walled beams having single or multi-cell sections; work and energy principles; deformation and force analysis of advanced structures, including stiffened thin-wall panels; finite element methods. Stability and buckling of thin-walled structures.
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 3202.
Lectures three hours a week; problem analysis one hour a week.

AERO 3240 [0.5 credit]
Orbital Mechanics
Prerequisite(s): MAAE 2101.
Lectures three hours per week, tutorial one hour per week.

AERO 3700 [0.5 credit]
Aerospace Materials
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2700.
Lectures three hours a week; problem analysis one hour a week.

AERO 3841 [0.5 credit]
Spacecraft Design I
Design of spacecraft and spacecraft subsystems with emphasis on mission requirements and current design methods: spacecraft configuration, payload, structural, attitude control, thermal, power, and other related subsystems. Spacecraft integration and testing.
Includes: Experiential Learning Activity
Prerequisite(s): AERO 3240.
Lectures three hours a week, tutorials or laboratories three hours per week.

AERO 4003 [0.5 credit]
Aerospace Systems Design
Stress and deflection analysis; fatigue, safe life, damage tolerant design. Propulsion systems integration; landing gear; control and other subsystems. Mechanical component design. Airworthiness regulations and certification procedures. Weight and cost estimation and control. System reliability. Design studies of aircraft or spacecraft components.
Includes: Experiential Learning Activity
Prerequisite(s): AERO 3002 and fourth-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

AERO 4009 [0.5 credit]
Aviation Management and Certification
Product development, quality control. Strategic organizational analysis and design. Airworthiness, type certification and planning, delegation of authority, airplane flight manual. Aerospace system design and safety. Prerequisite(s): fourth-year status in Engineering.
Lectures three hours per week.

AERO 4300 [0.5 credit]
Acoustics and Noise Control
Behaviour of compressible fluids, sound waves and properties of sound sources; measurement of sound; human perception of sound; prediction methods based on energy considerations; sound propagation in realistic environments: outdoors, rooms, ducts; absorption and transmission loss, noise control; case studies.
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 3004 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4302 [0.5 credit]
Aerodynamics and Heat Transfer
Differential equations of motion. Viscous and inviscid regions. Potential flow: superposition; thin airfoils; finite wings; compressibility corrections. Viscous flow: thin shear layer approximation; laminar layers; transition; turbulence modeling. Convective heat transfer: free versus forced convection; energy and energy integral equations; turbulent diffusion.
Prerequisite(s): MAAE 3300 or MECH 3310. Also offered at the graduate level, with different requirements, as MECH 5000, for which additional credit is precluded.
Lectures three hours a week.

AERO 4304 [0.5 credit]
Computational Fluid Dynamics
Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.
AERO 4306 [0.5 credit]
Aerospace Vehicle Performance
Morphology of aircraft and spacecraft. Performance analysis of fixed wing aircraft: drag estimation, propulsion, take-off, climb and landing, endurance, payload/range, manoeuvres; operational economics. Performance analysis of rotor craft: rotor-blade motion, hovering and vertical ascent, forward flight, and autorotation. Rocket propulsion; escape velocity; orbital dynamics.
Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4308 [0.5 credit]
Aircraft Stability and Control
Static stability and control: equilibrium requirements; longitudinal stability requirements; neutral points; manoeuvring flight; control forces and control requirements; lateral static stability certification requirements. Dynamic stability: axis systems; governing equations; phugoid and short period modes; lateral dynamic modes. Closed-loop control.
Prerequisite(s): MAAE 3500 and fourth-year status in Engineering.
Also offered at the graduate level, with different requirements, as MECH 5101, for which additional credit is precluded.
Lectures three hours a week.

AERO 4402 [0.5 credit]
Aerospace Propulsion
Propulsion requirements, effects of Mach Number, altitude, and application; basic propeller theory; propeller, turboshaft, turbojet, turbofan and rocket; cycle analysis and optimization for gas turbine power plant; inter-relations between thermodynamic, aerodynamic and mechanical designs; rocket propulsion; selection of aeroengines.
Precludes additional credit for MECH 4401.
Prerequisite(s): MAAE 2400, (MAAE 3300 or MECH 3310), and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4442 [0.5 credit]
Transatmospheric and Spacecraft Propulsion
Planetary/interplanetary environments and effects. Launch and spacecraft propulsion: liquid/solid/hybrid rockets, ram/scramjets, combined cycle engines, electrothermal, electromagnetic, electrostatic, nuclear, and propellantless propulsion. Trajectory analysis, multi-staging, separation dynamics. Advanced engine concepts.
Prerequisite(s): MAAE 2400, (MAAE 3300 OR MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4446 [0.5 credit]
Heat Transfer for Aerospace Applications
Precludes additional credit for MECH 4406.
Prerequisite(s): MAAE 2400 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4540 [0.5 credit]
Spacecraft Attitude Dynamics and Control
Prerequisite(s): AERO 3240 and MAAE 3500 and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4602 [0.5 credit]
Introductory Aeroelasticity
Review of structural behaviour of lifting surface elements; structural dynamics, Laplace Transforms, dynamic stability; modal analysis; flutter, Theodorsen's theory; flutter of a typical section; wing flutter, T-tail flutter, propeller whirl flutter; gust response; buffeting, limit cycle flutter.
Prerequisite(s): (MAAE 3300 or MECH 3310) and SYSC 3600 and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4607 [0.5 credit]
Rotorcraft Aerodynamics and Performance
Prerequisite(s): MAAE 3004 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours per week.

AERO 4608 [0.5 credit]
Composite Materials
Reinforcing mechanisms in composite materials; material properties. Strength and elastic constants of unidirectional composites; failure criteria. Analysis of laminated plates; bending and eigenvalue problems. Environmental effects and durability. Damage tolerance. Design of composite structures.
Prerequisite(s): MAAE 2202 and fourth-year status in Engineering.
Lectures three hours a week.
AERO 4609 [0.5 credit]
Joining of Materials
Design for joining: base material and component geometry. Selection of joining method and filler material; Adhesive bonding; Soldering; Brazing; Diffusion bonding; Resistance welding; Fusion welding (GTAW, EB, laser and plasma arc); Friction welding; NDE. Emphasis on Aerospace materials and applications. Prerequisite(s): MAAE 2700 and fourth-year status in Engineering. Lectures three hours per week.

AERO 4842 [0.5 credit]
Spacecraft Design II
System view of spacecraft. Requirements definition. Spacecraft payloads (remote sensing, imaging systems, astronomy instrumentation etc.). Exploration missions. Implications for systems and missions. Space system design case studies. Includes: Experiential Learning Activity Precludes additional credit for AERO 4802 (no longer offered). Prerequisite(s): AERO 3841 and fourth-year status in Engineering. Lectures three hours a week, tutorials or laboratories one hour per week.

Civil Engineering (CIVE) Courses
CIVE 2004 [0.5 credit]
GIS, Surveying, CAD and BIM

CIVE 2005 [0.5 credit]
Architectural Technology 2
Technical issues involved in architectural design of buildings from ancient times to the present. Technological innovation and materials related to structural developments, and the organization and design of structures. Basic concepts of calculus, equilibrium, and mechanics of materials. Precludes additional credit for Not eligible for use for Bachelor of Engineering degree requirements. Prerequisite(s): ARCC 2202. Lectures three hours a week, laboratory three hours a week.

CIVE 2101 [0.5 credit]
Engineering Mechanics
Virtual work. Friction. Relative motion of particles. Kinematics of a rigid body: translation, rotation; general plane motion; absolute and relative motion. Kinetics of a rigid body: equations of motion; work-energy; impulse-momentum; conservation of momentum and energy. Conservative forces and potential energy. Precludes additional credit for MAAE 2101. Prerequisite(s): MATH 1004, MATH 1104 and second-year status in Engineering. Lectures three hours a week, problem analysis three hours a week.

CIVE 2200 [0.5 credit]
Mechanics of Solids I

CIVE 2700 [0.5 credit]
Civil Engineering Materials
CIVE 3202 [0.5 credit]
Mechanics of Solids II
Precludes additional credit for MAAE 3202.
Prerequisite(s): CIVE 2200.
Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

CIVE 3203 [0.5 credit]
Introduction to Structural Analysis
Concepts and assumptions for structural analysis: framed structures; joints; supports; compatibility and equilibrium; stability and determinacy; generalized forces and displacements. Principle of Virtual Work: unknown force calculations; influence lines. Complementary Virtual Work; displacement calculations, indeterminate analysis. Introduction to the Stiffness Method of Analysis.
Prerequisite(s): CIVE 2200 and MATH 1004.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3204 [0.5 credit]
Introduction to Structural Design
Prerequisite(s): CIVE 2200.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3205 [0.5 credit]
Design of Structural Steel Components
Introduction to CAN/CSA - S16, design and behaviour concepts; shear lag, block shear, local plate buckling, lateral torsional buckling, instantaneous centre, inelastic strength and stability. Design of tension members, axially loaded columns, beams, beam-columns, simple bolted and welded connections.
Prerequisite(s): CIVE 2200 and CIVE 2700.
Recommended prerequisite: CIVE 3204.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3206 [0.5 credit]
Design of Reinforced Concrete Components
Introduction to CAN/CSA - A23.3; design and behaviour concepts; flexural analysis at service loads; shear, bond, Whitney stress block, under, over reinforced behaviour, ultimate strength. Flexural design of singly reinforced, doubly reinforced T-beams, one-way slabs. Shear design for beams. One-way, two-way slab systems, columns.
Prerequisite(s): CIVE 2200 and CIVE 2700.
Recommended prerequisite: CIVE 3204.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3207 [0.5 credit]
Historic Site Recording and Assessment
Methods of heritage documentation including hand recording, photography, rectified photography, total station, gps, photogrammetry, and laser scanning. Non-destructive testing techniques; environmental assessment tools for determining air quality and energy efficiency. Multidisciplinary teams for all project work.
Includes: Experiential Learning Activity
Also listed as ARCN 4100.
Prerequisite(s): third-year status in B.Eng. in Architectural Conservation and Sustainability Engineering.
Lectures three hours a week, lab or field work two hours a week.

CIVE 3208 [0.5 credit]
Geotechnical Mechanics
Includes: Experiential Learning Activity
Also listed as ERTH 4107.
Prerequisite(s): third-year status in Engineering, or permission of the department. Additional recommended background: ERTH 2404 or equivalent.
Lectures three hours a week, laboratory three hours alternate weeks.

CIVE 3209 [0.5 credit]
Building Science
Building envelope design and analysis; applied heat transfer and moisture transport; solar radiation; hygrothermal modelling; control of rain, air, vapour, and heat; materials for wall, window, curtain wall, roof, and foundation systems; building envelope retrofit case studies; building code; envelope construction.
Prerequisite(s): MAAE2400 and third-year status in B.Eng. Architectural Conservation and Sustainability Engineering or in Civil Engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.
CIVE 3304 [0.5 credit]
Transportation Engineering and Planning
Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion, human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods. Also listed as GEOG 4304.
Prerequisite(s): third-year status in Engineering, or permission of the Department.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

CIVE 4200 [0.5 credit]
Matrix Analysis of Framed Structures
Prerequisite(s): CIVE 3203.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4201 [0.5 credit]
Finite Element Methods in Civil Engineering
Introduction to the theory and application of finite element methods. The relationship with virtual work, Rayleigh-Ritz, system of linear equations, polynomial interpolation, numerical integration, and theory of elasticity is explored. Isoparametric formulations of structural and plane elements are examined. Geotechnical and nonlinear problems are introduced.
Prerequisite(s): CIVE 2200 and fourth year status in engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4202 [0.5 credit]
Wood Engineering
Also listed as ARCC 4202.
Prerequisite(s): CIVE 2200, CIVE 2700 and third-year status in B.Eng.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4208 [0.5 credit]
Geotechnical Engineering
Prerequisite(s): CIVE 3208.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4209 [0.5 credit]
Highway Engineering
Highway planning; highway location and geometric design; traffic engineering; highway capacity; soil classifications; subgrade and base materials; highway drainage; frost action; structural design of rigid and flexible pavements; highway economics and finance; maintenance and rehabilitation.
Prerequisite(s): Fourth year status in engineering.
Recommended prerequisites: CIVE 2004, CIVE 3304 and CIVE 3208.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4301 [0.5 credit]
Foundation Engineering
A critical study of the theories in soil mechanics and their application to the solution of geotechnical engineering problems. Field investigations, laboratory and field testing, shallow foundations, special footings, mat foundations, pile foundations and excavations. Discussion of new methods and current research.
Prerequisite(s): CIVE 4208.
Lectures three hours a week, laboratory three hours alternate weeks.

CIVE 4302 [0.5 credit]
Reinforced and Prestressed Concrete Design
Reinforced concrete shear and torsion design. Two-way slab design by Direct Design and Equivalent Frame Method. Behaviour and design of slender reinforced concrete columns. Prestressed concrete concepts; flexural analysis and design; shear design; anchorage zone design; deflection and prestress loss determination.
Prerequisite(s): CIVE 3202, CIVE 3203 and CIVE 3206.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4303 [0.5 credit]
Urban Planning
A systematic approach to urban planning; urban sprawl; data collection; forecasting; standards; space requirements; land use; zoning; transportation; land development; site selection; land capability; layout; evaluation; housing; urban renewal and new towns.
Prerequisite(s): fourth-year status in Engineering, second-year standing in B.A.S. (Urbanism), or permission of the Department.
Lectures three hours a week, problem analysis three hours alternate weeks.
CIVE 4307 [0.5 credit]
Municipal Hydraulics
Prerequisite(s): MAAE 2300.
Lectures three hours a week, problem analysis one and a half hours a week.

CIVE 4308 [0.5 credit]
Behaviour and Design of Steel Structures
Behaviour and design of open web steel joists, steel and composite decks, composite beams and columns, stud girders, and plate girders. Design of moment connections, base plates and anchor bolts, and bracing connections. Stability of rigid and braced frames. Design for lateral load effects.
Prerequisite(s): CIVE 3205 and fourth-year status in Engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4400 [0.5 credit]
Construction/Project Management
Systems approach to project planning and control. Analysis of alternative network planning methods: CPM, precedence and PERT; planning procedure; computer techniques and estimating; physical, economic and financial feasibility; implementation feedback and control; case studies.
Prerequisite(s): fourth-year status in Engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4403 [0.5 credit]
Masonry Design
Introduction to structural design in masonry. Properties of masonry materials and assemblages. Behaviour and design of beams, walls and columns. Selected topics including veneer wall systems, differential movement, workmanship, specifications, inspection, maintenance and repair. Lowrise and highrise building design.
Prerequisite(s): CIVE 3204, CIVE 3206 and fourth-year status in Engineering or permission of the Department. Also offered at the graduate level, with different requirements, as CIVE 5200, for which additional credit is precluded.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4407 [0.5 credit]
Municipal Engineering
Prerequisite(s): fourth-year status in Engineering.
Lectures three hours a week, problem analysis one and a half hours a week.

CIVE 4500 [0.5 credit]
Computer Methods in Civil Engineering
Advanced software development for Civil Engineering applications. Examples may be chosen from surveying, transportation, geotechnical and/or structural engineering. Software technologies include object-oriented programming, data base management, Internet-based applications and graphical user interfaces.
Prerequisite(s): Fourth-year status in Engineering.
Also offered at the graduate level, with different requirements, as CIVE 5602, for which additional credit is precluded.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4601 [0.5 credit]
Building Pathology and Rehabilitation
Deterioration mechanisms for concrete, timber, steel and masonry structures. Identification of design deficiencies; criteria for selection and design of rehabilitation systems. Design techniques to reduce deterioration in new construction and historical structures.
Includes: Experiential Learning Activity Also listed as ARCN 4200.
Prerequisite(s): CIVE 3207 and fourth-year status in B.Eng. in Architectural Conservation and Sustainability Engineering.
Lectures three hours a week, lab/field work two hours a week.

CIVE 4614 [0.5 credit]
Building Fire Safety
Understanding fire-structure interaction and the concepts of fire severity and resistance; behaviour of steel, concrete, and timber buildings exposed to fires; compartment fire dynamics; correlations and computer models to predict fire dynamics; fire retardants; laboratory-scale fire experiments; performance-based approach for building fire safety design.
Prerequisite(s): MAAE 2400 and fourth-year status in Engineering, or permission of the Department.
Lectures three hours a week, problem analysis and laboratories one and one-half hours per week.
CIVE 4907 [1.0 credit]
Engineering Research Project
A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Engineering and permission of the department.

CIVE 4917 [0.5 credit]
Undergraduate Directed Study
Student carries out a study, analysis, and solution of an engineering problem which results in a written final report. Carried out under close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Department and completion of, or concurrent registration in, CIVE 4918.

CIVE 4918 [1.0 credit]
Design Project
Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.
Includes: Experiential Learning Activity
Prerequisite(s): ECOR 3800 and fourth-year status in Engineering. Certain projects may have additional requirements.
Lectures two hours alternate weeks, problem analysis three hours a week.

Electronics (ELEC) Courses
ELEC 1908 [0.5 credit]
First Year Project
A practical introduction to engineering design. Students work in small teams to specify, design and implement a system, formally managing the project progress and submitting oral and written reports. Professionalism: engineering ethics; health and safety. Technology, society and the environment.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Engineering Physics program.
Lectures and tutorials three hours a week, laboratory four hours a week.

ELEC 2501 [0.5 credit]
Circuits and Signals
Includes: Experiential Learning Activity
Prerequisite(s): MATH 1005 (may be taken concurrently) and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2507 [0.5 credit]
Electronics I
Qualitative semiconductor physics, leading to the diode equation. Diode applications. Operational amplifiers and their application in feedback configurations including active filters. Introduction to bipolar transistors and MOSFETs, analysis of biasing circuits. Transistor applications including small signal amplifiers.
Includes: Experiential Learning Activity
Prerequisite(s): MATH 1005, ELEC 2501, and second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2602 [0.5 credit]
Electric Machines and Power
Modeling and analysis of basic electric power systems. Single-phase and three-phase circuits: real and reactive power, per-phase analysis, power factor correction. Electro-mechanical energy conversion: operation, characteristics and analysis of transformers, DC-, induction-, and synchronous electric machines. Motor and generator operation.
Includes: Experiential Learning Activity
Prerequisite(s): PHYS 1004 and ELEC 2501, and second-year status in Engineering.
Lectures 3 hours per week. Laboratory and problem analysis 3 hours per week alternate weeks.
ELEC 2607 [0.5 credit]

Switching Circuits
Prerequisite(s): PHYS 1004 or PHYS 1002 and second-year status in Engineering.
Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 2607 [0.5 credit]

ELEC 3105 [0.5 credit]

Electromagnetic Fields
Prerequisite(s): MATH 1005, MATH 2004, and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 3500 [0.5 credit]

Digital Electronics
Digital circuit design using verilog and logic synthesis, the electronic properties of logic gates, electrical interfacing between logic families, asynchronous to synchronous interfacing, clock distribution and timing, VLSI design options. Students implement substantial circuits with field-programmable gate arrays. Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2507 and ELEC 2607.
Lectures three hours a week, laboratory three hours a week.

ELEC 3508 [0.5 credit]

Power Electronics
Power semiconductor devices: Thyristor, GTO, IGBT, SiC, GaN. Converter circuits: controlled AC to DC rectifiers, choppers, DC to AC inverters, AC voltage controllers. Protection of conversion circuits. Applications to high-efficiency control of electric machines and electromechanical energy conversion devices. Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2507 and ELEC 2602.
Lectures three hours per week, laboratories/problem analysis three hours per week.

ELEC 3509 [0.5 credit]

Electronics II
Introduction to semiconductor devices and ICs. DC, AC and switching properties of BJTs. Linear amplifiers; bandwidth considerations; two-port analysis. Large signal amplifiers; power amplifiers; transformerless circuits. Feedback and operational amplifiers; gain, sensitivity, distortion and stability. Filter design. Oscillators. Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2507.
Lectures three hours a week, laboratory three hours a week.

ELEC 3605 [0.5 credit]

Electrical Engineering
DC circuits: elements, sources, analysis. Single phase AC circuits: phasors, RLC circuits, real and reactive power, impedance, network analysis, three phase systems. Power transformers. DC motors: operation and characteristics. AC motors: single phase and three phase. Includes: Experiential Learning Activity
Prerequisite(s): MATH 1005 and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.
Lectures three hours a week, problem analysis 1.5 hours a week.

ELEC 3907 [0.5 credit]

Engineering Project
Student teams work on open-ended projects based on previously acquired knowledge. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, a series of project reports, and oral presentations, and a comprehensive final report are required. Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2607, ELEC 2507, and ((ECOR 1051, ECOR 1052, ECOR 1053 and ECOR 1054) or (ECOR 2606)), and enrolment in the Electrical Engineering program.
Lecture two hours per week, laboratory six hours per week.

ELEC 3908 [0.5 credit]

Physical Electronics
Fundamentals of device physics and operation of the pn junction, bipolar transistor and MOSFET. Basic integrated circuit processing and application to diodes, BJTs and MOSFETs. Correlation between processing, structure, operation and modeling. Consideration of parasitic and small geometry effects, reliability and process variation. Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2507.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.
ELEC 3909 [0.5 credit]
Electromagnetic Waves
Maxwell's equations and EM wave solutions. Polarization. Poynting vector. EM waves in dielectrics and conductors; skin depth. Reflection and refraction. Standing waves. Fresnel relations, Brewster angle. Transmission lines. Line termination, basic impedance matching and transformation. Smith charts. Introduction to guided waves; slab waveguide. Includes: Experiential Learning Activity Precludes additional credit for PHYS 3308. Prerequisite(s): ELEC 3105 or permission of the Department. Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ELEC 4502 [0.5 credit]
Microwave Circuits
Introduction to microwave semiconductor devices, microwave passive components, microwave integrated circuit technology, and microwave circuit measurements. Basic network theory and scattering matrix description of circuits. Design of matching networks, filters, amplifiers and oscillators at microwave frequencies. Includes: Experiential Learning Activity Prerequisite(s): ELEC 4503; may be taken concurrently. Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4503 [0.5 credit]
Radio Frequency Lines and Antennas
Introduction to distributed circuits, travelling and standing waves, reflection coefficient, SWR, impedance transformation, Smith charts. Introduction to transmission lines; coaxial, rectangular waveguide, resonators, optical fibers. Introduction to antennas; gain, directivity, effective area. Introduction to linear arrays. Includes: Experiential Learning Activity Prerequisite(s): ELEC 3909. Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4504 [0.5 credit]
Avionics Systems
Electromagnetic spectrum. Air data sensing, display. Communications systems. Navigation and landing systems; ground-based, inertial and satellite systems. Airborne radar. Guidance, control for aircraft, autopilots; stability augmentation; active control; sensor requirements; display techniques. Aircraft power systems. Safety systems. Vehicle/systems integration, certification. Precludes additional credit for AERO 4504 (no longer offered). Prerequisite(s): fourth-year status in Engineering. Not open to students in Electrical Engineering, Computer Systems Engineering, Engineering Physics or Communications Engineering. Lecture three hours a week.

ELEC 4505 [0.5 credit]
Telecommunication Circuits
A course of study of the commonly used circuit components in modern telecommunication systems. Both analog and digital systems are included. The design of the hardware is emphasized. Examples are drawn from broadcasting, telephony and satellite systems. Includes: Experiential Learning Activity Prerequisite(s): ELEC 3509 and (SYSC 3501 or SYSC 3503). Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4506 [0.5 credit]
Computer-Aided Design of Circuits and Systems
Basic principles of Computer-Aided Design tools used for analysis and design of communication circuits and systems. Frequency and time-domain analysis. Noise and distortion analysis. Transmission line effects. Sensitivity analysis and circuit performance optimization. Digital simulation. Includes: Experiential Learning Activity Prerequisite(s): fourth-year status in Engineering. Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4509 [0.5 credit]
Communication Links
Fundamentals; decibel, intermodulation, 1dB compression, dynamic range, SNR, noise figure, noise temperature, antenna gain, EIRP, G/T. Line-of-sight links; receiver, diversity, fade margin. Satellite links; link calculations, multiple accessing, earth stations. Fiber links, fiber types, sources, detectors, systems. Prerequisite(s): fourth-year status in Engineering or permission of the Department. Lectures three hours a week, problem analysis three hours alternate weeks.
ELEC 4600 [0.5 credit]
Radar and Navigation
Prerequisite(s): fourth-year status in Engineering or permission of the Department.
Lectures three hours a week, problem analysis 3 hours alternate weeks.

ELEC 4601 [0.5 credit]
Microprocessor Systems
Interfacing aspects in microprocessor systems. Microprocessors and bus structures, internal architecture, instruction set and pin functions. Memory interfacing, input-output, interrupts, direct memory accesses, special processors and multiprocessor systems.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 3006 (no longer offered), SYSC 3320, SYSC 3601.
Prerequisite(s): ELEC 2607 and one of SYSC 2003 or SYSC 3003 (no longer offered) or SYSC 3006 or permission of the Department.
Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4602 [0.5 credit]
Electrical Power Systems
Prerequisite(s): ELEC 2602 or ELEC 3605.
Lectures three hours a week, problem analysis two hours a week.

ELEC 4609 [0.5 credit]
Integrated Circuit Design and Fabrication
Introduction to nMOS IC design: static logic gates, noise margin, transmission gates, factors influencing switching speed, dynamic logic, input protection, output buffers, circuit simulation with SPICE. Laboratory work includes design and layout of a simple nMOS IC that is fabricated and returned for testing.
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3500 or ELEC 3908.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4700 [0.5 credit]
The Physics and Modeling of Advanced Devices and Technologies
Prerequisite(s): ELEC 3908.
Lectures three hours a week, problem analysis two hours alternate weeks.

ELEC 4702 [0.5 credit]
Fiber Optic Communications
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3908 and ELEC 3909.
Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4703 [0.5 credit]
Solar Cells
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2501 and ELEC 2507 and fourth-year status in Sustainable and Renewable Energy Engineering, or ELEC 2501 and ELEC 2507 and fourth-year status in Engineering with permission of the instructor.
Lectures three hours per week, laboratories/problem analysis three hours alternate weeks.

ELEC 4704 [0.5 credit]
Nanoscale Technology and Devices
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3908, ELEC 3909.
Lectures three hours a week, problem analysis 1.5 hours a week.
ELEC 4705 [0.5 credit]
Electronic Materials, Devices and Transmission Media
Review of solid-state theory, conductors, semiconductors, superconductors, insulators, and optical and magnetic properties. Devices used in modern high speed electronic and communication systems: transistors, lasers, photodiodes, fiber optics, Josephson junctions. Implications of material properties on fabrication and operation of devices and circuits.
Precludes additional credit for ELEC 3908.
Prerequisite(s): fourth-year status in Engineering. Not available for credit to students in Electrical Engineering or Engineering Physics.
Lectures three hours a week.

ELEC 4706 [0.5 credit]
High-Speed Electronics: Circuits and Systems
Challenges faced in designing high-speed electronic circuits and systems. Fundamentals of high-speed Tx/Rx architectures including: timing and HDL, PLL/DLL, Tx drivers, interface to photonic components, channel modeling, Rx channel, choice of modulation, equalization, clock and data recovery. VHDL hardware and CAD software laboratories.
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3500.
Lectures three hours a week, laboratory three hours a week.

ELEC 4707 [0.5 credit]
Analog Integrated Electronics
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3509.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4708 [0.5 credit]
Advanced Digital Integrated Circuit Design
Advanced Verilog, test benches. VLSI design based on CMOS technology, characteristics of CMOS logic circuits, cell libraries, building blocks, structured design, testing, Computer-Aided Design tools. Laboratory emphasis on design synthesis from Verilog.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Engineering and ELEC 3500 or permission of the Department.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4709 [0.5 credit]
Integrated Sensors
Overview of sensor technologies with emphasis on devices suitable for integration with silicon integrated circuits. Sensor design and fabrication principles including signal conditioning; discussion of automotive, biomedical, and other instrumentation applications.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4906 [0.5 credit]
Special Topics
At the discretion of the Engineering Faculty Board, a course dealing with selected advanced topics of interest to students in Biomedical and Electrical, Communications, Computer Systems, Electrical and Software Engineering and Engineering Physics may be offered.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4907 [1.0 credit]
Engineering Project
Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3907, ECOR 3800, ECOR 4995 (may be taken concurrently) and fourth-year status in Engineering.
Lecture one hour a week, laboratory seven hours a week.

ELEC 4908 [1.0 credit]
Engineering Physics Project
Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project approved for Engineering Physics. Lectures devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): ECOR 3800, fourth-year status in Engineering and ECOR 4995 (may be taken concurrently).
Certain projects may have additional prerequisites or corequisites.
Lecture one hour a week, laboratory seven hours a week.
Engineering Core (ECOR) Courses

ECOR 1010 [0.5 credit]
Introduction to Engineering
Technology, society and the environment. Graphical design communication: sketching, graphical projections; CAD. Managing data: statistical methods; spreadsheets. Design analysis: matrix programming software; symbolic computer algebra systems. Design process: proposals; reports; presentations; reporting software. Includes: Experiential Learning Activity
Precludes additional credit for ECOR 1000 (no longer offered), ECOR 1047, ECOR 1054.
Lectures four hours per week, laboratories two hours per week.

ECOR 1041 [0.25 credit]
Computation and Programming
Precludes additional credit for COMP 1005, COMP 1405, ECOR 1051, ECOR 1606, SYSC 1005.
Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.
Lectures three hours per week, laboratories three hours per week.

ECOR 1042 [0.25 credit]
Data Management
Precludes additional credit for COMP 1005, COMP 1405, ECOR 1051, ECOR 1606, SYSC 1005.
Prerequisite(s): ECOR 1041 with a minimum grade of C- and MATH 1004 (may be taken concurrently). This course may not be taken concurrently with ESLA 1300 or ESLA 1500.
Lectures three hours per week, laboratories three hours per week.

ECOR 1043 [0.25 credit]
Circuits
Precludes additional credit for ECOR 1052.
Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.
Lectures three hours per week, laboratories three hours per week.

ECOR 1044 [0.25 credit]
Mechatronics
Precludes additional credit for ECOR 1052.
Prerequisite(s): ECOR 1041 with a minimum grade of C- and ECOR 1043 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500.
Lectures three hours per week, laboratories three hours per week.

ECOR 1045 [0.25 credit]
Statics
Precludes additional credit for ECOR 1053, ECOR 1101.
Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.
Lectures three hours per week, laboratories three hours per week.

ECOR 1046 [0.25 credit]
Mechanics
2D truss analysis (method of joints/sections). Normal stress/strain and shear stress/strain. 2D frames and machines. Internal loads - normal, shear and moment at a point. Shear and moment diagrams.
Precludes additional credit for ECOR 1053.
Prerequisite(s): ECOR 1045 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500.
Lectures three hours per week, laboratories three hours per week.

ECOR 1047 [0.25 credit]
Visual Communication
Precludes additional credit for ECOR 1054, ECOR 1010.
Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.
Lectures three hours per week, laboratories three hours per week.
ECOR 1048 [0.25 credit]

Dynamics
Kinematics and kinetics of a particle. Principle of work and energy. Conservation of energy, conservative forces, potential energy. Principles of impulse and momentum, conservation of momentum for a system of particles. Precludes additional credit for ECOR 1054, ECOR 1101. Prerequisite(s): ECOR 1045 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1051 [0.5 credit]
Fundamentals of Engineering I
Software development as an engineering discipline, using a modern programming language. Tracing and visualization of program execution. Testing and debugging. Data management: digital representation of numbers; numerical algorithms; storing data in files; container data types: sequences, sets, maps. Includes: Experiential Learning Activity
Precludes additional credit for COMP 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1606, SYSC 1005. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1052 [0.5 credit]
Fundamentals of Engineering II
Precludes additional credit for ECOR 1043, ECOR 1044. Prerequisite(s): ECOR 1051 (may be taken concurrently). Lectures three hours per week, laboratories three hours per week.

ECOR 1053 [0.5 credit]
Fundamentals of Engineering III
Components of forces. Particle equilibrium and free body diagrams. Moments and cross product. Centre of gravity and centroids. Rigid body equilibrium. 2D Truss analysis (method of joints/sections). Normal stress/strain and Shear stress/strain. 2D frames and machines. Includes: Experiential Learning Activity
Precludes additional credit for ECOR 1045, ECOR 1046, ECOR 1101. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1054 [0.5 credit]
Fundamentals of Engineering IV
Precludes additional credit for ECOR 1010, ECOR 1047, ECOR 1048. Prerequisite(s): ECOR 1053 (may be taken concurrently). Lectures three hours per week, laboratories three hours per week.

ECOR 1055 [0.0 credit]
Introduction to Engineering Disciplines I
Overview of professional activities oriented to the student's discipline of study: Architectural Conservation and Sustainability. Civil and Environmental. Aerospace and Mechanical. Electrical. Engineering Physics. Computer Systems, Communications and Software. Biomedical (Electrical and Mechanical). Sustainable and Renewable Energy. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures 1.5 hours per week.

ECOR 1056 [0.0 credit]
Introduction to Engineering Disciplines II
Selected lectures designed to provide students with exposure to the breadth of Engineering disciplines.
Online course.

ECOR 1057 [0.0 credit]
Engineering Profession
Online course

ECOR 1101 [0.5 credit]
Mechanics I
Precludes additional credit for ECOR 1045, ECOR 1048, ECOR 1053. Prerequisite(s): MATH 1004 and MATH 1104.

Lectures three hours a week, tutorials and problem analysis three hours a week.
ECOR 1606 [0.5 credit]
**Problem Solving and Computers**
Introduction to engineering problem solving. Defining and modeling problems, designing algorithmic solutions, using procedural programming, selection and iteration constructs, functions, arrays, converting algorithms to a program, testing and debugging. Program style, documentation, reliability. Applications to engineering problems; may include numerical methods, sorting and searching.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 1005, SYSC 1100 (no longer offered), SYSC 1102 (no longer offered), COMP 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051.
Lectures three hours a week, laboratory three hours a week.

ECOR 2050 [0.5 credit]
**Design and Analysis of Engineering Experiments**
Includes: Experiential Learning Activity
Prerequisite(s): 2nd Year Status in Engineering.
Lectures three hours a week, problem analysis and laboratory three hours a week.

ECOR 2606 [0.5 credit]
**Numerical Methods**
Numerical algorithms and tools for engineering and problem solving. Sources of error and error propagation, solution of systems of linear equations, curve fitting, polynomial interpolation and splines, numerical differentiation and integration, root finding, solution of differential equations. Software tools.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2606 (no longer offered).
Prerequisite(s): MATH 1005 and (ECOR 1606 or SYSC 1005) and (ECOR 1010 or ELEC 1908).
Lectures three hours a week, laboratory one hour a week.

ECOR 2995 [0.0 credit]
**Engineering Portfolio**
Students will be asked to reflect on their skills, strengths and weaknesses as preparation for the professional practice course. Engineering students must submit samples of their writing and communications (including, for example, laboratory reports and professional memos).

Online

ECOR 3800 [0.5 credit]
**Engineering Economics**
Introduction to engineering economics; cash flow calculations; methods of comparison of alternatives; structural analysis; replacement analysis; public projects; depreciation and income tax; effects of inflation; sensitivity analysis; break-even analysis; decision making under risk and uncertainty.
Prerequisite(s): third-year status in Engineering or (ECOR 1051, ECOR 1052, ECOR 1053 and ECOR 1054).
Lectures three hours a week.

ECOR 4995 [0.5 credit]
**Professional Practice**
Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and responsibilities, practice within the discipline and its relationship with other disciplines and to society, health and safety, environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized.
Precludes additional credit for MAAE 4905, CIVE 4905, SYSC 3905 or ELEC 3905 (all no longer offered).
Prerequisite(s): ECOR 2995 and fourth-year status in Engineering.
Lectures three hours a week.

Environmental Engineering (ENVE) Courses

ENVE 1001 [0.5 credit]
**Architecture and the Environment**
Impacts of the environment on architecture; deterioration, freeze/thaw, solar heat, air pollution, moisture; Impacts of architecture on the environment; ecologic footprint, energy consumption, air quality, waste generation; designing with the environment; renewable energy, effective siting and landscape, passive solar energy, natural lighting, energy efficiency.
Lectures three hours a week, problem analysis one and a half hours a week.

ENVE 2001 [0.5 credit]
**Process Analysis for Environmental Engineering**
Material and energy balances for reacting and non-reacting systems. Applications in mining, metallurgy, pulp and paper, power generation, energy utilization. Emissions to the environment per unit product or service generated. Introduction to life cycle analysis, comparative products and processes.
Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent, and MAAE 2400 (may be taken concurrently), and second-year status in Engineering.
Lectures two hours a week, problem analysis three hours a week.
ENVE 2002 [0.5 credit]
Microbiology
The biology of the Bacteria, Archaea, Viruses and Prototozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.
Also listed as BIOL 2303.
Prerequisite(s): BIOL 1103 or CHEM 1002 or CHEM 1101 or equivalent.
Lectures three hours a week.

ENVE 3001 [0.5 credit]
Water Treatment Principles and Design
Theoretical aspects of unit operations for water treatment with design applications. Topics include water characteristics and contaminants, coagulation, flocculation, sedimentation, filtration, adsorption, ion exchange, membrane processes, disinfection and disinfection by-products, and management of water treatment residuals. Laboratory procedures: settling operations, filtration, aeration, and adsorption.
Includes: Experiential Learning Activity
Prerequisite(s): ENVE 3002.
Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3002 [0.5 credit]
Environmental Engineering Systems Modeling
Engineered systems for pollution abatement; chemical reaction engineering; reaction kinetics and rate data analysis; design and modeling of reactors; single and multiple reactions; ideal and nonideal reactors; single and multi-parameter models; biochemical reaction engineering; process control. Laboratory procedures: reactor systems performance: Batch, CSTR and PFR.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent and MATH 2004, and second-year status in Engineering. Additional recommended background: ENV 2001.
Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3003 [0.5 credit]
Water Resources Engineering
A quantitative analysis of natural water systems and the development of these systems as a resource. Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Hydraulic properties and availability of groundwater. Storm water management. Also listed as GEOG 4103.
Prerequisite(s): third-year status in Engineering.
Lectures three hours a week, problem analysis one hour a week.

ENVE 3004 [0.5 credit]
Contaminant and Pollutant Transport in the Environment
Physical phenomenon governing the transport of contaminants in the environment: diffusion, advection, dispersion, sorption, interphase transfer. Derivation and application of transport equations in air, surface and groundwater pollution; analytical and numerical solutions. Equilibrium partitioning of contaminants among air, water, sediment, and biota.
Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent; ENVE 3002.
Lectures three hours a week, problem analysis one hour a week.

ENVE 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ENVE 4002 [0.5 credit]
Environmental Geotechnical Engineering
Landfill design; hydrogeologic principles, water budget, landfill liners, geosynthetics, landfill covers, quality control/quality assurance, clay leachate interaction, composite liner design and leak detection. Landfill operation, maintenance and monitoring. Case studies of landfill design and performance. Geotechnical design of environmental control and containment systems.
Prerequisite(s): ENVE 3004, CIVE 3208.
Also offered at the graduate level, with different requirements, as ENVE 5201/EVG 7201, for which additional credit is precluded.
Lectures three hours a week, problem analysis one hour a week.

ENVE 4003 [0.5 credit]
Air Pollution and Emissions Control
Air pollutants, classification, sources, and effects. Ambient air quality objectives and monitoring. Pollutant formation mechanisms in combustion. Major pollutant categories and control methods. Indoor air quality. Laboratory procedures: emissions from boilers and IC engines, particulate size distribution and control, IAQ parameters.
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2400 and fourth-year status in Engineering or permission of the department. Also offered at the graduate level, with different requirements, as ENVE 5101/EVG 7101, for which additional credit is precluded.
Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.
ENVE 4005 [0.5 credit]
Wastewater Treatment Principles and Design
Theoretical aspects of unit operations and processes for wastewater treatment with design applications. Topics include wastewater characteristics, flow rates, primary treatment, chemical unit processes, biological treatment processes, advanced wastewater treatment, disinfection, biosolids treatment and disposal. Laboratory procedures: activated sludge, anaerobic growth, chemical precipitation, disinfection.
Includes: Experiential Learning Activity
Prerequisite(s): ENVE 3001, ENVE 3002.
Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 4006 [0.5 credit]
Contaminant Hydrogeology
Theory of flow through porous media. Site investigation: geology, hydrology and chemistry. Contaminant transport. Unsaturated and multiphase flow. Numerical modeling. Site remediation and remediation technologies. Prerequisite(s): ENVE 3004 and MAAE 2300. Additional recommended background: ENVE 3003. Also offered at the graduate level, with different requirements, as ENVE 5301/EVG 7301, for which additional credit is precluded.
Lectures three hours a week, problem analysis one and a half hours a week.

ENVE 4101 [0.5 credit]
Waste Management
Municipal, hazardous, and mine waste management. Waste composition and potential impacts, collection and transport, recycling and reuse, biological and thermal treatments, isolation. Integrated waste management planning. Prerequisite(s): ENVE 3001, ENVE 3002 and ENVE 3004. Also offered at the graduate level, with different requirements, as ENVE 5203/EVG 5203, for which additional credit is precluded.
Lectures three hours a week, problem analysis one hour a week.

ENVE 4104 [0.5 credit]
Environmental Planning and Impact Assessment
Prerequisite(s): ENVE 3004 and fourth-year status in Engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

ENVE 4105 [0.5 credit]
Green Building Design
Concepts, calculations, modeling; design of green buildings and their components; sustainable sites and landscaping; passive design; building envelope; building materials; daylighting; heating, cooling, and ventilation; building-integrated renewable energy systems; indoor environmental quality; overview of building standards and codes. Prerequisite(s): fourth-year status in B.Eng. Architectural Conservation and Sustainability Engineering, Environmental Engineering or Civil Engineering or fourth-year standing in B.A.S. concentration in Conservation and Sustainability.
Lectures three hours a week, problem analysis one and a half hours per week.

ENVE 4106 [0.5 credit]
Indoor Environmental Quality
Indoor environmental quality (air quality, thermal, visual, and acoustic comfort); physical and chemical parameters for characterization. Types and sources of indoor air pollution and discomfort; measurement techniques. Heating, ventilation, air conditioning, lighting practices and issues. Modelling of and design for indoor environmental quality. Prerequisite(s): fourth year status in B.Eng. Architectural Conservation and Sustainability Engineering or B.Eng. Environmental Engineering or fourth year standing in B.A.S. concentration in Conservation and Sustainability. Also offered at the graduate level, with different requirements, as ENVE 5104, for which additional credit is precluded.
Lectures three hours a week, problem analysis and laboratory three hours alternate weeks.

ENVE 4107 [0.5 credit]
Building Services Engineering
This course provides details on how buildings are designed and operated. The materials provide foundational knowledge to understand building services: mechanical, electrical, plumbing systems with associated controls. Prerequisite(s): CIVE 3209, ENVE 4105 (may be taken concurrently).
Lecture three hours per week, problem analysis three hours every other week.
ENVE 4200 [0.5 credit]
Climate Change and Engineering
Survey of the physical science of climate change, impacts on the built environment, and climate adaptation in engineering. Greenhouse gases, global warming, paleoclimatology, and Earth system responses. Climate change impacts on structural, water, transportation, and energy systems. Climate vulnerability assessment, examples of design adaptation.  
Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as ENVE 5200, for which additional credit is precluded. Lecture three hours per week, problem analysis three hours every other week.

ENVE 4907 [1.0 credit]
Engineering Research Project
A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies. Includes: Experiential Learning Activity  
Precludes additional credit for ENVE 4917. Prerequisite(s): fourth-year status in Engineering and permission of the department.

ENVE 4917 [0.5 credit]
Undergraduate Directed Study
Student carries out a study, analysis, and solution of an engineering problem which results in a written final report. Carried out under close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student. Includes: Experiential Learning Activity  
Precludes additional credit for ENVE 4907. Prerequisite(s): permission of the Department and completion of, or concurrent registration in, ENVE 4918. Self study.

ENVE 4918 [1.0 credit]
Design Project
Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required. Includes: Experiential Learning Activity  
Prerequisite(s): ECOR 3800 and fourth-year Status in Engineering. Certain projects may have additional requirements. Lectures two hours alternate weeks, problem analysis three hours a week.

Mechanical Engineering (MECH) Courses

MECH 3002 [0.5 credit]
Machine Design and Practice
The design of mechanical machine elements is studied from theoretical and practical points of view. Topics covered include: design factors, fatigue, and discrete machine elements. Problem analysis emphasizes the application to practical mechanical engineering problems. Includes: Experiential Learning Activity  
Prerequisite(s): MAAE 2001 and MAAE 3202. Lectures three hours a week, problem analysis three hours a week.

MECH 3310 [0.5 credit]
Biofluid Mechanics
Applications of fundamental fluid mechanics to human circulatory and respiratory systems. Basic viscous flow theory including: blood flow in the heart and large arteries, air flow in extra-thoracic (nose-mouth throat) airways and lungs. Includes: Experiential Learning Activity  
Prerequisite(s): MATH 2004 and MAAE 2300. Lectures three hours per week, laboratories or tutorials three hours per week.

MECH 3700 [0.5 credit]
Principles of Manufacturing
Prerequisite(s): MAAE 2700. Lectures three hours a week, problem analysis and laboratories three hours a week on alternate weeks.

MECH 3710 [0.5 credit]
Biomaterials
Prerequisite(s): MAAE 2700. Lectures three hours per week, laboratories and problem analysis three hours per week.
MECH 4003 [0.5 credit]
Mechanical Systems Design
Design of mechanical systems: establishing design criteria, conceptual design, design economics, value analysis, synthesis and optimization. Mechanical elements/systems: gear and flexible drive systems, fluid power systems. These elements are utilized in group design projects.
Includes: Experiential Learning Activity
Prerequisite(s): MECH 3002 and fourth-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

MECH 4006 [0.5 credit]
Vehicle Engineering I
The course emphasizes the engineering and design principles of road transport vehicles. Topics to be covered include: performance characteristics, handling behaviour and ride quality of road vehicles.
Prerequisite(s): MAAE 3004 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4007 [0.5 credit]
Vehicle Engineering II
Engineering and design principles of off-road vehicles and air cushion technology. Topics include: mechanics of vehicle-terrain interaction - terramechanics, performance characteristics of off-road vehicles, steering of tracked vehicles, air cushion systems and their performance, applications of air cushion technology to transportation.
Prerequisite(s): MAAE 3004 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4013 [0.5 credit]
Biomedical Device Design
Includes: Experiential Learning Activity
Prerequisite(s): MECH 3710, MAAE 3202, and MECH 4210 and fourth-year status in Engineering.
Lectures three hours per week, laboratories or tutorial three hours per week.

MECH 4101 [0.5 credit]
Mechanics of Deformable Solids
Course extends the student's ability in design and stress analysis. Topics include: introductory continuum mechanics, theory of elasticity, stress function approach, Lamé and Mitchell problems, stress concentrations, thermoelasticity and plasticity.
Prerequisite(s): MAAE 3202 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4102 [0.5 credit]
Corrosion and Corrosion Control
Prerequisite(s): Fourth-year status in Engineering.
Lectures three hours a week.

MECH 4103 [0.5 credit]
Fatigue and Fracture Analysis
Elastic and elasto-plastic fracture mechanics. Fatigue design methods, fatigue crack initiation and growth Paris law and strain-life methods. Fatigue testing, scatter, mean stress effects and notches. Welded and built up structures, real load histories and corrosion fatigue. Damage tolerant design and fracture control plans.
Prerequisite(s): MAAE 3202 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4104 [0.5 credit]
Vibration Analysis
Prerequisite(s): MAAE 3004 and fourth-year status in Engineering.
Lectures three hours per week.

MECH 4105 [0.5 credit]
Introduction to Nuclear Engineering
Prerequisite(s): Fourth-year status in Engineering.
Lectures three hours per week.

MECH 4106 [0.5 credit]
Nuclear Power Plant Design
Prerequisite(s): Fourth-year status in Engineering.
Lectures three hours per week.
MECH 4107 [0.5 credit]
Internal Combustion Engines
This course explores the design process of an internal combustion engine including: Internal Aerodynamics, Combustion, Rotating and Reciprocating Components, Structures, Control Systems, Manufacturing and Testing Methods. Students will design/optimize an engine component utilizing industry standard Ricardo Wave simulation software.
Prerequisite(s): Fourth-year status in Engineering.
Lecture three hours per week.

MECH 4210 [0.5 credit]
Biomechanics
The biomechanics of biological systems; muscles and movement, nerves and motor control. Measurements of motion, strain and neural signals. The hand and manipulation; locomotion and the leg.
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2101 and fourth-year status in Engineering.
Lectures three hours per week, laboratories or tutorials three hours per week.

MECH 4305 [0.5 credit]
Fluid Machinery
Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4401 [0.5 credit]
Power Plant Analysis
Criteria of merit; selection of power plant for transportation and power generation applications; interrelation among mechanical, thermodynamic and aerodynamic design processes; jet propulsion, turbojets and turbosfans; alternative proposals for vehicular power plant; combined cycle applications.
Precludes additional credit for AERO 4402.
Prerequisite(s): MAAE 2400 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4403 [0.5 credit]
Power Generation Systems
Includes: Experiential Learning Activity
Precludes additional credit for SREE 4001.
Prerequisite(s): MAAE 2300 and MAAE 2400 and fourth-year status in Engineering.
Lectures three hours a week and problem analysis three hours per week.

MECH 4406 [0.5 credit]
Heat Transfer
Precludes additional credit for AERO 4446.
Prerequisite(s): MAAE 2400 and (MAAE 3300, MECH 3310, or (ENVE 3001 and permission of the Department of Mechanical and Aerospace Engineering)) and fourth-year status in Engineering.
Lectures three hours a week. Problem analysis and laboratories three hours a week.

MECH 4407 [0.5 credit]
Heating and Air Conditioning
Prerequisite(s): MAAE 2400 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4408 [0.5 credit]
Thermofluids and Energy Systems Design
Integration of fluid mechanics, thermodynamics, and heat transfer for design of energy conversion systems. Chemical kinetics and mass transfer. Efficient combustion, fuel cells and batteries. Efficient operation and design of engines, power generators, boilers, furnaces, incinerators, and co-generation systems. Emerging energy systems.
Prerequisite(s): MAAE 3400 and fourth-year status in Engineering.
Lectures three hours per week.
MECH 4501 [0.5 credit]
State Space Modeling and Control
Review of matrices. Geometric structure and dynamics of linear systems. Controllability and observability. Pole placement design of controllers and observers. Design of regulator and servo systems. Transmission zeros. Eigenstructure assignment. Relationship to frequency or classical control techniques. Computer solutions using MATLAB. Applications. Precludes additional credit for SYSC 5502. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours a week.

MECH 4503 [0.5 credit]
An Introduction to Robotics

MECH 4604 [0.5 credit]
Finite Element Methods
Finite element methodology with emphasis on applications to stress analysis, heat transfer and fluid flow using the simplest one- and two-dimensional elements. Direct equilibrium, variational and Galerkin formulations. Computer programs and practical applications. Higher order elements. Prerequisite(s): MAAE 3202 and fourth-year status in Engineering. Lectures three hours a week.

MECH 4704 [0.5 credit]
Integrated Manufacturing - CIMS
Overview of the topics essential to CIMS including integration of design and assembly techniques, numerical analysis, statistical process control and related production technologies within the manufacturing enterprise. Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as MECH 5704, for which additional credit is precluded. Lectures three hours a week.

MECH 4705 [0.5 credit]
CAD/CAM
Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed. Prerequisite(s): MAAE 2001 and fourth-year status in Engineering. Lectures three hours a week.

MECH 4805 [0.5 credit]
Measurement and Data Systems

MECH 4806 [0.5 credit]
Mechatronics
Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours per week.

MECH 4701 [0.5 credit]
State Space Modeling and Control
Review of matrices. Geometric structure and dynamics of linear systems. Controllability and observability. Pole placement design of controllers and observers. Design of regulator and servo systems. Transmission zeros. Eigenstructure assignment. Relationship to frequency or classical control techniques. Computer solutions using MATLAB. Applications. Precludes additional credit for SYSC 5502. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours a week.

MECH 4703 [0.5 credit]
An Introduction to Robotics

MECH 4604 [0.5 credit]
Finite Element Methods
Finite element methodology with emphasis on applications to stress analysis, heat transfer and fluid flow using the simplest one- and two-dimensional elements. Direct equilibrium, variational and Galerkin formulations. Computer programs and practical applications. Higher order elements. Prerequisite(s): MAAE 3202 and fourth-year status in Engineering. Lectures three hours a week.

MECH 4704 [0.5 credit]
Integrated Manufacturing - CIMS
Overview of the topics essential to CIMS including integration of design and assembly techniques, numerical analysis, statistical process control and related production technologies within the manufacturing enterprise. Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as MECH 5704, for which additional credit is precluded. Lectures three hours a week.

MECH 4705 [0.5 credit]
CAD/CAM
Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed. Prerequisite(s): MAAE 2001 and fourth-year status in Engineering. Lectures three hours a week.

MECH 4805 [0.5 credit]
Measurement and Data Systems

MECH 4806 [0.5 credit]
Mechatronics
Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours per week.

MECH 4701 [0.5 credit]
State Space Modeling and Control
Review of matrices. Geometric structure and dynamics of linear systems. Controllability and observability. Pole placement design of controllers and observers. Design of regulator and servo systems. Transmission zeros. Eigenstructure assignment. Relationship to frequency or classical control techniques. Computer solutions using MATLAB. Applications. Precludes additional credit for SYSC 5502. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours a week.

MECH 4703 [0.5 credit]
An Introduction to Robotics

MECH 4604 [0.5 credit]
Finite Element Methods
Finite element methodology with emphasis on applications to stress analysis, heat transfer and fluid flow using the simplest one- and two-dimensional elements. Direct equilibrium, variational and Galerkin formulations. Computer programs and practical applications. Higher order elements. Prerequisite(s): MAAE 3202 and fourth-year status in Engineering. Lectures three hours a week.

MECH 4704 [0.5 credit]
Integrated Manufacturing - CIMS
Overview of the topics essential to CIMS including integration of design and assembly techniques, numerical analysis, statistical process control and related production technologies within the manufacturing enterprise. Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as MECH 5704, for which additional credit is precluded. Lectures three hours a week.

MECH 4705 [0.5 credit]
CAD/CAM
Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed. Prerequisite(s): MAAE 2001 and fourth-year status in Engineering. Lectures three hours a week.

MECH 4805 [0.5 credit]
Measurement and Data Systems

MECH 4806 [0.5 credit]
Mechatronics
Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours per week.

Mechanical and Aerospace Engineering (MAAE) Courses
MAAE 2001 [0.5 credit]
Engineering Graphical Design
Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Assignments will make extensive use of Computer-Aided Design (CAD) and will include the production of detail and assembly drawings from actual physical models. Includes: Experiential Learning Activity Also listed as AERO 2001. Prerequisite(s): Second-year status in Engineering. Lectures and tutorials two hours a week, laboratory four hours a week.
MAAE 2101 [0.5 credit]
Engineering Dynamics
Review of kinematics and kinetics of particles: rectilinear and curvilinear motions; Newton's second law; energy and momentum methods. Kinematics and kinetics of rigid bodies: plane motion of rigid bodies; forces and accelerations; energy and momentum methods. Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2101.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

MAAE 2202 [0.5 credit]
Mechanics of Solids I
Review of Principles of Statics; friction problems; Concepts of stress and strain at a point; statically determinate and indeterminate stress systems; torsion of circular sections; bending moment and shear force diagrams; stresses and deflections in bending; buckling instability. Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2200.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 2300 [0.5 credit]
Fluid Mechanics I
Fluid properties. Units. Kinematics, dynamics of fluid motion: concepts of streamline, control volume, steady and one-dimensional flows; continuity, Bernoulli, steady flow energy, momentum, moment of momentum equations; applications. Fluid statics; pressure distribution in fluid at rest; hydrostatic forces on plane and curved surfaces; buoyancy.
Includes: Experiential Learning Activity
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2400 [0.5 credit]
Thermodynamics and Heat Transfer
Includes: Experiential Learning Activity
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2700 [0.5 credit]
Engineering Materials
Materials (metals, alloys, polymers) in engineering service; relationship of interatomic bonding, crystal structure and defect structure (vacancies, dislocations) to material properties; polymers, phase diagrams and alloys; microstructure control (heat treatment) and mechanical properties; material failure; corrosion.
Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2700.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3004 [0.5 credit]
Dynamics of Machinery
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2101 and MATH 1005.
Lectures three hours a week, problem analysis and laboratories two hours a week.

MAAE 3202 [0.5 credit]
Mechanics of Solids II
Stress and strain transformations: torsion of non-circular sections; unsymmetric bending and shear centre; energy methods; complex stresses and criteria of yielding; elementary theory of elasticity; axisymmetric deformations. Includes: Experiential Learning Activity
Precludes additional credit for CIVE 3202.
Prerequisite(s): MAAE 2202 and MATH 1005 (co-req).
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3300 [0.5 credit]
Fluid Mechanics II
Includes: Experiential Learning Activity
Prerequisite(s): MATH 2004 and MAAE 2300.
Lectures three hours a week, problem analysis and laboratory three hours a week.
MAAE 3400 [0.5 credit]
Applied Thermodynamics
Includes: Experiential Learning Activity
Prerequisite(s): MATH 1005 and MAAE 2400.
Lectures three hours a week, problem analysis and laboratories three hours a week.

MAAE 3500 [0.5 credit]
Feedback Control Systems
Includes: Experiential Learning Activity
Precludes additional credit for MAAE 4500 (no longer offered), SYSC 4505.
Prerequisite(s): MATH 3705 and (SYSC 3600 or SYSC 3610).
Lectures three hours a week, problem analysis and laboratories three hours a week.

MAAE 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

MAAE 4102 [0.5 credit]
Materials: Strength and Fracture
Analysis and prevention of failures in metals; plasticity analysis and plastic collapse; micro-mechanisms of fracture, conditions leading to crack growth and transition temperature effects, fracture mechanics, fatigue, environmentally assisted cracking, non-destructive evaluation and testing.
Prerequisite(s): MAAE 2202 and MAAE 2700 and fourth-year status in Engineering.
Lectures three hours a week.

MAAE 4904 [0.5 credit]
Special Topics: Mechanical and Aerospace Engineering
Selected advanced topics of interest to Aerospace and Mechanical Engineering students, subject to the discretion of the Faculty of Engineering and Design.
Prerequisite(s): permission of department.
Lectures three hours a week.

MAAE 4906 [0.5 credit]
Special Topics: Mech and Aero Eng.
At the discretion of the Faculty, a course may be offered that deals with selected advanced topics of interest to Aerospace and Mechanical Engineering students.
Prerequisite(s): permission of the Department.

MAAE 4907 [1.0 credit]
Engineering Design Project
Team project in the design of an aerospace, biomedical, mechanical, or sustainable energy system. Opportunity to develop initiative, engineering judgement, self-reliance, and creativity in a team environment. Results submitted in a comprehensive report as well as through formal oral presentations.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year status in engineering and (completion of or concurrent registration in AERO 4003, AERO 4842, MECH 4003, MECH 4013, or SREE 4001, or permission of Department). Certain projects may have additional prerequisites.

MAAE 4908 [0.5 credit]
Undergraduate Directed Study
Study, analysis, and solution of an engineering problem. Results presented in the form of a written report. Carried out under the close supervision of a faculty member.
Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Department and completion of, or concurrent registration in, MAAE 4907.

Sustainable and Renewable Energy (SREE) Courses

SREE 1000 [0.0 credit]
Introduction to Sustainable Energy
Prerequisite(s): registration in Sustainable and Renewable Energy Engineering.
Lectures one hour per week.
SREE 3001 [0.5 credit]  
**Sustainable and Renewable Energy Sources**  
Primary energy sources and the pathways to use.  
Renewables: photovoltaic, solar-thermal, hydropower, geothermal, tidal. Fossil fuels and nuclear. Terrestrial, thermodynamic and electrical limitations.  
Includes: Experiential Learning Activity  
Prerequisite(s): ENVE 2001 and MAAE 2300 and (ELEC 3605 or ELEC 2501 or fourth-year status in Environmental Engineering).  
Lectures three hours per week, laboratories/problem analysis one hour per week.

SREE 3002 [0.5 credit]  
**Electricity: Use, Distribution, Integration of Distributed Generation**  
Electricity use in Ontario: rates, government incentives, smart use. Electricity Distribution: topology, reliability, load characteristics, voltage regulation, power loss, capacitors, economics of optimum choice, system protection.  
Distributed Generation: guides and regulations, case study.  
Includes: Experiential Learning Activity  
Prerequisite(s): SREE 3001, ELEC 4602 and (ELEC 2501 or ELEC 3605).  
Lectures three hours per week, laboratories three hours per week alternate weeks.

SREE 3003 [0.5 credit]  
**Sustainable and Renewable Electricity Generation**  
Power system structures; photovoltaic (PV) cell model, PV current-voltage curves, maximum power point tracking, grid-connected PV systems; power flow of wind generation, grid connection of wind generator; energy storage classification, battery equivalent circuit model, battery charging and discharging; renewable generation; feed-in tariff program.  
Includes: Experiential Learning Activity  
Prerequisite(s): SREE 3001, ELEC 4602 and (ELEC 2501 or ELEC 3605).  
Lectures three hours per week, laboratories three hours per week alternate weeks.

SREE 4001 [0.5 credit]  
**Efficient Energy Conversion**  
Comparative analysis of raw material, energy, or product transport. Life-cycle analysis.  
Includes: Experiential Learning Activity  
Prerequisite(s): MAAE 2300, MAAE 2400 and fourth year status in Sustainable & Renewable Energy Engineering.  
Lectures three hours per week, laboratories/problem analysis three hours per week.

SREE 4002 [0.5 credit]  
**The Energy Economy, Reliability and Risk**  
Interrelationship between energy and economic policy and regulations. Reliability of energy supply systems. Risk analysis and its application to the generation, distribution and environmental impacts of energy. Risks analysis and management associated with natural and human and regulatory influences. Environmental and public health risk analysis.  
Prerequisite(s): fourth-year status in Engineering.  
Lectures three hours per week.

SREE 4907 [1.0 credit]  
**Energy Engineering Project**  
Student teams develop professional-level experience by applying, honing, integrating and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.  
Includes: Experiential Learning Activity  
Prerequisite(s): SREE 3002 and SREE 3003, fourth-year status in Sustainable and Renewable Energy Engineering and ECON 4995 (may be taken concurrently).  
Certain projects may have additional prerequisites or corequisites.  
Lecture one hour a week, laboratory seven hours a week.

**Systems and Computer Engineering (SYSC) Courses**

Note: the Departments of Systems and Computer Engineering and Electronics offer courses in: Biomedical and Electrical Engineering, Communications Engineering, Computer Systems Engineering, Electrical Engineering, Software Engineering and Engineering Physics.

SYSC 1005 [0.5 credit]  
**Introduction to Software Development**  
Software development as an engineering discipline, using a modern programming language, Language syntax. Algorithm design. Tracing and visualizing program execution. Testing and debugging. Program style, documentation, reliability. Lab projects are drawn from a variety of application domains: digital image manipulation, computer games, robotics.  
Includes: Experiential Learning Activity  
Prerequisite(s): SYSC 1005.  
Lectures three hours a week, laboratory three hours a week.
SYSC 2001 [0.5 credit]
Computer Systems Foundations
Computer architecture and organization: CPU, cache, memory, input/output, bus structures, interrupts; computer arithmetic: integer and floating point; CPU: instruction sets, addressing modes, instruction encoding. Input/output: programmed, interrupt-driven, block-oriented. Examples from several modern processor families. Includes: Experiential Learning Activity
Prerequisite(s): ECOR 1606 or SYSC 1005. Additional recommended background: SYSC 2006. Lectures three hours a week, laboratory two hours a week.

SYSC 2003 [0.5 credit]
Introductory Real-Time Systems
Prerequisite(s): SYSC 2001 and SYSC 2006. Lectures three hours a week, laboratory two hours a week.

SYSC 2004 [0.5 credit]
Object-Oriented Software Development
Designing and implementing small-scale programs as communities of collaborating objects, using a dynamically-typed or statically-typed programming language. Fundamental concepts: classes, objects, encapsulation, information hiding, inheritance, polymorphism. Iterative, incremental development and test-driven development. Includes: Experiential Learning Activity
Prerequisite(s): SYSC 2006 or permission of the department, and second-year status in Engineering. Lectures three hours a week, laboratory two hours a week.

SYSC 2006 [0.5 credit]
Foundations of Imperative Programming
Prerequisite(s): Second-year status in Engineering. Lectures three hours a week, laboratory two hours a week.
SYSC 2320 [0.5 credit]
Introduction to Computer Organization and Architecture
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2001 and SYSC 3006.
Prerequisite(s): SYSC 2310 and second-year status in Engineering.
Lectures three hours a week, laboratory three hours a week.

SYSC 2510 [0.5 credit]
Probability, Statistics and Random Processes for Engineers
Includes: Experiential Learning Activity
Prerequisite(s): MATH 1004 and MATH 1104, and second-year status in Engineering.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3006 [0.5 credit]
Computer Organization
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2001, SYSC 2003, SYSC 2320 and SYSC 3310. May not be taken for credit by students in Computer Systems Engineering, Communications Engineering, or Software Engineering.
Prerequisite(s): SYSC 2006 and ELEC 2607.
Lectures three hours a week, laboratory two hours a week.

SYSC 2310 [0.5 credit]
Computer Systems Development Project
Development of expertise in designing, implementing and testing industrial-quality embedded systems through team projects. Applying modern programming languages, system design practices, current development processes (refactoring, iterative and incremental development) as well as current team-management tools (communication, version control) to medium-scale projects.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 2404, SYSC 2010, SYSC 2101 (no longer offered), and SYSC 3110.
Prerequisite(s): SYSC 2100 and either SYSC 2003 or SYSC 3310 (may be taken concurrently), and enrolment in Computer Systems Engineering.
Lectures two hours a week, laboratory three hours a week.

SYSC 3020 [0.5 credit]
Introduction to Software Engineering
Introduction to software engineering principles, software development life-cycles. Modelling in software engineering. Current techniques, notations, methods, processes and tools used in software engineering. UML modelling. Introduction to software quality, software verification and validation, software testing.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3100, SYSC 3120, SYSC 4120 and COMP 3004.
Prerequisite(s): SYSC 2004 and (SYSC 2006 or SYSC 2002).
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3101 [0.5 credit]
Programming Languages
Principles underlying different kinds of programming languages (procedural, functional, logic programming) and their semantics. Overview of machinery needed for language support (compilers, interpreters and run-time systems).
Includes: Experiential Learning Activity
Precludes additional credit for COMP 3007.
Prerequisite(s): SYSC 2004.
Lectures three hours a week, laboratory three hours alternate weeks.
SYSC 3110 [0.5 credit]
Software Development Project
Development of expertise in designing, implementing and testing maintainable, reusable software through team projects. Applying modern programming languages, design patterns, frameworks, UML and modern development processes (detection of olfactible source code defects, refactoring, iterative and incremental development, version control techniques) to medium-scale projects.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 2404, SYSC 2010, SYSC 2101 and SYSC 3010.
Prerequisite(s): SYSC 2004 and SYSC 2100, and enrolment in Software Engineering.
Lectures two hours a week, laboratory three hours a week.

SYSC 3120 [0.5 credit]
Software Requirements Engineering
Current techniques, notations, methods, processes and tools used in Requirements Engineering. Requirements elicitation, negotiation, modeling requirements, management, validation. Skills needed for Requirements Engineering and the many disciplines on which it draws. Requirements analysis: domain modeling, modeling object interactions; UML modeling. Introduction to software development processes.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3020 and COMP 3004.
Prerequisite(s): SYSC 2004 and enrolment in Software Engineering.
Lectures three hours a week, laboratory three hours a week alternate weeks.

SYSC 3200 [0.5 credit]
Industrial Engineering
Techniques of operations research for decision-making in complex engineering systems. Linear programming, network models, PERT, integer programming, dynamic programming, queuing systems and inventory models. Problem solving is emphasized.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 2300, ECON 4004, or MATH 3801.
Prerequisite(s): MATH 1004 and MATH 1104, and second-year status in Engineering.
Lectures three hours a week, laboratory/problem analysis one and a half hours per week.

SYSC 3203 [0.5 credit]
Bioelectrical Systems
Includes: Experiential Learning Activity
Prerequisite(s): MATH 1005 and (ELEC 2507 or ELEC 3605), and enrolment in Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering, and second-year status in Engineering.
Lectures three hours a week, laboratory three hours a week.

SYSC 3303 [0.5 credit]
Real-Time Concurrent Systems
Principles and practice of a systems engineering approach to the development of software for real-time, concurrent, distributed systems. Designing to achieve concurrency, performance, and robustness, using visual notations. Converting designs into programs. Introduction to hard real-time systems. Team project.
Includes: Experiential Learning Activity
Prerequisite(s): for students in the Faculty of Engineering and Design: (SYSC 2003 or SYSC 3310) and SYSC 2004.
For students in Computer Science: COMP 2401 and COMP 2402.
Lectures three hours a week, laboratory two hours a week.

SYSC 3310 [0.5 credit]
Introduction to Real-Time Systems
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2003, SYSC 3006.
Prerequisite(s): SYSC 2006 with a minimum grade of C- and SYSC 2320.
Lectures three hours a week, laboratory two hours a week.

SYSC 3320 [0.5 credit]
Computer Systems Design
System on Chip (SoC)-based computer system design. SoC internal organization. Cache memory. Interfacing: external memory, hardware subsystems. Direct memory access. Floating point units. Introduction to field programmable gate arrays.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3601 and ELEC 4601.
Prerequisite(s): SYSC 3310 and third year status in Computer Systems Engineering, or permission of the Department.
Lectures three hours a week, laboratory three hours alternate weeks.
SYSC 3500 [0.5 credit]
Signals and Systems
Signals: energy and power signals, discrete-time and continuous. Linear systems and convolution. Fourier Transform; complex Fourier series; signal spectral properties and bandwidth. Laplace transform and transient analysis. Transfer functions, block diagrams. Baseband and passband signals, with applications to communications systems.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3600 and SYSC 3610.
Prerequisite(s): MATH 1005 and enrolment in Communications Engineering, and second-year status in Engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 3501 [0.5 credit]
Communication Theory
Review of signals, linear systems and Fourier theory; signal bandwidth and spectra; digital waveform coding; introduction to analog and digital modulation systems; synchronization; characterization and effects of noise; link budgets; communications media and circuits; applications to current communications systems.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3503.
Prerequisite(s): SYSC 3600 or SYSC 3610.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3503 [0.5 credit]
Communication Theory II
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3501 or SYSC 4600.
Prerequisite(s): SYSC 3500 and (STAT 2605 or SYSC 2510).
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3600 [0.5 credit]
Systems and Simulation
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3500 or SYSC 3610.
Prerequisite(s): MATH 1005 and second-year status in Engineering.
Lectures three hours a week, laboratory three hours a week.

SYSC 3601 [0.5 credit]
Microprocessor Systems
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3320 or ELEC 4601.
Prerequisite(s): ELEC 2607, and SYSC 2003 or permission of the department.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3610 [0.5 credit]
Biomedical Systems, Modeling, and Control
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3500 or SYSC 3600.
Prerequisite(s): MATH 1005 and enrolment in Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering, and second-year status in Engineering.
Lectures three hours a week, laboratory three hours a week.

SYSC 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

SYSC 4001 [0.5 credit]
Operating Systems
Introduction to operating system principles. Processes and threads. CPU scheduling. Managing concurrency: mutual exclusion and synchronization, deadlock and starvation. Managing memory and input/output. Concurrent programming, including interprocess communication in distributed systems.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3001 and COMP 3000.
Prerequisite(s): SYSC 2006 with a minimum grade of C-.
Lectures three hours a week, laboratory three hours a week.
SYSC 4005 [0.5 credit]
Discrete Simulation/Modeling
Simulation as a problem solving tool. Random variable
generation, general discrete simulation procedure: event
table and statistical gathering. Analyses of simulation
data: point and interval estimation. Confidence intervals.
Overview of modeling, simulation, and problem solving
using SIMSCRIPT, MODSIM, and other languages.
Includes: Experiential Learning Activity
Prerequisite(s): (ECOR 2050 or SYSC 2510 or STAT 2605
or STAT 3502) and fourth-year status in Engineering, or
permission of the Department.
Also offered at the graduate level, with different
requirements, as SYSC 5001, for which additional credit is
precluded.
Lectures three hours a week, laboratory one hour a week.

SYSC 4006 [0.5 credit]
Introduction to Systems Programming
Introduction to C programming: Data types, flow control,
functions, arrays, pointers, and arithmetic, logical and
bitwise operators. Memory models, collections. Low-level
I/O. Build pipeline (version control, make, preprocessing,
compiling, linking) in Linux. Testing and debugging.
Precludes additional credit for SYSC 2006.
Prerequisite(s): Third-year status in Engineering, or
enrollment in the M.Eng. Program in Electrical & Computer
Engineering.
Lectures three hours a week.

SYSC 4101 [0.5 credit]
Software Validation
Techniques for the systematic testing of software systems.
Software validation and verification, software debugging,
quality assurance, measurement and prediction of
software reliability. Emphasis on the treatment of these
topics in the context of real-time and distributed systems.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 4004.
Prerequisite(s): SYSC 3120 or SYSC 3020.
Lectures three hours a week, laboratory/problem analysis
three hours a week.

SYSC 4102 [0.5 credit]
Performance Engineering
Techniques based on measurements and models, for
predicting and evaluating the performance of computer
systems. Instrumentation. Simple queueing models
and approximations. Techniques for modifying software
designs to improve performance.
Includes: Experiential Learning Activity
Prerequisite(s): (ECOR 2050 or STAT 3502) and
SYSC 4001.
Also offered at the graduate level, with different
requirements, as SYSC 5101, for which additional credit is
precluded.
Lectures three hours a week, laboratory/problem analysis
three hours alternate weeks.

SYSC 4106 [0.5 credit]
The Software Economy and Project Management
Introduction to software project management and
economics; Return on software investments; Software
life cycle; Work breakdown structure, scheduling and
planning; Risk analysis and management; Product size
and cost estimation; Earn value management; Statistical
process control; Managing project team and process
improvement; Bidding and contract types.
Prerequisite(s): SYSC 3120 (may be taken concurrently)
or COMP 3004, and enrolment in Software Engineering or
the Bachelor of Computer Science.
Lectures three hours a week.

SYSC 4111 [0.5 credit]
Formal Methods in Software Engineering
Introduction to formal methods in software engineering
with coverage of propositional and first-order logic (syntax,
semantics, proof theory), formal specification languages,
bounded analysis and validation, formal specification tools,
and model checking with finite-state machines, temporal
logic, and model checking tools.
Prerequisite(s): COMP 1805, SYSC 3120, and
SYSC 4001.
Lectures three hours a week.

SYSC 4120 [0.5 credit]
Software Architecture and Design
Introduction and importance of software architectures and
software system design in software engineering. Current
techniques, modeling notations, methods, processes and
tools used in software architecture and system design.
Software architectures, architectural patterns, design
patterns, software qualities, software reuse.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 3004, SYSC 3020
and SYSC 4800 (no longer offered).
Prerequisite(s): SYSC 3120.
Lectures three hours a week, laboratory three hours
alternate weeks.

SYSC 4201 [0.5 credit]
Ethics, Research Methods and Standards for
Biomedical Engineering
Ethical theories, ethical decision-making, biomedical
research ethics: informed consent, confidentiality,
privacy, research ethics boards; research methods:
hypothesis formulation, data collection, sampling bias,
experimental design, statistical literacy; regulations for
design, manufacture, certification of medical devices;
impact of technology and research (social, political,
financial).
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3605 or SYSC 3203.
Lectures three hours a week, problem analysis one and a
half hours per week.
SYSC 4202 [0.5 credit]
Clinical Engineering
Overview of the Canadian health care system; brief examples of other countries; clinical engineering and the management of technologies in industrialized and in developing countries; safety, reliability, quality assurance; introduction to biomedical sensor technologies; applications of telemedicine; impact of technology on health care.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Biomedical and Electrical or Biomedical and Mechanical Engineering. Also offered at the graduate level, with different requirements, as BIOM 5406, for which additional credit is precluded.
Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 4203 [0.5 credit]
Bioinstrumentation and Signals
Bioinstrumentation and biological signals; instrumentation systems, noise, electrical safety, and biocompatibility; bioelectric signals; biopotential electrodes: material properties, selection, and fabrication; measurement of flow and pressure; data acquisition; signal processing; biomedical imaging technologies; performance and characteristics of bioamplifier systems; major physiological systems and associated measurements.
Includes: Experiential Learning Activity
Prerequisite(s): (SYSC 3600 or SYSC 3500 or SYSC 3610) and (ELEC 2507 or ELEC 3605 or SYSC 3203) and fourth-year status in Biomedical and Electrical Engineering or fourth-year status in Biomedical and Mechanical Engineering.
Lectures three hours a week, laboratory/problem analysis three hours a week.

SYSC 4205 [0.5 credit]
Image Processing for Medical Applications
Includes: Experiential Learning Activity
Prerequisite(s): MATH 1005 and fourth-year status in Engineering.
Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4310 [0.5 credit]
Computer Systems Architecture
Includes: Experiential Learning Activity
Prerequisite(s): SYSC 3320, and enrolment in Computer Systems Engineering.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4320 [0.5 credit]
Case Studies in Computer Systems
Examples of several modern computer systems are presented in a computer systems context: system objectives, software and hardware components, interactions. The case studies present computer systems trends emerging in practice.
Prerequisite(s): SYSC 4310, and enrolment in Computer Systems Engineering.
Lectures three hours a week, problem analysis one hour a week.

SYSC 4405 [0.5 credit]
Digital Signal Processing
Includes: Experiential Learning Activity
Prerequisite(s): SYSC 3600 or SYSC 3600 or SYSC 3610. Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4415 [0.5 credit]
Introduction to Machine Learning
Introduction to supervised and unsupervised machine learning (ML), including deeper knowledge of several algorithms of each type. Evaluation and quantification of predictive performance of ML systems. Use of one or more ML development environments.
Prerequisite(s): (ECOR 2050 or STAT 3502 or STAT 2605 or SYSC 2510), SYSC 2006 (with a minimum grade of C-), and third-year status in Engineering.
Lectures three hours a week, problem analysis one hour a week.
SYSC 4502 [0.5 credit]
Communications Software
Communications software architectures, protocols and operating systems. Application layer protocols, APIs and socket programming. P2P algorithms, network virtualization, SDN. Reliable data transfer algorithms, FSM, MSC. Network security. Multimedia applications, RTSP, CDN, DASH, RTP, RTCP. Packet scheduling algorithms, DiffServ, IntServ, RSVP. Traffic classification, cross-layer optimization.
Includes: Experiential Learning Activity
Prerequisite(s): SYSC 2004 and SYSC 4602.
Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 4504 [0.5 credit]
Fundamentals of Web Development
Includes: Experiential Learning Activity
Precludes additional credit for COMP 2406.
Prerequisite(s): SYSC 2004. Additional recommended background: SYSC 4602 or SYSC 3303.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4505 [0.5 credit]
Automatic Control Systems I
Includes: Experiential Learning Activity
Precludes additional credit for MAAE 3500, MAAE 4500 (no longer offered).
Prerequisite(s): MATH 2004 and (SYSC 3500 or SYSC 3600 or SYSC 3610).
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4507 [0.5 credit]
Computer Systems Architecture
Evolution of computer systems architecture, influences of changing technology, techniques to improve performance, memory hierarchy, hardware accelerators. Instruction level parallelism, pipelining, vector processing, superscalar, out of order execution, speculative execution. Thread level parallelism, multi-core, many-core, heterogeneous systems. Evolution of architectures for specific application domains.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 4310.
Prerequisite(s): ELEC 2607 and (SYSC 2001 or SYSC 3006).
Lectures three hours a week, laboratory/problem analysis one hour a week.

SYSC 4600 [0.5 credit]
Digital Communications
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3503 and SYSC 4604.
Prerequisite(s): SYSC 3501 and STAT 3502.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4602 [0.5 credit]
Computer Communications
Includes: Experiential Learning Activity
Precludes additional credit for COMP 3203.
Prerequisite(s): ECOR 2050 or SYSC 2510 or STAT 2605 or STAT 3502 (may be taken concurrently), and third-year status in Biomedical and Electrical, Electrical, Communications, Computer Systems, Software, or Sustainable and Renewable Energy Engineering.
Lectures three hours a week, laboratory three hours alternate weeks.
SYSC 4604 [0.5 credit]
Digital Communication Theory
Introduction to information theory, source coding and data compression, Error control coding, Trellis coded modulation, advanced topics of current interest: spread spectrum; digital wireless communications.
Includes: Experiential Learning Activity
Prerequisite(s): SYSC 3503.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4607 [0.5 credit]
Wireless Communications
Wireless radio channel characterization, diversity, equalization; cellular architecture, multiple access principles, spread spectrum systems, radio resource management; examples from modern wireless systems, networks, and standards, including cellular networks, WLANs, ad hoc networks, and satellite systems.
Includes: Experiential Learning Activity
Prerequisite(s): SYSC 3501 or SYSC 3503.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4700 [0.5 credit]
Telecommunications Engineering
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Electrical, Computer Systems or Communications Engineering, and (SYSC 3501 or SYSC 3503).
Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4701 [0.5 credit]
Communications Systems Lab
Project-oriented level experience in the design of communication systems to meet user requirements. Lectures on queuing theory and teletraffic analysis; system specification and design: requirements analysis, solution alternatives, evaluation of alternative technologies, design, costing, implementation, test.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Communications Engineering or permission of the department.
Lectures two hours a week, laboratory four hours a week.

SYSC 4805 [0.5 credit]
Computer Systems Design Lab
Project-oriented experience in the design of embedded computer systems. Lectures will discuss practical aspects related to the design and development of embedded systems, starting from sensor data acquisition and processing to decision systems, testing and embedded-system based project management, with practical application examples.
Includes: Experiential Learning Activity
Prerequisite(s): SYSC 3320 or SYSC 3601, and enrolment in Computer Systems Engineering.
Lectures two hours a week, laboratory four hours a week.

SYSC 4806 [0.5 credit]
Software Engineering Lab
Applying the full spectrum of engineering and programming knowledge acquired in the program through team projects in the laboratory. Practice in doing presentations and reviews. Lectures will discuss software engineering issues as they relate to the projects, from a mature point of view.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 3005, SYSC 3110, and enrolment in Software Engineering, or permission of the department.
Lectures two hours a week, laboratory four hours a week.

SYSC 4810 [0.5 credit]
Introduction to Network and Software Security
Fundamental concepts, terminologies, and theories of computer security; principles underlying common security controls; various types of threats and attacks on networks and software systems, how they work, and controls for dealing with them; security risk assessment and management; legal and ethical aspects of computer security.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Communications, Computer Systems or Software Engineering.
Lectures three hours a week, problem analysis one and a half hours a week.

SYSC 4906 [0.5 credit]
Special Topics
At the discretion of the Department, a course dealing with selected advanced topics of interest to students in Biomedical and Electrical, Communications, Computer Systems, Electrical, Software Engineering, and Engineering Physics may be offered.
Prerequisite(s): permission of the Department.
SYSC 4907 [1.0 credit]
Engineering Project
Student teams develop professional-level experience by applying previously acquired knowledge to a major design project. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.
Lecture one hour a week, laboratory seven hours a week.

SYSC 4917 [1.0 credit]
Biomedical Engineering Project
Student teams develop professional-level experience by applying previously acquired knowledge to a major design project in biomedical engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in Biomedical and Electrical Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.
Lecture one hour a week, laboratory seven hours a week.

SYSC 4927 [1.0 credit]
Software Engineering Project
Student teams gain professional-level experience by applying and extending previously acquired knowledge in a major design project in software engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Software Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.
Lecture one hour a week, laboratory seven hours a week.

SYSC 4937 [1.0 credit]
Communications Engineering Project
Student teams gain professional-level experience by applying and extending previously acquired knowledge in a major design project in communications engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Communications Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.
Lecture one hour a week, laboratory seven hours a week.

English
This section presents the requirements for programs in:
- English B.A. Honours
- English with Concentration in Creative Writing B.A. Honours
- English with Concentration in Drama Studies B.A. Honours
- English B.A. Combined Honours
- English B.A.
- Specialization in Global Literatures B. G. In. S. Honours
- Stream in Global Literatures B.G.In.S.
- Minor in Drama Studies
- Minor in English Language and Literature
- Minor in Performance in the Public Sphere
- Minor in Professional Writing
- Certificate in Professional Writing
- Post-Baccalaureate Diploma in Professional Writing

Program Requirements

English

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.0 credit from:
   - FYSM 1004 [1.0] Reading Literatures and Cultures
   or
   - ENGL 1010 [0.5] Writing Essays about Literature
   and one from:
   - ENGL 1009 [0.5] Literature in Global Context
   - ENGL 1100 [0.5] Literature, Law, and Criminality
   - ENGL 1200 [0.5] Literature, Science, and Technology
   - ENGL 1300 [0.5] Literature, Psychology, and the Mind
   - ENGL 1400 [0.5] Literature, Art, and Culture
   - ENGL 1600 [0.5] Literature and Magic
   - ENGL 1700 [0.5] Climate Change and the Humanities

2. 2.0 credits in:
   - ENGL 2802 [1.0] Indigenous and Canadian Literatures
   - ENGL 3106 [1.0] Theories and Critical Practices

3. 2.0 credits in:
   - ENGL 2301 [0.5] Literatures and Cultures 500-1500
   - ENGL 2302 [0.5] Literatures and Cultures 1500-1700
   - ENGL 3500 [0.5] Literatures and Cultures 1700-1900
   - ENGL 3501 [0.5] Literatures and Cultures 1900-Now

4. 1.0 credit in:
   - ENGL 2920 [0.5] Topics in Decolonization and Migration I
   - ENGL 3930 [0.5] Topics in Decolonization and Migration II

5. 0.5 credit from:
   - ENGL 3910 [0.5] From Degree to Career
   - ENGL 3911 [0.5] Cultural Studies

6. 0.5 credit in:
   - ENGL 4950 [0.5] Topics in Postcolonial and Diaspora Lit. and Theory

7. 0.5 credit in ENGL at the 3000-level
### English with Concentration in Creative Writing

**B.A. Honours (20.0 credits)**

#### A. Credits Included in the Major CGPA (11.0 credits)

1. **1.0 credit from:**
   - ENGL 1009 [0.5] Literature in Global Context
   - ENGL 1100 [0.5] Literature, Law, and Criminality
   - ENGL 1200 [0.5] Literature, Science, and Technology
   - ENGL 1300 [0.5] Literature, Psychology, and the Mind
   - ENGL 1400 [0.5] Literature, Art, and Culture
   - ENGL 1600 [0.5] Literature and Magic
   - ENGL 1700 [0.5] Climate Change and the Humanities

2. **2.0 credits in:**
   - ENGL 2802 [1.0] Indigenous and Canadian Literatures
   - ENGL 3106 [1.0] Theories and Critical Practices

3. **2.0 credits in:**
   - ENGL 2301 [0.5] Literatures and Cultures 500-1500
   - ENGL 2302 [0.5] Literatures and Cultures 1500-1700
   - ENGL 3500 [0.5] Literatures and Cultures 1700-1900
   - ENGL 3501 [0.5] Literatures and Cultures 1900-Now

4. **1.0 credit in:**
   - ENGL 2920 [0.5] Topics in Decolonization and Migration I
   - ENGL 3930 [0.5] Topics in Decolonization and Migration II

5. **0.5 credit from:**
   - ENGL 3910 [0.5] From Degree to Career
   - ENGL 3911 [0.5] Cultural Studies

6. **1.0 credit from:**
   - ENGL 2901 [0.5] Writing Poetry
   - ENGL 2903 [0.5] Writing Fiction
   - ENGL 2915 [0.5] Writing Creative Nonfiction

7. **1.0 credit from:**
   - ENGL 3902 [0.5] Writing Screenplays
   - ENGL 3903 [0.5] Writing Fiction (Intermediate)
   - ENGL 3906 [0.5] Writing Popular Fiction
   - ENGL 3915 [0.5] Special Topics in Writing
   - ENGL 3916 [0.5] Spoken Word Poetry Workshop

8. **0.5 credit from:**
   - ENGL 2011 [0.5] Children’s Literature
   - ENGL 2103 [0.5] Introduction to the Novel
   - ENGL 2104 [0.5] Drama Workshop
   - ENGL 2107 [0.5] Science Fiction

#### Total Credits: 20.0

### English with Concentration in Drama Studies

**B.A. Honours (20.0 credits)**

#### A. Credits Included in the Major CGPA (11.0 credits)

1. **1.0 credit from:**
   - FYSM 1004 [1.0] Reading Literatures and Cultures
   - ENGL 1010 [0.5] Writing Essays about Literature
   - or
   - ENGL 1009 [0.5] Literature in Global Context
   - ENGL 1100 [0.5] Literature, Law, and Criminality
   - ENGL 1200 [0.5] Literature, Science, and Technology
   - ENGL 1300 [0.5] Literature, Psychology, and the Mind
   - ENGL 1400 [0.5] Literature, Art, and Culture
   - ENGL 1600 [0.5] Literature and Magic
   - ENGL 1700 [0.5] Climate Change and the Humanities

2. **2.0 credits in:**
   - ENGL 2802 [1.0] Indigenous and Canadian Literatures
   - ENGL 3106 [1.0] Theories and Critical Practices

3. **2.0 credits in:**
   - ENGL 2301 [0.5] Literatures and Cultures 500-1500
   - ENGL 2302 [0.5] Literatures and Cultures 1500-1700
   - ENGL 3500 [0.5] Literatures and Cultures 1700-1900
   - ENGL 3501 [0.5] Literatures and Cultures 1900-Now

4. **1.0 credit in:**
   - ENGL 2920 [0.5] Topics in Decolonization and Migration I
   - ENGL 2930 [0.5] Topics in Decolonization and Migration II

5. **0.5 credit from:**
   - ENGL 3910 [0.5] From Degree to Career
   - ENGL 3911 [0.5] Cultural Studies

6. **1.0 credit from:**
   - ENGL 2901 [0.5] Writing Poetry
   - ENGL 2903 [0.5] Writing Fiction
   - ENGL 2915 [0.5] Writing Creative Nonfiction

7. **1.0 credit from:**
   - ENGL 3902 [0.5] Writing Screenplays
   - ENGL 3903 [0.5] Writing Fiction (Intermediate)
   - ENGL 3906 [0.5] Writing Popular Fiction
   - ENGL 3915 [0.5] Special Topics in Writing
   - ENGL 3916 [0.5] Spoken Word Poetry Workshop

8. **0.5 credit from:**
   - ENGL 2011 [0.5] Children’s Literature
   - ENGL 2103 [0.5] Introduction to the Novel
   - ENGL 2104 [0.5] Drama Workshop
   - ENGL 2107 [0.5] Science Fiction

#### Total Credits: 20.0
**B.A. Combined Honours (20.0 credits)**

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>5. 0.5 credit from:</td>
<td>ENGL 3930 [0.5]</td>
<td>Topics in Decolonization and Migration II</td>
</tr>
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<td>5. 2.0 credits in:</td>
<td>ENGL 3910 [0.5]</td>
<td>From Degree to Career</td>
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<tr>
<td>5. 1.0 credit from:</td>
<td>ENGL 3911 [0.5]</td>
<td>Cultural Studies</td>
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<td>6. 0.5 credit from:</td>
<td>ENGL 3305 [0.5]</td>
<td>Shakespeare and the Stage</td>
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<td>6. 2.0 credits in:</td>
<td>ENGL 3306 [0.5]</td>
<td>Shakespeare and Film</td>
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<td>7. 1.0 credit from:</td>
<td>ENGL 2104 [0.5]</td>
<td>Drama Workshop</td>
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<td>7. 1.0 credit from:</td>
<td>ENGL 3902 [0.5]</td>
<td>Writing Screenplays</td>
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<td>7. 1.0 credit from:</td>
<td>ENGL 3904 [0.5]</td>
<td>Intermediate Drama Workshop</td>
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<td>8. 1.0 credit from:</td>
<td>ENGL 2605 [0.5]</td>
<td>Greek and Roman Drama</td>
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<td>8. 1.0 credit from:</td>
<td>ENGL 2609 [0.5]</td>
<td>Drama: Modes and Movements</td>
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<td>8. 1.0 credit from:</td>
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<td>Indigenous Drama</td>
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<td>8. 1.0 credit from:</td>
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<td>Drama: Contemporary Criticism</td>
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<td>8. 1.0 credit from:</td>
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<td>Global Stages and Theories</td>
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<td>9. 0.5 credit in:</td>
<td>ENGL 4950 [0.5]</td>
<td>Topics in Postcolonial and Diaspora Lit. and Theory</td>
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<td>10. 0.5 credit from:</td>
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<td>10. 1.0 credit from:</td>
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<td>Topics in Performance</td>
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<td>11. 1.0 credit in ENGL at the 4000-level</td>
<td>ENGL 3901 [0.5]</td>
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<td>12. 8.0 credits in electives not in ENGL</td>
<td>ENGL 3910 [0.5]</td>
<td>Writing Essays about Literature</td>
</tr>
<tr>
<td>13. 1.0 credit in free electives</td>
<td>ENGL 3911 [0.5]</td>
<td>from other discipline</td>
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**Total Credits**: 20.0

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### English

**B.A. (15.0 credits)**

#### A. Credits Included in the Major CGPA (6.0 credits)

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<tr>
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<tr>
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<td>Reading Literatures and Cultures</td>
</tr>
<tr>
<td>or</td>
<td>ENGL 1010 [0.5]</td>
<td>Writing Essays about Literature</td>
</tr>
<tr>
<td>and one from:</td>
<td>ENGL 1009 [0.5]</td>
<td>Literature in Global Context</td>
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<tr>
<td>11. 1.0 credit in ENGL at the 4000-level</td>
<td>ENGL 1100 [0.5]</td>
<td>Literature, Law, and Criminality</td>
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<tr>
<td>12. 1.0 credit in ENGL at the 4000-level</td>
<td>ENGL 1200 [0.5]</td>
<td>Literature, Science, and Technology</td>
</tr>
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<td>13. 1.0 credit in ENGL at the 4000-level</td>
<td>ENGL 1300 [0.5]</td>
<td>Literature, Psychology, and the Mind</td>
</tr>
<tr>
<td>14. 1.0 credit in ENGL at the 4000-level</td>
<td>ENGL 1400 [0.5]</td>
<td>Literature, Art, and Culture</td>
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<td>15. 1.0 credit in ENGL at the 4000-level</td>
<td>ENGL 1600 [0.5]</td>
<td>Literature and Magic</td>
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<tr>
<td>16. 1.0 credit in ENGL at the 4000-level</td>
<td>ENGL 1700 [0.5]</td>
<td>Climate Change and the Humanities</td>
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**B. Credits Not Included in the Major CGPA (9.0 credits)**

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<th>Course Title</th>
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<tr>
<td>2. 2.0 credits in:</td>
<td>ENGL 2301 [0.5]</td>
<td>Literatures and Cultures 500-1500</td>
</tr>
<tr>
<td>2. 2.0 credits in:</td>
<td>ENGL 2302 [0.5]</td>
<td>Literatures and Cultures 1500-1700</td>
</tr>
<tr>
<td>3. 2.0 credits in:</td>
<td>ENGL 3500 [0.5]</td>
<td>Literatures and Cultures 1700-1900</td>
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<tr>
<td>4. 1.0 credit in:</td>
<td>ENGL 2920 [0.5]</td>
<td>Topics in Decolonization and Migration I</td>
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<td>4. 1.0 credit in:</td>
<td>ENGL 3930 [0.5]</td>
<td>Topics in Decolonization and Migration II</td>
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<tr>
<td>5. 1.0 credit from:</td>
<td>ENGL 3106 [1.0]</td>
<td>Theories and Critical Practices</td>
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<tr>
<td>or</td>
<td>ENGL 3910 [0.5]</td>
<td>From Degree to Career</td>
</tr>
<tr>
<td>5. 1.0 credit from:</td>
<td>ENGL 3911 [0.5]</td>
<td>Cultural Studies</td>
</tr>
<tr>
<td>6. 6.0 credits in electives not in ENGL</td>
<td>ENGL 2802 [1.0]</td>
<td>Indigenous and Canadian Literatures</td>
</tr>
</tbody>
</table>

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**The Academic Year (Graduate and Undergraduate Studies)**
7. 3.0 credits in free electives 3.0

Total Credits 15.0

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Literatures
B. G. In. S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5
   - **GINS 1000 [0.5]** Global History
   - **GINS 1010 [0.5]** International Law and Politics
   - **GINS 1020 [0.5]** Ethnography, Globalization and Culture  
   - **GINS 2000 [0.5]** Ethics and Globalization
   - **GINS 2010 [0.5]** Globalization and International Economic Issues
   - **GINS 2020 [0.5]** Global Literatures
   - **GINS 3010 [0.5]** Global and International Theory
   - **GINS 3020 [0.5]** Places, Boundaries, Movements and Global Environmental Change
   - **GINS 4090 [0.5]** Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation 0.0
   - **GINS 1300 [0.0]** International Experience Requirement Preparation

3. 7.5 credits in: the Specialization 7.5
   a. 1.0 credit in: Foundations 1.0
      - **ENGL 1009 [0.5]** Literature in Global Context
      - **ENGL 1010 [0.5]** Writing Essays about Literature
   b. 1.0 credit from: Methods 1.0
      - **ENGL 2005 [0.5]** Theory and Criticism
      - **ENGL 3605 [0.5]** Modern and Contemporary Literary Theory
      - **ENGL 3965 [0.5]** Intro to Postcolonial Theory
   c. 1.0 credit from: Global Literatures at the 2000-level 1.0
      - **ENGL 2908 [0.5]** Celtic Literatures
      - **ENGL 2926 [0.5]** African Literatures I
      - **ENGL 2927 [0.5]** African Literatures II
      - **ENGL 2936 [0.5]** South Asian Literatures I
      - **ENGL 2937 [0.5]** South Asian Literatures II
      - **ENGL 2956 [0.5]** Literatures of the Americas I
      - **ENGL 2957 [0.5]** Literatures of the Americas II
   d. 1.0 credit from: Global Literatures at the 3000-level 1.0
      - **ENGL 3805 [0.5]** Literature and Culture in Russia and Eurasia
      - **ENGL 3940 [0.5]** Studies in Diaspora Lit.
      - **ENGL 3960 [0.5]** Studies in Indigenous Literature
      - **ENGL 3972 [0.5]** Studies in Postcolonial Literature
   e. 1.0 additional credit in Global Literatures courses, not already used in c. or d. above 1.0
   f. 1.0 credit from: Context for Global Literatures 1.0
      - **ENGL 2105 [0.5]** History of the English Language
      - **ENGL 2700 [0.5]** American Literatures I

   g. 1.5 credits from: Honours Seminars and Honours Research Essay 1.5
      - **ENGL 4115 [0.5]** Culture and the Text (topic in Global Literatures)
      - **ENGL 4802 [0.5]** Race, Ethnicity and Canadian Lit.
      - **ENGL 4947 [0.5]** Issues in Diaspora Literature
      - **ENGL 4960 [0.5]** Indigenous Literatures I
      - **ENGL 4961 [0.5]** Indigenous Literatures II
      - **ENGL 4975 [0.5]** Issues in Postcolonial Theory
      - **GINS 4908 [1.0]** Honours Research Essay (topic in Global Literatures)

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits 20.0

Stream in Global Literatures
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0
   - **GINS 1000 [0.5]** Global History
   - **GINS 1010 [0.5]** International Law and Politics
   - **GINS 1020 [0.5]** Ethnography, Globalization and Culture
   - **GINS 2000 [0.5]** Ethics and Globalization
   - **GINS 2010 [0.5]** Globalization and International Economic Issues
   - **GINS 2020 [0.5]** Global Literatures
   - **GINS 3010 [0.5]** Global and International Theory
   - **GINS 3020 [0.5]** Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0
   a. Foundations
      - **ENGL 1009 [0.5]** Literature in Global Context
      - **ENGL 1010 [0.5]** Writing Essays about Literature
   b. Methods
      - **ENGL 2005 [0.5]** Theory and Criticism
      - **ENGL 3605 [0.5]** Modern and Contemporary Literary Theory
      - **ENGL 3965 [0.5]** Intro to Postcolonial Theory
   c. Global Literatures at the 2000-level
      - **ENGL 2908 [0.5]** Celtic Literatures
      - **ENGL 2926 [0.5]** African Literatures I
      - **ENGL 2927 [0.5]** African Literatures II
      - **ENGL 2936 [0.5]** South Asian Literatures I
      - **ENGL 2937 [0.5]** South Asian Literatures II
      - **ENGL 2956 [0.5]** Literatures of the Americas I
      - **ENGL 2957 [0.5]** Literatures of the Americas II
   d. Global Literatures at the 3000-level
      - **ENGL 3805 [0.5]** Literature and Culture in Russia and Eurasia
      - **ENGL 3940 [0.5]** Studies in Diaspora Lit.
      - **ENGL 3972 [0.5]** Studies in Postcolonial Literature

   e. 1.0 additional credit in Global Literatures courses, not already used in c. or d. above 1.0
   f. 1.0 credit from: Context for Global Literatures 1.0
      - **ENGL 2105 [0.5]** History of the English Language
      - **ENGL 2700 [0.5]** American Literatures I

   g. 1.5 credits from: Honours Seminars and Honours Research Essay 1.5
      - **ENGL 4115 [0.5]** Culture and the Text (topic in Global Literatures)
      - **ENGL 4802 [0.5]** Race, Ethnicity and Canadian Lit.
      - **ENGL 4947 [0.5]** Issues in Diaspora Literature
      - **ENGL 4960 [0.5]** Indigenous Literatures I
      - **ENGL 4961 [0.5]** Indigenous Literatures II
      - **ENGL 4975 [0.5]** Issues in Postcolonial Theory
      - **GINS 4908 [1.0]** Honours Research Essay (topic in Global Literatures)
Minor in Global Literatures (4.0 credits)
Open to all undergraduate degree students not in English programs.

Requirements:
1. 1.0 credit from:
   - FYSM 1004 [1.0] Reading Literatures and Cultures
or
   - ENGL 1010 [0.5] Writing Essays about Literature
   and one from:
   - ENGL 1009 [0.5] Literature in Global Context
   - ENGL 1100 [0.5] Literature, Law, and Criminality
   - ENGL 1200 [0.5] Literature, Science, and Technology
   - ENGL 1300 [0.5] Literature, Psychology, and the Mind
   - ENGL 1400 [0.5] Literature, Art, and Culture
   - ENGL 1600 [0.5] Literature and Magic
   - ENGL 1700 [0.5] Climate Change and the Humanities
2. 1.0 credit from:
   - ENGL 2104 [0.5] Drama Workshop
   - ENGL 3608 [0.5] Topics in Theatre Management
   - ENGL 3902 [0.5] Writing Screenplays
   - ENGL 3904 [0.5] Intermediate Drama Workshop
   - ENGL 3905 [0.5] Topics in Performance
   - ENGL 4605 [0.5] Theatre Production Seminar
3. 1.0 credit in:
   - ENGL 3305 [0.5] Shakespeare and the Stage
   - ENGL 3306 [0.5] Shakespeare and Film
4. 1.0 credit from:
   - ENGL 2605 [0.5] Greek and Roman Drama
   - ENGL 2609 [0.5] Drama: Modes and Movements
   - ENGL 2709 [0.5] Indigenous Drama
   - ENGL 3609 [0.5] Drama: Contemporary Criticism
   - ENGL 4609 [0.5] Global Stages and Theories
5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Minor in Drama Studies (4.0 credits)
Open to all undergraduate degree students not in English programs.

Requirements:
1. 1.0 credit from:
   - FYSM 1004 [1.0] Reading Literatures and Cultures
or
   - ENGL 1010 [0.5] Writing Essays about Literature
   and one from:
   - ENGL 1009 [0.5] Literature in Global Context
   - ENGL 1100 [0.5] Literature, Law, and Criminality
   - ENGL 1200 [0.5] Literature, Science, and Technology
   - ENGL 1300 [0.5] Literature, Psychology, and the Mind
   - ENGL 1400 [0.5] Literature, Art, and Culture
   - ENGL 1600 [0.5] Literature and Magic
   - ENGL 1700 [0.5] Climate Change and the Humanities
2. 2.0 credits in ENGL at the 2000-level or above
3. 1.0 credit in ENGL at the 3000-level or above
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Minor in Performance in the Public Sphere (4.0 credits)
This minor is available to all undergraduate degree students.

Requirements:
1. 1.0 credit in:
   - PIPS 2000 [0.5] Theories of Performance in the Public Sphere
   - PIPS 2001 [0.5] Workshop in Contemporary and Historical Modes of Performance
2. 0.5 credit from:
   - PIPS 3000 [0.5] Site-Specific Performance
   - PIPS 3001 [0.5] Experimental Uses of Technology in Performance
3. 0.5 credit from:
   - PIPS 4200 [0.5] Special Topics in Performance and the Public Sphere
   - PIPS 4800 [0.5] Practicum in Performance Studies
4. 2.0 credits in approved electives from:
   - English
     - ENGL 1609 [0.5] Introduction to Drama Studies
     - ENGL 2104 [0.5] Drama Workshop
     - ENGL 2605 [0.5] Greek and Roman Drama
     - ENGL 2609 [0.5] Drama: Modes and Movements
     - ENGL 2709 [0.5] Indigenous Drama
     - ENGL 3305 [0.5] Shakespeare and the Stage
     - ENGL 3609 [0.5] Drama: Contemporary Criticism
     - ENGL 3902 [0.5] Writing Screenplays
     - ENGL 3904 [0.5] Intermediate Drama Workshop
     - ENGL 4605 [0.5] Theatre Production Seminar
     - ENGL 4609 [0.5] Global Stages and Theories
   - History
     - HIST 2811 [0.5] Public History from Memory to Museums
     - HIST 3001 [0.5] History at the Movies
Honours Concentration in Drama Studies.

Concentration in Creative Writing or the English BA undergraduate students not in the English BA Honours program. CGPA in the Honours program is at least 7.5. Open to all undergraduate students. Students may declare only one of the Professional Writing Minor in Professional Writing (4.0 credits) and degree must be satisfied.

### Minor in Professional Writing (4.0 credits)

Students may declare only one of the Professional Writing Certificate or the Professional Writing Minor. Open to all undergraduate students.

**Requirements:**

1. **1.0 credit in:**
   - ENGL 1008 [0.5] English Grammar: Fundamentals
   - ALDS 2202 [0.5] Analysis of Written Language Use

2. **1.0 credit in:**
   - ALDS 3402/ENGL 3415 Research and Theory in Workplace Writing
   - ALDS 3414/ENGL 4414 Introduction to Professional Writing and Editing

3. **2.0 credits in:**
   - ENGL 4135 [0.5] Studies in Publishing
   - ALDS 4404/ENGL 4414 Writing and Knowledge-Making in the Professions
   - ALDS 4414/ENGL 4415 Professional Writing I
   - ALDS 4415/ENGL 4416 Professional Writing II

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

### Certificate in Professional Writing (5.0 credits)

Students may declare only one of the Professional Writing Certificate or the Professional Writing Minor. To be taken concurrently with an Honours degree, provided the Major CGPA in the Honours program is at least 7.5. Open to all undergraduate students not in the English BA Honours Concentration in Creative Writing or the English BA Honours Concentration in Drama Studies.

**Graduation**

A candidate for the Certificate in Professional Writing (CPW) must obtain a grade of C or higher in all courses taken at Carleton University under the CPW program.

**Requirements:**

1. **1.0 credit in:**
   - ENGL 1008 [0.5] English Grammar: Fundamentals
   - ALDS 2202 [0.5] Analysis of Written Language Use

2. **3.0 credits in:**
   - ALDS 3402/ENGL 3415 Research and Theory in Workplace Writing
   - ALDS 3414/ENGL 3415 Introduction to Professional Writing and Editing
   - ALDS 4404/ENGL 4415 Writing and Knowledge-Making in the Professions
   - ENGL 4135 [0.5] Studies in Publishing
   - ALDS 4414/ENGL 4415 Professional Writing I
   - ALDS 4415/ENGL 4416 Professional Writing II

3. **1.0 credit from:**
   - ALDS 3401/ENGL 3416 Studies in Writing in Academic Writing
   - ALDS 4403/ENGL 4416 Writing and Knowledge-Making in the Disciplines
   - ALDS 4405/ENGL 4416 Writing in School and the Workplace

**Total Credits** 5.0

### Post-Baccalaureate Diploma in Professional Writing (5.0 credits)

Students applying for admission must have an Honours undergraduate degree with a GPA of 8.0 or higher. The PBD is a one-year, 5.0 credit post-degree option.

**Graduation**

A candidate for the post-baccalaureate diploma must obtain a grade of C- or higher in all courses taken at Carleton University under the post-baccalaureate program.

**Requirements:**

1. **1.0 credit in:**
   - ENGL 1008 [0.5] English Grammar: Fundamentals
   - ALDS 2202 [0.5] Analysis of Written Language Use

2. **3.0 credits in:**
   - ALDS 3402/ENGL 3415 Research and Theory in Workplace Writing
   - ALDS 3414/ENGL 3415 Introduction to Professional Writing and Editing
   - ALDS 4404/ENGL 4415 Writing and Knowledge-Making in the Professions
   - ENGL 4135 [0.5] Studies in Publishing
   - ALDS 4414/ENGL 4415 Professional Writing I
   - ALDS 4415/ENGL 4416 Professional Writing II

3. **1.0 credit from:**
   - ALDS 3401/ENGL 3416 Studies in Writing in Academic Writing
   - ALDS 4403/ENGL 4416 Writing and Knowledge-Making in the Disciplines
   - ALDS 4405/ENGL 4416 Writing in School and the Workplace

**Total Credits** 5.0
B.A. Regulations
The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars
B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement
Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SRVE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific
undergraduate credential intended to:

A post-baccalaureate diploma is defined as a stand-alone
definition

Regulations of the University section of this Calendar).

must satisfy the University regulations (see the Academic

In addition to the requirements presented here, students

Post-Baccalaureate Diploma

Regulations

Letter of Permission.

at Carleton, at the University of Ottawa on the Exchange

Agreement, or at a francophone university on a Letter

Permission. Students planning to take courses on

exchange or on a Letter of Permission should take
careful note of the residence requirement for a minimum

number of Carleton courses in their programs. Consult

Academic Regulations of the University section of this

Calendar for information regarding study on Exchange or

Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students

must satisfy the University regulations (see the Academic

Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

• qualify a candidate for consideration for entry into a

master's program, or

• bring a candidate who already possesses a bachelor's
degree up to a level of a bachelor's degree of 20.0

credits or more in another discipline, or

• provide a candidate who already possesses a twenty-
credit bachelor's degree in the same discipline the

opportunity to bring their previous studies to current

equivalents and/or to examine alternative areas, or

• provide a candidate with a professional undergraduate
credential for which the prior completion of an

undergraduate degree program is appropriate.

Program Requirements

• A post-baccalaureate diploma is normally constituted

of a minimum of 3.0 credits to a maximum of 5.0

credits of advanced undergraduate courses.

• A minimum of 3.0 residency credits counting toward

the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of

English as a Second Language (ESLA) courses may

be required from the following sequence: ESLA 1300,

ESLA 1500, ESLA 1900, ESLA 1905. No credits from this

sequence will be counted toward the post-baccalaureate
diploma.

Continuation

All post-baccalaureate diploma students are expected to

complete their diploma requirements within two calendar

years after the date of initial registration. After this period

student may be withdrawn.

Graduation

• A candidate for a post-baccalaureate diploma must

have an overall CGPA of at least 6.5 to graduate.

• A candidate for a post-baccalaureate diploma must

obtain a grade of C- or higher in each course taken in

fulfillment of the program requirements.

• Students should consult with the Department, School

or Institute when planning their diploma and selecting
courses.

Co-operative Education

For more information about how to apply for the Co-op

program and how the Co-op program works please visit

the Co-op website.

All students participating in the Co-op program are

governed by the Undergraduate Co-operative Education

Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to co-op in one of two ways; directly

from high school or after beginning a degree program at

Carleton.

If a student is admitted to co-op from high school, their

grades will be reviewed two terms to one year prior to

their first work term to ensure they continue to meet the

academic requirements after their 1st or 2nd year of study.
The time at which evaluation takes place depends on the

program of study. Students will automatically be notified
via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

**Employment**

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts. While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours English: Co-op Admission and Continuation Requirements
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the B.A. Honours English program;
2. Obtained and maintained an overall CGPA of 9.0 or higher at the end of second year of academic study
3. Obtained and maintained an overall CGPA of 8.0 or higher and a major CGPA of 9.0 or higher by the end of third year of academic study

Students in B.A. Honours English must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: ENGL 3999

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements
Degrees
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or French). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing
B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off
averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma

• Post-Baccalaureate Diploma in Professional Writing

To be eligible for admission to the Post-Baccalaureate Diploma in Professional Writing students must normally present an honours undergraduate degree with a GPA of 8.0 or higher.

English (ENGL) Courses

ENGL 1002 [0.5 credit]
Writing and Language I
The first half of an introduction to the principles, styles, and structures of effective writing, including essay writing. Course offered only in Nunavut as part of Certificate in Nunavut Public Service Studies Program.
Includes: Experiential Learning Activity
Precludes additional credit for ENGL 1005 (no longer offered).
Lectures and workshop three hours a week.

ENGL 1003 [0.5 credit]
Writing and Language II
The second half of an introduction to the principles, styles, and structures of effective writing, including essay writing. Course offered only in Nunavut as part of Certificate in Nunavut Public Service Studies Program.
Includes: Experiential Learning Activity
Precludes additional credit for ENGL 1005 (no longer offered).
Prerequisite(s): ENGL 1002.
Lectures and workshop three hours a week.

ENGL 1008 [0.5 credit]
English Grammar: Fundamentals
A practical and intensive overview of English grammar designed for students who want to improve their understanding of grammar for their own writing and reading. This is not an ESL course.
Lectures three hours a week.

ENGL 1009 [0.5 credit]
Literature in Global Context
Introduction to the study of literature from a global perspective. Students will be exposed to writers from various locations and to methods for studying literature across national boundaries.
Lecture three hours a week.

ENGL 1010 [0.5 credit]
Writing Essays about Literature
An intensive writing course focusing on the formulation and construction of a literary essay.
Precludes additional credit for ENGL 1020.
Lectures three hours a week.

ENGL 1020 [0.5 credit]
Effective Writing
The rhetorical principles, skills, and structures necessary for the kind of writing done at the university level. Clear and effective composition as a mode of research, discovery, analysis, and persuasion. Students pursuing the English major or minor should take ENGL 1010 instead of ENGL 1020.
Precludes additional credit for ENGL 1010.
Lectures three hours a week.

ENGL 1100 [0.5 credit]
Literature, Law, and Criminality
An introductory course whose readings focus on the intersections between literature, law, and criminality. Topics will vary. Consult the English Department website for the current topic.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.
Lecture three hours a week.

ENGL 1200 [0.5 credit]
Literature, Science, and Technology
An introductory course whose readings focus on the intersections between literature, science, and technology. Topics will vary. Consult the English Department website for the current topic.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1300, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.
Lectures three hours a week.

ENGL 1300 [0.5 credit]
Literature, Psychology, and the Mind
An introductory course whose readings focus on the intersections between literature, psychology, and the mind. Topics will vary. Consult the English Department website for the current topic.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.
Lectures three hours a week.
ENGL 1400 [0.5 credit]
Literature, Art, and Culture
An introductory course whose readings focus on the intersections between literature, art, and culture. Topics will vary. Consult the English Department website for the current topic.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1600, ENGL 1700, FYSM 1004.
Lectures three hours a week.

ENGL 1500 [0.5 credit]
Introduction to Creative Writing
An introduction to the practice of creative writing, focusing on poetry, the short story, creative non-fiction, and drama. Emphasis is also placed on contextualizing creative writing as an academic discipline, a mode of self-expression, and a professional industry.
Includes: Experiential Learning Activity
Lectures and workshops three hours a week.

ENGL 1600 [0.5 credit]
Literature and Magic
An introductory course whose readings focus on the intersections between literature and magic. Topics will vary. Consult the English Department website for the current topic.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1700, FYSM 1004.
Lecture three hours a week.

ENGL 1609 [0.5 credit]
Introduction to Drama Studies
An introduction to drama studies, combining attention to theatre history, conventions, and devices, with attention to theatrical practice, and interpretation of selected dramatic texts. Students will develop a vocabulary for speaking and writing with confidence about theatrical productions, theatre practice, and dramatic texts.
Lecture three hours a week.

ENGL 1700 [0.5 credit]
Climate Change and the Humanities
An introduction to literature and culture in the context of the environmental humanities and climate change.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, FYSM 1004.
Seminar or lecture three hours a week.

ENGL 2005 [0.5 credit]
Theory and Criticism
An introduction to theories and methods of literary analysis. Through the study of literature, theory, and criticism, students will explore disciplinary history, critical terms, textual analysis, and research methods.
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2008 [1.0 credit]
Myth and Symbol
A literary study of myths and symbols from oral traditions to contemporary forms through selected interdisciplinary and theoretical approaches.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2100 [0.5 credit]
Topics in Popular Culture
Study of a selected topic related to popular culture.
Precludes additional credit for ENGL 2101 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2103 [0.5 credit]
Introduction to the Novel
A historical and critical study of the novel.
Precludes additional credit for ENGL 2003 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2104 [0.5 credit]
Drama Workshop
A course dealing with the rudiments of theatrical performance: voice, movement, improvisation, interpretation. Exercises are based upon examples drawn from classical and contemporary repertoires.
Includes: Experiential Learning Activity
Precludes additional credit for ENGL 2000 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Workshop three hours a week.
ENGL 2105 [0.5 credit]
History of the English Language
A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions.
Also listed as LING 2802.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2106 [0.5 credit]
Topics in Popular Fiction
An introduction to the critical study of popular fiction. Topics will vary but may include popular narrative forms such as fantasy, horror, mystery, romance, Young Adult (YA) fiction, etc.
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2107 [0.5 credit]
Science Fiction
A study of the history and traditions of science fiction, speculative fiction, fantasy, and utopia, covering various periods, nationalities, genres, and/or media.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2108 [0.5 credit]
Women and Literature
Representations of women and the construction of femininity in selected literary texts, the position of women as readers and authors, and the impact of feminist criticism on literary analysis.
Precludes additional credit for ENGL 2902 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2109 [0.5 credit]
Gender, Sexuality and Literature
How literature represents, reproduces, and resists cultural notions of gender and sexuality. Topics may include: gender and sexuality in relation to literary history, production, and reception; literature by/about “deviant” or subcultural sexualities and genders.
Precludes additional credit for ENGL 2902 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2200 [0.5 credit]
Creativity, Imagination, and Writing
Creativity, Imagination, and Writing
This course not only surveys theories about the imagination and creativity but also teaches various rhetorical exercises and strategies for sparking inventive thinking and new ideas to fire the writing process. Consult the English Department's website for detailed information.
Prerequisite(s): second-year standing or permission of the department. Students in English may take this course only as a free elective.
Lectures three hours a week.

ENGL 2201 [0.5 credit]
The Pleasures of Reading
This course introduces majors and non-majors to a selection of known and unknown "masterpieces." Texts may be grouped to explore specific themes. Requirements include a variety of assignments but no formal essay. Consult the English Department's website for detailed information.
Prerequisite(s): second-year standing or permission of the department. Students in English may take this course only as a free elective.
Lectures three hours a week.

ENGL 2202 [0.5 credit]
Weird Fiction
Introduction to a sub-category of speculative fiction that spans from traditional ghost stories and tales of the macabre to the “New Weird”: contemporary writing that overthrows the clichés, conventions, and expectations of fantasy, horror, and science fiction.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2301 [0.5 credit]
Literatures and Cultures 500-1500
A study of the period between 500 and 1500, with attention to cultural, historical, geographical, and literary contexts.
Precludes additional credit for ENGL 2300 (no longer offered).
Prerequisite(s): Second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2302 [0.5 credit]
Literatures and Cultures 1500-1700
A study of the period between 1500 and 1700, with attention to cultural, historical, geographical, and literary contexts.
Precludes additional credit for ENGL 2300 (no longer offered).
Prerequisite(s): Second-year standing or permission of the department.
Lectures three hours a week.
ENGL 2400 [0.5 credit]
Introduction to Digital Humanities
An introduction to the principal debates in and approaches to the Digital Humanities.
Also listed as DIGH 2001.
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2401 [0.5 credit]
Digital Humanities: Theory and Method
A multidisciplinary survey of core theories, methodologies and tools within the Digital Humanities. Assignments will include collaborative work and applied projects.
Includes: Experiential Learning Activity
Also listed as DIGH 2002.
Prerequisite(s): second-year standing or permission of the department.
Lecture and workshop three hours a week.

ENGL 2500 [0.5 credit]
Classical Mythology
A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth.
Also listed as CLCV 2500.
Precludes additional credit for ENGL 2007/CLCV 2000 (no longer offered).
Prerequisite(s): second-year standing or permission of the unit.
Lectures three hours a week.

ENGL 2600 [0.5 credit]
History of World Cinema I
Historical survey of world cinema primarily from 1895 to 1945, examining the forms, structures and stylistic conventions of various periods and nations.
Also listed as FILM 2606.
Precludes additional credit for ENGL 2608 (no longer offered) and FILM 2608 (no longer offered).
Prerequisite(s): FILM 1101 or FILM 1120 or a 1000-level English course, and second-year standing, or permission of the discipline.
Lecture and screening three hours a week, lecture one hour a week.

ENGL 2601 [0.5 credit]
History of World Cinema II
Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations.
Also listed as FILM 2607.
Precludes additional credit for ENGL 2608 (no longer offered) and FILM 2608 (no longer offered).
Prerequisite(s): ENGL 2600 or FILM 2606 or permission of the department.
Lecture and screening three hours a week, lecture one hour a week.

ENGL 2605 [0.5 credit]
Greek and Roman Drama
An examination of the genres of tragedy and comedy in Greco-Roman antiquity.
Also listed as CLCV 2100.
Precludes additional credit for CLCV 2009, ENGL 2009.
Prerequisite(s): second year standing or permission of the unit.
Lecture three hours a week.

ENGL 2609 [0.5 credit]
Drama: Modes and Movements
A study of dramatic texts and traditions, offering attention to major dramatic modes and movements such as Ritual, Dance, Naturalism, Expressionism, Absurdism, Political Theatre, Feminist Theatre, and Global/Intercultural Theatre. Each will be investigated in the context of performance videos, live performances, and/or written text.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2700 [0.5 credit]
American Literatures I
Introduction to the traditions of American literature through 1865.
Precludes additional credit for ENGL 2702 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2701 [0.5 credit]
American Literatures II
Introduction to the traditions of American literature after 1865.
Precludes additional credit for ENGL 2702 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2709 [0.5 credit]
Indigenous Drama
A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors, and other practitioners.
Also listed as INDG 2709.
Prerequisite(s): second-year standing, or permission of the Department.
Lectures three hours a week.

ENGL 2730 [0.5 credit]
Culture and Climate Change
Selected topics related to climate change and cultural studies.
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.
ENGL 2802 [1.0 credit]
Indigenous and Canadian Literatures
A survey of Canadian literary cultures in English from their beginnings to the present that frames them in the wider context of Indigenous writing and storytelling. This course is writing-attentive.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2900 [0.5 credit]
Literature of the Self
A study of developments in the literary representation of the self. The course considers a wide range of major texts from the Middle Ages to the present.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2901 [0.5 credit]
Writing Poetry
A workshop involving regular assignments in writing poetry and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.
Workshop three hours a week.

ENGL 2903 [0.5 credit]
Writing Fiction
A workshop involving regular assignments in writing prose fiction and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.
Workshop three hours a week.

ENGL 2906 [0.5 credit]
Culture and Society
A study of literature in relation to its social and political contexts. Topics and periods vary.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2908 [0.5 credit]
Celtic Literatures
The literatures of Ireland, Scotland, and/or Wales. Topics will vary in national and historical scope and may be organized by theme, author, and/or genre.
Precludes additional credit for ENGL 2602 and ENGL 2606 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2910 [0.5 credit]
Book Arts Workshop
This experiential learning course immerses students in the practical arts and histories of book production.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing or permission of the department.
Workshop three hours a week.

ENGL 2915 [0.5 credit]
Writing Creative Nonfiction
A workshop involving regular assignments in reading and writing creative nonfiction and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.
Workshop three hours a week.

ENGL 2920 [0.5 credit]
Topics in Decolonization and Migration I
An introduction to the study of literature and culture in the context of topics such as empire and decolonization, diaspora, migration and globalization, race, and ethnicity. Themes, authors, and geographical and temporal focus will vary.
Prerequisite(s): Second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2926 [0.5 credit]
African Literatures I
An introductory survey of modern African literatures, discourses, and cultural production in the first half of the 20th century.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2927 [0.5 credit]
African Literatures II
A survey of modern African literatures, discourses, and cultural production from the era of political independence from colonialism (the 1960s) to the present.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2936 [0.5 credit]
South Asian Literatures I
An introductory historical survey of the literatures of South Asia to the early colonial era, starting with the Indian epics and concluding with literary traditions of 18th-century India.
Precludes additional credit for ENGL 2502 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.
ENGL 2937 [0.5 credit]
South Asian Literatures II
An introductory survey of literatures of South Asia from the colonial and postcolonial eras. Topics include the nationalist movement, neo-colonialism, and post-colonialism. Precludes additional credit for ENGL 2502 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2956 [0.5 credit]
Literatures of the Americas I
Introduction to comparative and transnational approaches to the literatures and oratures of the Caribbean, and North and South America, with emphasis on the pre-colonial and colonial eras. Precludes additional credit for ENGL 2909 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2957 [0.5 credit]
Literatures of the Americas II
Introduction to comparative and transnational approaches to 20th- and 21st-century writing from the Caribbean, and North and South America. Precludes additional credit for ENGL 2909 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 3003 [0.5 credit]
Literatures in Translation
A study of non-English literatures in translation with a special focus on cultural and historical contexts. Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3007 [0.5 credit]
Reading Poetry
This course is designed to enable students to develop skills in reading and writing about poetry. Readings will be chosen from a variety of authors, periods, and/or genres. Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3008 [0.5 credit]
Studies in Greek Literature
A study of an author or topic in Greek literature. Contents of this course vary from year to year. Also listed as CLCV 3701.
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.
ENGL 3201 [1.0 credit]  
European Literature  
Major movements and works from Dante’s Divine Comedy through Voltaire’s Candide. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.  
Also listed as HUMS 3200.  
Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program for Humanities Students.  
English students should have third year standing with a CGPA of 8.0 or higher.  
Lectures three hours a week.

ENGL 3202 [0.5 credit]  
Chaucer  
A study of Chaucer’s works including some attention to the Middle English language in which he wrote.  
Prerequisite(s): third-year standing or permission of the department.  
Lectures three hours a week.

ENGL 3204 [0.5 credit]  
Literary Representations of Childhood and Youth  
An examination of the ways in which childhood, children, and youth have been represented in creative literature (fiction, poetry, drama, and/or creative nonfiction).  
Also listed as CHST 3204.  
Prerequisite(s): third-year standing.  
Lecture three hours a week.

ENGL 3305 [0.5 credit]  
Shakespeare and the Stage  
Introduction to the study of early modern play-texts written by Shakespeare and/or his contemporaries.  
Precludes additional credit for ENGL 3304 (no longer offered).  
Prerequisite(s): third-year standing or permission of the department.  
Lectures three hours a week.

ENGL 3306 [0.5 credit]  
Shakespeare and Film  
A study of film adaptations of selected plays by Shakespeare.  
Prerequisite(s): third-year standing or permission of the department.  
Lectures three hours a week.

ENGL 3401 [0.5 credit]  
The Book in the Digital Age  
A multidisciplinary course focused on the social, economic and political dimensions of the book in its manuscript, print and digital forms.  
Also listed as DIGH 3001.  
Prerequisite(s): third-year standing, or permission of the English Department.  
Lecture three hours a week.

ENGL 3402 [0.5 credit]  
18th-Century Literature  
A detailed study of authors and movements of the period 1660 to 1780.  
Prerequisite(s): third-year standing or permission of the department.  
Lectures three hours a week.

ENGL 3414 [0.5 credit]  
Introduction to Professional Writing and Editing  
The fundamental skills of professional writing and editing, including writing for specific audiences, document design, revision strategies, copyediting.  
Also listed as ALDS 3414.  
Prerequisite(s): third-year standing or permission of the instructor.  
Seminars three hours a week.

ENGL 3500 [0.5 credit]  
Literatures and Cultures 1700-1900  
A study of the period between 1700 and 1900, with attention to cultural, historical, geographical, and literary contexts.  
Precludes additional credit for ENGL 3502 (no longer offered).  
Prerequisite(s): Third-year standing or permission of the department.  
Lectures three hours a week.

ENGL 3501 [0.5 credit]  
Literatures and Cultures 1900-Now  
A study of the period between 1900 and the present, with attention to cultural, historical, geographical, and literary contexts.  
Precludes additional credit for ENGL 3502 (no longer offered).  
Prerequisite(s): Third-year standing or permission of the department.  
Lectures three hours a week.

ENGL 3553 [0.5 credit]  
The 19th-Century Novel  
A study of the English novel in the 19th century.  
Precludes additional credit for ENGL 3503 (no longer offered).  
Prerequisite(s): third-year standing or permission of the department.  
Lectures three hours a week.

ENGL 3601 [0.5 credit]  
20th- and 21st-Century Poetry  
A study of 20th and 21st-century poetry in English. Topics and authors may vary.  
Prerequisite(s): third-year standing or permission of the department.  
Lectures three hours a week.
ENGL 3603 [0.5 credit]
20th- and 21st-century Fiction
A study of 20th- and 21st-century fiction in English. Topics and authors may vary.
Prerequisite(s): Third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3605 [0.5 credit]
Modern and Contemporary Literary Theory
Introduction to contemporary approaches to literary texts, such as formalist, structuralist, deconstructive, psychoanalytic, Marxist, historicist, and feminist. Topics may include: the nature and role of literature, of author and reader, of canons, ideology, gender, sexuality, and race. Precludes additional credit for ENGL 3002 (no longer offered).
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3608 [0.5 credit]
Topics in Theatre Management
A workshop taught by practitioners in the community that provides students with the knowledge and skills necessary to create, manage, and sustain theatre projects. Topics will vary but may include the development of children’s theatre or the operation of a festival or touring company. Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the department.
Workshop three hours a week.

ENGL 3609 [0.5 credit]
Drama: Contemporary Criticism
A study of dramatic texts and performance practices in contemporary professional theatre. Topics vary according to the season programs of professional theatre in Ottawa. Students will attend a number of productions, determined by the instructor. Field trip fees will apply. Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3702 [0.5 credit]
American Culture
A study of American writing in its cultural and historical contexts.
Precludes additional credit for ENGL 3703 (no longer offered).
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3801 [0.5 credit]
Canadian Poetry
A study of Canadian poetry in its social and political contexts.
Prerequisite(s): third-year standing or permission of the department.
Lecture three hours a week.
ENGL 3904 [0.5 credit]
Intermediate Drama Workshop
A course dealing with techniques of characterization, principles of ensemble performance, scene analysis for actors and directors, styles of performance.
Includes: Experiential Learning Activity
Precludes additional credit for ENGL 2001 (no longer offered).
Prerequisite(s): ENGL 2104 or permission of the Department.
Workshop three hours a week.

ENGL 3905 [0.5 credit]
Topics in Performance
A study of selected elements of performance. Topics will vary but may include such areas as the theory and practice of comic timing on stage or movement on stage space.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the department.
Lecture and workshop three hours a week.

ENGL 3906 [0.5 credit]
Writing Popular Fiction
An intermediate workshop in creative writing that focuses on the development of writing skills specific to the crafting of narratives in such genres as Speculative Fiction, Young Adult Fiction, and Historical Fiction. Permission to register requires the student to submit a writing sample.
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.
Workshop three hours a week.

ENGL 3908 [0.5 credit]
Research and Theory in Academic Writing
Study of contemporary research and theory (1970s to present) on academic writing in elementary, secondary and post-secondary school, with emphasis on writing in university. Consideration of what academic writing entails, how writing fosters learning, and how instruction can help students develop their writing abilities.
Includes: Experiential Learning Activity
Also listed as ALDS 3401.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ENGL 3909 [0.5 credit]
Research and Theory in Workplace Writing
Study of contemporary research and theory (1980s to present) in writing in workplace settings. Consideration of how writing is used in accomplishing work, how novices learn to write effectively, and what the implications are for pedagogy.
Includes: Experiential Learning Activity
Also listed as ALDS 3402.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ENGL 3910 [0.5 credit]
From Degree to Career
This experiential-learning course prepares students in English for their transition into the workplace. Project-based activities (including readings and research) and guest speakers will teach students to identify, develop, and apply the skills and knowledge gained from a degree in English studies.
Includes: Experiential Learning Activity
Prerequisite(s): Third-year standing or permission of the department.
Lectures and workshops three hours a week.

ENGL 3911 [0.5 credit]
Cultural Studies
This course explores cultural expression across diverse media, theorizing culture as a form of struggle that shapes material conditions, fuels knowledge production, and informs lived experience.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3915 [0.5 credit]
Special Topics in Writing
An intermediate workshop that involves regular creative writing assignments and practical criticism based on this work. Topics will vary. Permission to register requires the student to submit a writing sample. Submission instructions and yearly special topics can be found at carleton.ca/english/.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing, a 2000-level creative writing workshop, and permission of the instructor.
Workshop three hours a week.

ENGL 3916 [0.5 credit]
Spoken Word Poetry Workshop
This intermediate-level workshop-based course explores traditions of spoken word poetry while requiring students to create and perform their own spoken word poems.
Includes: Experiential Learning Activity
Also listed as AFRI 3916.
Prerequisite(s): third-year standing or a 2000-level writing workshop and permission of the instructor.
Workshops three hours a week.

ENGL 3920 [0.5 credit]
Literary Ecological Fieldwork
This interdisciplinary, experiential fieldwork course brings together literature, culture, and ecology studies. At least 50% of class periods will be devoted to short field work excursions in the Ottawa region. These excursions will be complemented by classroom discussion time. Field trip fees will apply.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the department.
Field work and lectures three hours a week.
ENGL 3930 [0.5 credit]
Topics in Decolonization and Migration II
An intermediate study of literature, culture, and research in the context of topics such as empire and decolonization, diaspora, migration and globalization, race, and ethnicity. Themes, authors, and geographical and temporal focus will vary.
Prerequisite(s): Third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3940 [0.5 credit]
Studies in Diaspora Lit.
A study of diaspora literatures and cultures.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3960 [0.5 credit]
Studies in Indigenous Literature
A study of Indigenous literatures and cultures.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3965 [0.5 credit]
Intro to Postcolonial Theory
A survey of major concepts and key figures in postcolonial theory.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3972 [0.5 credit]
Studies in Postcolonial Literature
A study of postcolonial literatures and cultures. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ENGL 4001 [0.5 credit]
Studies in Poetry
A study of a selected topic in poetry.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4003 [0.5 credit]
Studies in the Novel
A study of a selected topic in the novel.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4004 [0.5 credit]
Writing and Knowledge-Making in the Professions
The role of writing in constructing knowledge in the professions, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different professions shape their writing in distinctive ways and what implications this holds for theory, research, and practice.
Includes: Experiential Learning Activity
Also listed as ALDS 4404.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week.

ENGL 4005 [0.5 credit]
Studies in Literary Theory
Study of a selected topic in literary theory and criticism.
Precludes additional credit for ENGL 4000 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4105 [0.5 credit]
Old English
Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.
Also listed as LING 4805.
Precludes additional credit for ENGL 3102 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4115 [0.5 credit]
Culture and the Text
Topics will vary from year to year.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4125 [0.5 credit]
Digital Culture and the Text I
A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.
Also listed as DIGH 4002.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the Department.
Seminar or lecture three hours a week.

ENGL 4135 [0.5 credit]
Studies in Publishing
Topics will vary from year to year.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.
ENGL 4145 [0.5 credit]
Digital Culture and the Text II
A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.
Also listed as DIGH 4003.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the Department.
Seminar or lecture three hours a week.

ENGL 4155 [0.5 credit]
Studies in Digital Humanities
A study of current issues and debates in the Digital Humanities.
Also listed as DIGH 4001.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.
Seminar or lecture three hours a week.

ENGL 4208 [0.5 credit]
Studies in Medieval Literature
A study of a selected topic in Medieval literature; requires previous experience reading medieval English.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4301 [0.5 credit]
Studies in Renaissance Literature
A study of a selected topic in Renaissance literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4401 [0.5 credit]
Studies in 18th-Century Literature
A study of a selected topic in Restoration or 18th-century literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4404 [0.5 credit]
Digital Humanities Workshop
This workshop will provide students with the opportunity to complete an individual or collaborative capstone project in the Digital Humanities.
Includes: Experiential Learning Activity
Also listed as DIGH 4004.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.
Workshop three hours a week.

ENGL 4405 [0.5 credit]
Digital Humanities Practicum
Practical experience gained by working on projects under the supervision of the staff of a participating public- or private-sector institution or organization, including a final written assignment or equivalent project. A maximum of 1.0 practicum credit may be applied towards degree requirements.
Includes: Experiential Learning Activity
Also listed as DIGH 4005.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.
Practicum.

ENGL 4414 [0.5 credit]
Professional Writing I
The role of writing in government and NGOs. Consideration of various genres, practices and styles of government and NGO writing, including grant proposals, administrative reports, press releases, briefing notes, recommendation reports.
Includes: Experiential Learning Activity
Also listed as ALDS 4414.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week. May include a work placement.

ENGL 4415 [0.5 credit]
Professional Writing II
The role of writing in science-related fields and in the health professions. Consideration of various genres, practices and styles of scientific and health-related writing, including research reports, grant proposals, case reports, popularizations of science, press releases.
Includes: Experiential Learning Activity
Also listed as ALDS 4415.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week. May include a work placement.

ENGL 4500 [0.5 credit]
Studies in Romanticism
A study of a selected topic, 1770-1830. Precludes additional credit for ENGL 4407 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.
ENGL 4515 [0.5 credit]
Teaching Writing in School and the Workplace
Introduction to approaches for teaching writing in elementary and secondary school, in university, and in the workplace, with a focus on socio-cultural theories of language and learning. Discussion of applications of these approaches to classroom and workplace teaching. Includes: Experiential Learning Activity
Also listed as ALDS 4405.
Prerequisite(s): third-year standing, or permission of the instructor.
Seminar three hours a week.

ENGL 4550 [0.5 credit]
Studies in Victorian Literature
A study of a selected topic in 19th-century British literature, 1830-1900.
Precludes additional credit for ENGL 4501 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4600 [0.5 credit]
The Great Russian Novel
A study of masterpieces of the Russian tradition, to be selected from among works by writers such as Tolstoy, Dostoevsky, Gogol, Turgenev, Bely, Bulgakov, and Nabokov. All novels will be read in English translation.
Also listed as EURR 4103.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4601 [0.5 credit]
Studies in Contemporary Poetry
A comparative and transnational approach to 20th- and 21st-century poetry.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4605 [0.5 credit]
Theatre Production Seminar
This course offers students advanced engagement with the theory and application of theatrical crafts and includes participation in a writing, acting, or technical capacity on a class production.
Includes: Experiential Learning Activity
Prerequisite(s): ENGL 3904 or permission of the department.
Seminar three hours a week.

ENGL 4607 [0.5 credit]
Studies in 20th- and 21st-century Literature
A study of a selected topic in literature of the 20th and 21st century.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4609 [0.5 credit]
Global Stages and Theories
An advanced study of dramatic texts from transnational, postcolonial, or European contexts. This course will offer sustained attention to specific theatre traditions, theatrical practice, and interpretation of texts. Topics and points of emphasis vary from year to year.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4708 [0.5 credit]
Studies in American Literature I
A study of a selected topic in American literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4709 [0.5 credit]
Studies in American Literature II
A study of a selected topic in American literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4802 [0.5 credit]
Race, Ethnicity and Canadian Lit.
A study of Canadian literature that engages with notions of race and ethnicity.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4806 [0.5 credit]
Studies in Canadian Literature I
A study of a selected topic in Canadian literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4807 [0.5 credit]
Studies in Canadian Literature II
A study of a selected topic in Canadian literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4908 [1.0 credit]
Independent Study
Independent research and writing, under the supervision of English faculty, requiring an essay of approximately 10,000 words. A written proposal outlining the project must be submitted to the undergraduate supervisor by July 31. Not available to students in a Combined Honours program.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in English with a CGPA of 10.0 in English courses, and permission of the undergraduate supervisor.
ENGL 4909 [0.5 credit]
Writing and Knowledge-Making in the Disciplines
The role of writing in constructing knowledge in academic disciplines, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different disciplines shape their writing in distinctive ways and what implications this holds for pedagogy.
Includes: Experiential Learning Activity
Also listed as ALDS 4403.
Precludes additional credit for LALS 5406 (no longer offered) or ALDS 5602 (no longer offered) or LALS 5602 (no longer offered).
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ENGL 4910 [0.5 credit]
Independent Creative Writing Project
Independent creative writing, under the supervision of Departmental faculty, requiring the production of a poetry manuscript (10-15 poems), a one-act play, a 10,000-word novella, or two short stories. A written proposal outlining the project must be submitted to the faculty supervisor by July 31.
Includes: Experiential Learning Activity
Prerequisite(s): completion of required credits for the Creative Writing Concentration, fourth-year Honours standing in English with a CGPA OF 10.0 in English courses, and permission of the Undergraduate Supervisor in conjunction with the faculty supervisor.

ENGL 4915 [0.5 credit]
Advanced Writing Workshop
An advanced workshop involving regular assignments in creative writing and practical criticism based on this work. Topics will vary.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in English, a 3000-level creative writing workshop, or permission of the instructor. Permission to register in this course requires the student to submit a writing sample. Instructions on this process and on yearly special topics can be found at carleton.ca/english.
Workshop three hours a week.

ENGL 4947 [0.5 credit]
Issues in Diaspora Literature
A study of a selected topic in diaspora literature and culture.
Precludes additional credit for ENGL 4907 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4950 [0.5 credit]
Topics in Postcolonial and Diaspora Lit. and Theory
A study of a selected topic in postcolonial and/or diaspora literatures and theories. Themes, authors, and geographical and temporal focus will vary.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4960 [0.5 credit]
Indigenous Literatures I
A study of the literatures produced by Indigenous storytellers and writers, with a focus on the oral tradition and life writing.
Precludes additional credit for ENGL 4808 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4961 [0.5 credit]
Indigenous Literatures II
A study of the contemporary period of Indigenous literature, examining the historical and mythic influences on the literature.
Precludes additional credit for ENGL 4808 and ENGL 4809 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4975 [0.5 credit]
Issues in Postcolonial Theory
A study of a selected issue in postcolonial and/or diaspora theory.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4976 [0.5 credit]
Issues in Postcolonial Literature
A study of a selected topic in postcolonial literature and culture.
Precludes additional credit for ENGL 4906 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

Environmental and Climate Humanities (Minor)
This section presents the requirements for programs in:

- Minor in Environmental and Climate Humanities

Minor in Environmental and Climate Humanities (4.0 credits)
This minor is open to all undergraduate degree students.

Requirements:
1. 0.5 credit in: 0.5
<table>
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<tr>
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<th>Course Title</th>
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<td>Humans/Animals: the More-than-Human in Social Research</td>
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<td>ANTH 2510</td>
<td>Theories of Human Nature</td>
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<tr>
<td>ANTH 2850</td>
<td>Development and Underdevelopment</td>
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<tr>
<td>ANTH 3035</td>
<td>Science, Culture and Society: Social Studies of Science</td>
</tr>
<tr>
<td>ANTH 3355</td>
<td>Anthropology and the Environment</td>
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<tr>
<td>ANTH 4006</td>
<td>Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology</td>
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<td>ANTH 4036</td>
<td>Science and Technology Studies: Selected Topics</td>
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<td>ANTH 4355</td>
<td>Anthropology of Natural Resources</td>
</tr>
<tr>
<td>ANTH 4560</td>
<td>Economic Anthropology</td>
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<td>ANTH 4610</td>
<td>Advanced Studies in Indigenous Peoples</td>
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<td>CDNS 3610</td>
<td>The Canadian Political Economy Tradition</td>
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<td>CDNS 4400</td>
<td>Cultural Landscape and Cultural Identity in Canada</td>
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<td>CDNS 4403</td>
<td>Heritage Conservation and Sustainability</td>
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<td>Communication and Science</td>
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<td>COMS 4311</td>
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<td>Climate Change and the Humanities</td>
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<td>ENGL 2730</td>
<td>Culture and Climate Change</td>
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<td>ENGL 3920</td>
<td>Literary Ecological Fieldwork</td>
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<td>FILM 2204</td>
<td>Indigenous Cinema and Media</td>
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<td>HIST 2311</td>
<td>Environmental History of Canada</td>
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<td>HIST 2913</td>
<td>History of Oil</td>
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<td>HIST 3310</td>
<td>Animals in History</td>
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<td>HUMR 3503</td>
<td>Global Environmental Justice</td>
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<tr>
<td>HUMR 3504</td>
<td>Public Health and Human Rights</td>
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<tr>
<td>HUMR 4907</td>
<td>Special Topic in Human Rights</td>
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<tr>
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<td>Indigenous Ecological Ways of Knowing</td>
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<tr>
<td>INDG 2020</td>
<td>Decolonizing Gender, Sex, and Sexuality</td>
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<td>INDG 3015</td>
<td>Indigenous Ecological Ways of Knowing and the Academy</td>
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<td>Land as a Relation</td>
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<td>PHIL 2380</td>
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<td>PHIL 3380</td>
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<td>RELI 2811</td>
<td>Religions and the Environment</td>
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<tr>
<td>SOCI 2702</td>
<td>Power and Social Change</td>
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<tr>
<td>SOCI 3019</td>
<td>Sociology of International Migration</td>
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<td>SOCI 3035</td>
<td>Science, Culture and Society: Social Studies of Science</td>
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<td>SOCI 3038</td>
<td>Studies in Urban Sociology</td>
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<td>SOCI 3430</td>
<td>Studies in Collective Action and Social Movements</td>
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<td>SOCI 4039</td>
<td>Women in Contemporary Middle East Societies</td>
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<td>SXST 4105</td>
<td>Queer Ecologies</td>
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**Science-inflected Courses:**

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<td>Natural History</td>
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<td>ERTH 1006</td>
<td>Exploring Planet Earth</td>
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<td>ERTH 2402</td>
<td>Climate Change: An Earth Sciences Perspective</td>
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<td>ERTH 4303</td>
<td>Resources of a Finite Earth</td>
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<td>GEOG 2013</td>
<td>Weather and Water</td>
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<td>GEOG 2014</td>
<td>The Earth's Surface</td>
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<td>GEOG 2020</td>
<td>Ecosystems of Canada</td>
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<td>GEOG 3105</td>
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<td>ISCI 2002</td>
<td>Human Impacts on the Environment</td>
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<td>LAWS 4800</td>
<td>Environmental Law and Policy</td>
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<td>LAWS 4801</td>
<td>Environmental Policy Analysis</td>
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<td>PSCI 1500</td>
<td>Technology, Nature, Power</td>
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<td>PSCI 1501</td>
<td>Politics of Migration</td>
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<tr>
<td>PSCI 3608</td>
<td>Migration Governance</td>
</tr>
<tr>
<td>PSCI 3609</td>
<td>Global Politics of Food</td>
</tr>
<tr>
<td>PSCI 3801</td>
<td>Environmental Politics</td>
</tr>
<tr>
<td>PSCI 4610</td>
<td>Politics of Migration Management</td>
</tr>
<tr>
<td>PSCI 4807</td>
<td>Politics of Citizenship and Migration</td>
</tr>
<tr>
<td>PSCI 4808</td>
<td>Global Environmental Politics</td>
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<tr>
<td>PSCI 4817</td>
<td>International Politics of Forced Migration</td>
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**Humanities-inflected Courses:**

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<th>Course Code</th>
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<tr>
<td>BINF 1006</td>
<td>Introduction to the Environmental and Climate Humanities</td>
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<td>BINF 2006</td>
<td>Environmental Ethics</td>
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<td>BINF 3006</td>
<td>Environmental Law and Policy</td>
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**Social Science-inflected Courses:**

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<tr>
<td>ECON 3803</td>
<td>The Economics of Natural Resources</td>
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<td>ECON 3804</td>
<td>Environmental Economics</td>
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<td>ENST 1000</td>
<td>Introduction to Environmental Studies</td>
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<td>ENST 1020</td>
<td>People, Places and Environments</td>
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<td>ENST 2001</td>
<td>Sustainable Futures: Environmental Challenges and Solutions</td>
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<tr>
<td>ENST 2500</td>
<td>Climate Change: Social Science Perspectives</td>
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<td>ECON 3805</td>
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<td>GEOG 2200</td>
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<td>Geography Behind the Headlines</td>
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<td>GEOG 3022</td>
<td>Environmental and Natural Resources</td>
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<td>GEOG 3030</td>
<td>Sustainable Futures: Environmental Challenges and Solutions</td>
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<td>GEOG 3501</td>
<td>Geographies of the Canadian North</td>
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<td>GEOG 4004</td>
<td>Environmental Impact Assessment</td>
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<td>GEOG 4022</td>
<td>Seminar in People, Resources and Environmental Change</td>
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<td>GEOG 4024</td>
<td>Seminar in Globalization</td>
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<td>LAWS 3800</td>
<td>Law of Environmental Quality</td>
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<td>LAWS 4800</td>
<td>Environment and Social Justice</td>
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<tr>
<td>PSCI 1500</td>
<td>Technology, Nature, Power</td>
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<td>PSCI 1501</td>
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<td>PSCI 4817</td>
<td>International Politics of Forced Migration</td>
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</table>
Environmental Science

This section presents the requirements for programs in:

- Environmental Science B.Sc. Honours
- Environmental Science with Concentration in Chemistry B.Sc. Honours
- Environmental Science with Concentration in Earth Sciences B.Sc. Honours
- Environmental Science with Concentration in Ecology, Biodiversity and Conservation B.Sc. Honours
- Environmental Science with Concentration in Geomatics B.Sc. Honours
- Environmental Science B.Sc. Major

Program Requirements

Course Categories

The Environmental Science program description makes use of the following course categories:

- Approved Courses Outside the Faculties of Science and Engineering and Design (approved by the Environmental Science Institute)
- Approved Environmental Science Electives (approved by the Environmental Science Institute)
- Free Electives (see Academic Regulations for the B.Sc.)

Approved Science for Environmental Science

Courses approved by the Institute of Environmental Science include the following that comply with the Academic Regulations for the B.Sc.:

- Biochemistry
- Biology
- Chemistry
- Computer Science
- Earth Science
- Environmental Science
- Geography
- Geomatics
- Mathematics and Statistics
- Physics

Prohibited and Restricted Courses

Technology, Society, Environment Studies (TSES) courses are not accepted as Science Continuation courses in these programs, but may be used as Approved Environmental Science Specialization courses or as free electives.

Environmental Science

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)

1. 3.0 credits in:

<table>
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<tr>
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<th>Course Title</th>
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<tbody>
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<td>ENSC 1500</td>
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<tr>
<td>ENSC 2000</td>
<td>Environmental Science Field Methods</td>
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<tr>
<td>ENSC 2001</td>
<td>Earth Resources and Natural Hazards: Environmental Impacts</td>
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<td>ENSC 2002</td>
<td>Methods and Analysis in Environmental Science</td>
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<tr>
<td>ENSC 3000</td>
<td>Environmental Science and Management: Theory and Practice</td>
<td>0.5</td>
</tr>
<tr>
<td>ENSC 3509</td>
<td>Group Research in Environmental Science</td>
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2. 1.0 credit in:

<table>
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<tr>
<td>ENSC 4906</td>
<td>Honours Research Project</td>
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</tr>
<tr>
<td>ENSC 4901</td>
<td>Directed Projects and 0.5 credit from Science Faculty Electives or Science Continuation Courses at the 4000-level</td>
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3. 2.0 credits in:

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<td>Ecology</td>
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<tr>
<td>CHEM 2302</td>
<td>Analytical Chemistry I</td>
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</tr>
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<td>CHEM 2800</td>
<td>Foundations for Environmental Chemistry</td>
<td>0.5</td>
</tr>
<tr>
<td>GEOG 2013</td>
<td>Weather and Water</td>
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4. 1.0 credit from:

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<td>GEOG 3103</td>
<td>Watershed Hydrology</td>
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</tr>
<tr>
<td>GEOG 3104</td>
<td>Principles of Biogeography</td>
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<tr>
<td>GEOG 3105</td>
<td>Climate and Atmospheric Change</td>
<td>0.5</td>
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<td>GEOG 3106</td>
<td>Aquatic Science and Management</td>
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<td>GEOG 3108</td>
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5. 1.0 credit from:

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<td>ERTH 2403</td>
<td>Introduction to Oceanography</td>
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<td>ERTH 3205</td>
<td>Physical Hydrogeology</td>
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6. 0.5 credit from:

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<td>Cell Biology and Biochemistry</td>
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<td>BIOL 2107</td>
<td>Fundamentals of Genetics</td>
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</table>

7. 1.0 credit from Science Faculty Electives or Science Continuation Courses at the 4000 level

8. 2.0 credits from Science Faculty Electives or Science Continuation Courses

B. Credits Not Included in the Major CGPA (8.5 credits)

9. 1.0 credit in:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1007</td>
<td>Elementary Calculus I</td>
<td>0.5</td>
</tr>
<tr>
<td>STAT 2507</td>
<td>Introduction to Statistical Modeling I</td>
<td>0.5</td>
</tr>
</tbody>
</table>

10. 2.5 credits in:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1103</td>
<td>Foundations of Biology I</td>
<td>0.5</td>
</tr>
<tr>
<td>BIOL 1104</td>
<td>Foundations of Biology II</td>
<td>0.5</td>
</tr>
<tr>
<td>CHEM 1001</td>
<td>General Chemistry I</td>
<td>0.5</td>
</tr>
<tr>
<td>CHEM 1002</td>
<td>General Chemistry II</td>
<td>0.5</td>
</tr>
<tr>
<td>ERTH 1006</td>
<td>Exploring Planet Earth</td>
<td>0.5</td>
</tr>
<tr>
<td>12. <strong>1.5 credits in</strong> approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>13. <strong>3.0 credits in</strong> free electives.</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>20.0</strong></td>
<td></td>
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</table>

### Environmental Science with Concentration in Chemistry

**B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (13 credits)**

<table>
<thead>
<tr>
<th>1. <strong>3.0 credits in:</strong></th>
<th>3.0</th>
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</thead>
<tbody>
<tr>
<td>ENSC 1500 [0.5]</td>
<td>Environmental Science Seminar</td>
</tr>
<tr>
<td>ENSC 2000 [0.5]</td>
<td>Environmental Science Field Methods</td>
</tr>
<tr>
<td>ENSC 2001 [0.5]</td>
<td>Earth Resources and Natural Hazards: Environmental Impacts</td>
</tr>
<tr>
<td>ENSC 2002 [0.5]</td>
<td>Methods and Analysis in Environmental Science</td>
</tr>
<tr>
<td>ENSC 3000 [0.5]</td>
<td>Environmental Science and Management: Theory and Practice</td>
</tr>
<tr>
<td>ENSC 3509 [0.5]</td>
<td>Group Research in Environmental Science</td>
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</table>

<table>
<thead>
<tr>
<th>2. <strong>1.0 credit in:</strong></th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSC 4906 [1.0]</td>
<td>Honours Research Project</td>
</tr>
</tbody>
</table>

Or

<table>
<thead>
<tr>
<th>2. <strong>1.0 credit from:</strong></th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSC 4901 [0.5] and [0.5] credit Science faculty elective or science continuation at the 4000 level</td>
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<table>
<thead>
<tr>
<th>3. <strong>2.0 credit in:</strong></th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
<tr>
<td>GEOG 2013 [0.5]</td>
<td>Weather and Water</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. <strong>1.0 credit from:</strong></th>
<th>1.0</th>
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</thead>
<tbody>
<tr>
<td>GEOG 3102 [0.5]</td>
<td>Geomorphology</td>
</tr>
<tr>
<td>GEOG 3103 [0.5]</td>
<td>Watershed Hydrology</td>
</tr>
<tr>
<td>GEOG 3104 [0.5]</td>
<td>Principles of Biogeography</td>
</tr>
<tr>
<td>GEOG 3105 [0.5]</td>
<td>Climate and Atmospheric Change</td>
</tr>
<tr>
<td>GEOG 3106 [0.5]</td>
<td>Aquatic Science and Management</td>
</tr>
<tr>
<td>GEOG 3108 [0.5]</td>
<td>Soil Properties</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. <strong>0.5 credit from:</strong></th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 2402 [0.5]</td>
<td>Climate Change: An Earth Sciences Perspective</td>
</tr>
<tr>
<td>ERTH 2403 [0.5]</td>
<td>Introduction to Oceanography</td>
</tr>
<tr>
<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. <strong>0.5 credit from:</strong></th>
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</thead>
<tbody>
<tr>
<td>BIOL 2107 [0.5]</td>
<td>Fundamentals of Genetics</td>
</tr>
<tr>
<td>BIOL 2201 [0.5]</td>
<td>Cell Biology and Biochemistry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. <strong>3.0 credits in:</strong></th>
<th>3.0</th>
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</thead>
<tbody>
<tr>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2501 [0.5]</td>
<td>Introduction to Inorganic and Bioinorganic Chemistry</td>
</tr>
<tr>
<td>CHEM 3305 [0.5]</td>
<td>Advanced Analytical Chemistry Laboratory</td>
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<table>
<thead>
<tr>
<th>8. <strong>1.5 credits in:</strong></th>
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<tbody>
<tr>
<td>CHEM 3201 [0.5]</td>
<td>Advanced Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 3202 [0.5]</td>
<td>Advanced Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 3205 [0.5]</td>
<td>Experimental Organic Chemistry</td>
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</tbody>
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Or

<table>
<thead>
<tr>
<th>8. <strong>Inorganic focus:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>i) 1.0 credit in:</td>
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</tr>
<tr>
<td>CHEM 3503 [0.5]</td>
<td>Inorganic Chemistry I</td>
</tr>
<tr>
<td>CHEM 3504 [0.5]</td>
<td>Inorganic Chemistry II</td>
</tr>
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ii) 0.5 credit in CHEM at the 4000-level

<table>
<thead>
<tr>
<th>9. <strong>0.5 credit in:</strong></th>
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<tbody>
<tr>
<td>CHEM 4800 [0.5]</td>
<td>Atmospheric Chemistry</td>
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**B. Credits not included in the Major CGPA (7.0 credits)**

<table>
<thead>
<tr>
<th>10. <strong>1.5 credit in:</strong></th>
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<tbody>
<tr>
<td>MATH 1007 [0.5]</td>
<td>Elementary Calculus I</td>
</tr>
<tr>
<td>MATH 1107 [0.5]</td>
<td>Linear Algebra I</td>
</tr>
<tr>
<td>STAT 2507 [0.5]</td>
<td>Introduction to Statistical Modeling I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. <strong>2.5 credits in:</strong></th>
<th>2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12. <strong>0.5 credit in:</strong></th>
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</tr>
</thead>
<tbody>
<tr>
<td>PHIL 2380 [0.5]</td>
<td>Introduction to Environmental Ethics</td>
</tr>
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</table>

| 13. **1.5 credits in** approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000) | 1.5 |
| 14. **1.0 credit in** free elective | 1.0 |

**Total Credits** | **20.0** |

### Environmental Science with Concentration in Earth Sciences

**B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (11.5 credits)**

<table>
<thead>
<tr>
<th>1. <strong>3.0 credits from:</strong></th>
<th>3.0</th>
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</thead>
<tbody>
<tr>
<td>ENSC 1500 [0.5]</td>
<td>Environmental Science Seminar</td>
</tr>
<tr>
<td>ENSC 2000 [0.5]</td>
<td>Environmental Science Field Methods</td>
</tr>
<tr>
<td>ENSC 2001 [0.5]</td>
<td>Earth Resources and Natural Hazards: Environmental Impacts</td>
</tr>
<tr>
<td>ENSC 2002 [0.5]</td>
<td>Methods and Analysis in Environmental Science</td>
</tr>
<tr>
<td>ENSC 3000 [0.5]</td>
<td>Environmental Science and Management: Theory and Practice</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. <strong>1.0 credit in:</strong></th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSC 4906 [1.0]</td>
<td>Honours Research Project</td>
</tr>
</tbody>
</table>

Or

<table>
<thead>
<tr>
<th>2. <strong>1.0 credit from:</strong></th>
<th>1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSC 4901 [0.5] and [0.5] credit Science faculty elective or science continuation at the 4000 level</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>3. <strong>2.0 credits in:</strong></th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
<tr>
<td>GEOG 2013 [0.5]</td>
<td>Weather and Water</td>
</tr>
<tr>
<td>GEOG 3108 [0.5]</td>
<td>Soil Properties</td>
</tr>
<tr>
<td><strong>4. 0 credits in:</strong></td>
<td><strong>4.0</strong></td>
</tr>
<tr>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2104 [0.5]</td>
<td>Igneous Systems, Geochemistry and Processes</td>
</tr>
<tr>
<td>ERTH 2314 [0.5]</td>
<td>Sedimentation and Stratigraphy</td>
</tr>
<tr>
<td>ERTH 2406 [0.5]</td>
<td>Geology and Map Interpretation</td>
</tr>
<tr>
<td>ERTH 3003 [0.5]</td>
<td>Geochemistry and Geochronology</td>
</tr>
<tr>
<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
</tr>
<tr>
<td>ERTH 3405 [0.5]</td>
<td>Geophysical Methods</td>
</tr>
<tr>
<td>ERTH 3806 [0.5]</td>
<td>Structural Geology</td>
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<td><strong>5. 0.5 credit from:</strong></td>
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<tr>
<td>ERTH 3203 [0.5]</td>
<td>Sedimentology</td>
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<tr>
<td>ERTH 3206 [0.5]</td>
<td>Sedimentary Depositional Systems</td>
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<tr>
<td><strong>6. 1.0 credit in ERTH at the 4000-level</strong></td>
<td><strong>1.0</strong></td>
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<tr>
<td><strong>B. Credits Not Included in the Major CGPA (8.5 credits)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>7. 1.5 credits in:</strong></td>
<td><strong>1.5</strong></td>
</tr>
<tr>
<td>MATH 1007 [0.5]</td>
<td>Elementary Calculus I</td>
</tr>
<tr>
<td>MATH 1107 [0.5]</td>
<td>Linear Algebra I</td>
</tr>
<tr>
<td>STAT 2507 [0.5]</td>
<td>Introduction to Statistical Modeling I</td>
</tr>
<tr>
<td><strong>8. 3.0 credits in:</strong></td>
<td><strong>3.0</strong></td>
</tr>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td><strong>9. 1.5 credits from:</strong></td>
<td><strong>1.5</strong></td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>ERTH 2402 [0.5]</td>
<td>Climate Change: An Earth Sciences Perspective</td>
</tr>
<tr>
<td>ERTH 2403 [0.5]</td>
<td>Introduction to Oceanography</td>
</tr>
<tr>
<td>ERTH 2802 [0.5]</td>
<td>Field Geology I</td>
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<td>ERTH 2312 [0.5]</td>
<td>Paleontology</td>
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<tr>
<td>ERTH 3203 [0.5]</td>
<td>Sedimentology</td>
</tr>
<tr>
<td>ERTH 3204 [0.5]</td>
<td>Mineral Deposits</td>
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<td>ERTH 3206 [0.5]</td>
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<td>ERTH 3207 [0.5]</td>
<td>Metamorphic Petrology and Processes</td>
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<td>ENSC 3906 [0.5]</td>
<td>Project Planning for Environmental Research</td>
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<td>GEOG 3102 [0.5]</td>
<td>Geomorphology</td>
</tr>
<tr>
<td>GEOG 3103 [0.5]</td>
<td>Watershed Hydrology</td>
</tr>
<tr>
<td>GEOG 3104 [0.5]</td>
<td>Principles of Biogeography</td>
</tr>
<tr>
<td>GEOG 3105 [0.5]</td>
<td>Climate and Atmospheric Change</td>
</tr>
<tr>
<td>GEOG 3106 [0.5]</td>
<td>Aquatic Science and Management</td>
</tr>
<tr>
<td><strong>10. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000), including:</strong></td>
<td><strong>1.5</strong></td>
</tr>
<tr>
<td>PHIL 2380 [0.5]</td>
<td>Introduction to Environmental Ethics</td>
</tr>
<tr>
<td><strong>11. 1.0 credit in:</strong></td>
<td><strong>1.0</strong></td>
</tr>
<tr>
<td>GEOM 1004 [0.5]</td>
<td>Maps, Satellites and the Geospatial Revolution</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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</table>

### Environmental Science with Concentration in Ecology, Biodiversity and Conservation

**B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (12.5 credits)**

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<td>Environmental Science Seminar</td>
</tr>
<tr>
<td>ENSC 2000 [0.5]</td>
<td>Environmental Science Field Methods</td>
</tr>
<tr>
<td>ENSC 2001 [0.5]</td>
<td>Earth Resources and Natural Hazards: Environmental Impacts</td>
</tr>
<tr>
<td>ENSC 2002 [0.5]</td>
<td>Methods and Analysis in Environmental Science</td>
</tr>
<tr>
<td>ENSC 3000 [0.5]</td>
<td>Environmental Science and Management: Theory and Practice</td>
</tr>
<tr>
<td>ENSC 3509 [0.5]</td>
<td>Group Research in Environmental Science</td>
</tr>
</tbody>
</table>

**B. Credits Not Included in the Major CGPA (8.5 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. 1.0 credit in:</strong></td>
<td><strong>1.0</strong></td>
</tr>
<tr>
<td>ENSC 4906 [1.0]</td>
<td>Honours Research Project</td>
</tr>
<tr>
<td>Or</td>
<td></td>
</tr>
<tr>
<td>ENSC 4901 [0.5] and [0.5] credit Science faculty elective or science continuation at the 4000 level</td>
<td></td>
</tr>
</tbody>
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**C. 2.0 credit in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
<tr>
<td>GEOG 2013 [0.5]</td>
<td>Weather and Water</td>
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**D. 1.0 credit from:**

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<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSG 3102 [0.5]</td>
<td>Geomorphology</td>
</tr>
<tr>
<td>ENSG 3103 [0.5]</td>
<td>Watershed Hydrology</td>
</tr>
<tr>
<td>ENSG 3104 [0.5]</td>
<td>Principles of Biogeography</td>
</tr>
<tr>
<td>ENSG 3105 [0.5]</td>
<td>Climate and Atmospheric Change</td>
</tr>
<tr>
<td>ENSG 3106 [0.5]</td>
<td>Aquatic Science and Management</td>
</tr>
<tr>
<td>ENSG 3108 [0.5]</td>
<td>Soil Properties</td>
</tr>
</tbody>
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**E. 1.0 credit from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 2402 [0.5]</td>
<td>Climate Change: An Earth Sciences Perspective</td>
</tr>
<tr>
<td>ERTH 2403 [0.5]</td>
<td>Introduction to Oceanography</td>
</tr>
<tr>
<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
</tr>
</tbody>
</table>

**F. 0.5 credit from:**

<table>
<thead>
<tr>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>Science faculty elective or science continuation at the 4000 level</td>
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</tr>
</tbody>
</table>

**G. 4.0 credits in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2201 [0.5]</td>
<td>Cell Biology and Biochemistry</td>
</tr>
<tr>
<td><strong>b. 0.5 credit from:</strong></td>
<td><strong>0.5</strong></td>
</tr>
<tr>
<td>BIOL 2303 [0.5]</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIOL 3004 [0.5]</td>
<td>Insect Diversity</td>
</tr>
<tr>
<td>BIOL 3102 [0.5]</td>
<td>Mycology</td>
</tr>
<tr>
<td>BIOL 3205 [0.5]</td>
<td>Plant Biochemistry and Physiology</td>
</tr>
<tr>
<td><strong>c. 2.0 credits in a focus:</strong></td>
<td><strong>2.0</strong></td>
</tr>
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</table>

**Ecology focus:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>BIOL 3604 [0.5]</td>
<td>Statistics for Biologists</td>
</tr>
</tbody>
</table>
B.Sc. Honours (20.0 credits)

Geomatics

Environmental Science with Concentration in

1. 1.0 credit in:
   - BIOL 3601 [0.5] Ecosystems and Environmental Change
   - BIOL 3602 [0.5] Conservation Biology
   - BIOL 3605 [0.5] Field Course I
   - BIOL 3606 [0.5] Field Course II

iii) 0.5 credit BIOL at the 4000-level

or

Microbiology/genetics focus:

i) 1.0 credit from:
   - BIOL 3104 [0.5] Molecular Genetics
   - BIOL 4103 [0.5] Population Genetics

ii) 0.5 credit from:
   - BIOL 2303 [0.5] Microbiology
   - BIOL 3102 [0.5] Mycology
   - BIOL 3303 [0.5] Experimental Microbiology

iii) 0.5 credit BIOL at the 4000-level

B. Credits Not Included in the Major CGPA (7.5 credits)

8. 1.0 credit in:
   - MATH 1007 [0.5] Elementary Calculus I
   - STAT 2507 [0.5] Introduction to Statistical Modeling I

9. 2.5 credits in:
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - ERTH 1006 [0.5] Exploring Planet Earth

10. 0.5 credit in:
    - PHIL 2380 [0.5] Introduction to Environmental Ethics

11. 0.5 credit from:
    - BIOL 2107 [0.5] Fundamentals of Genetics

12. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)

13. 1.5 credit in free electives.

Total Credits 20.0

Environmental Science with Concentration in Geomatics

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)

1. 3.0 credits in:
   - ENSC 1500 [0.5] Environmental Science Seminar
   - ENSC 2000 [0.5] Environmental Science Field Methods
   - ENSC 2001 [0.5] Earth Resources and Natural Hazards: Environmental Impacts
   - ENSC 2002 [0.5] Methods and Analysis in Environmental Science
   - ENSC 3000 [0.5] Environmental Science and Management: Theory and Practice
   - ENSC 3509 [0.5] Group Research in Environmental Science

2. 1.0 credit in:
   - ENSC 4906 [1.0] Honours Research Project
     or
   - ENSC 4901 [0.5] Directed Projects

or

   - GEOM 4005 [0.5] Directed Studies in Geomatics
     and 0.5 credit 4000-level Approved Science for Environmental Science

3. 2.0 credit in:
   - BIOL 2600 [0.5] Ecology
   - CHEM 2302 [0.5] Analytical Chemistry I
   - CHEM 2800 [0.5] Foundations for Environmental Chemistry
   - GEOG 2013 [0.5] Weather and Water

4. 1.0 credit from:
   - ENSC 3102 [0.5] Geomorphology
   - ENSC 3103 [0.5] Watershed Hydrology
   - ENSC 3104 [0.5] Principles of Biogeography
   - ENSC 3105 [0.5] Climate and Atmospheric Change
   - ENSC 3106 [0.5] Aquatic Science and Management
   - ENSC 3108 [0.5] Soil Properties

5. 1.0 credit from:
   - ERTH 2402 [0.5] Climate Change: An Earth Sciences Perspective
   - ERTH 2403 [0.5] Introduction to Oceanography
   - ERTH 3205 [0.5] Physical Hydrogeology

6. 3.5 credits in:
   - GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution
   - GEOM 2005 [0.5] Introduction to Geospatial Programming
   - GEOM 2007 [0.5] Points, Lines and Polygons
   - GEOM 2008 [0.5] Pixels and Grids
   - GEOM 3002 [0.5] Introduction to Remote Sensing
   - GEOM 3005 [0.5] Geospatial Analysis
   - GEOM 3003 [0.5] Quantitative Geography

7. 1.5 credits from:
   - GEOM 4001 [0.5] Special Topics in Geomatics
   - GEOM 4003 [0.5] Remote Sensing of the Environment
   - GEOM 4008 [0.5] Advanced Topics in Geographic Information Systems
   - GEOM 4009 [0.5] Applications in Geographic Information Systems

B. Credits not included in the Major CGPA (7.0 credits)

8. 1.5 credit in:
   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1107 [0.5] Linear Algebra I
   - STAT 2507 [0.5] Introduction to Statistical Modeling I
   - or GEOG 2006 [0.5] Introduction to Quantitative Research

9. 2.5 credits in:
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - ERTH 1006 [0.5] Exploring Planet Earth

10. 0.5 credit in:
    - PHIL 2380 [0.5] Introduction to Environmental Ethics

11. 0.5 credit from:
    - BIOL 2107 [0.5] Fundamentals of Genetics

12. 0.5 credit from:
    - BIOL 2201 [0.5] Cell Biology and Biochemistry
### A. Credits Included in the Major CGPA (10.0 credits)

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<td>Earth Resources and Natural Hazards: Environmental Impacts</td>
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<td></td>
<td>ENSC 2002 [0.5]</td>
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<td></td>
<td>Methods and Analysis in Environmental Science</td>
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<td></td>
<td>ENSC 3000 [0.5]</td>
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<td></td>
<td>Environmental Science and Management: Theory and Practice</td>
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<td>CHEM 2800 [0.5]</td>
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<td>Foundations for Environmental Chemistry</td>
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<td>CHEM 2302 [0.5]</td>
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<tr>
<td></td>
<td>GEOG 3103 [0.5]</td>
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<tr>
<td></td>
<td>Watershed Hydrology</td>
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<tr>
<td></td>
<td>GEOG 3104 [0.5]</td>
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<tr>
<td></td>
<td>Principles of Biogeography</td>
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<td></td>
<td>GEOG 3105 [0.5]</td>
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<td>Climate and Atmospheric Change</td>
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<td>GEOG 3106 [0.5]</td>
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<td>Aquatic Science and Management</td>
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<td>Climate Change: An Earth Sciences Perspective</td>
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<td></td>
<td>ERTH 2403 [0.5]</td>
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<tr>
<td></td>
<td>Introduction to Oceanography</td>
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<td></td>
<td>ERTH 3205 [0.5]</td>
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<tr>
<td></td>
<td>Physical Hydrogeology</td>
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<tr>
<td></td>
<td>Fundamentals of Genetics</td>
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<tr>
<td></td>
<td>BIOL 2201 [0.5]</td>
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<tr>
<td></td>
<td>Cell Biology and Biochemistry</td>
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<th>1.0 credits from Science faculty electives or science continuation at the 4000 level</th>
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<thead>
<tr>
<th>7.</th>
<th>2.0 credits from Science faculty electives or science continuation courses</th>
<th>2.0</th>
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<tbody>
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### B. Credits Not Included in the Major CGPA (10.0 credits)

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<th>8.</th>
<th>1.0 credit in:</th>
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<td></td>
<td>MATH 1007 [0.5]</td>
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<td>STAT 2507 [0.5]</td>
<td>Introduction to Statistical Modeling I</td>
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<th>9.</th>
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<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td></td>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
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<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
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<td></td>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td></td>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>10.</th>
<th>0.5 credit in:</th>
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<tbody>
<tr>
<td></td>
<td>PHIL 2380 [0.5]</td>
<td>Introduction to Environmental Ethics</td>
</tr>
</tbody>
</table>

### Environmental Science B.Sc. Major (20.0 credits)

**Environmental Science**

**B.Sc. Major (20.0 credits)**

#### A. Credits Included in the Major CGPA (10.0 credits)

1. 2.5 credits in:
   - ENSC 1500 [0.5] Environmental Science Seminar
   - ENSC 2000 [0.5] Environmental Science Field Methods
   - ENSC 2001 [0.5] Earth Resources and Natural Hazards: Environmental Impacts
   - ENSC 2002 [0.5] Methods and Analysis in Environmental Science
   - ENSC 3000 [0.5] Environmental Science and Management: Theory and Practice

2. 2.0 credit in:
   - BIOL 2600 [0.5] Ecology
   - CHEM 2800 [0.5] Foundations for Environmental Chemistry
   - CHEM 2302 [0.5] Analytical Chemistry I
   - GEOG 2013 [0.5] Weather and Water

3. 1.0 credit from:
   - GEOG 3102 [0.5] Geomorphology
   - GEOG 3103 [0.5] Watershed Hydrology
   - GEOG 3104 [0.5] Principles of Biogeography
   - GEOG 3105 [0.5] Climate and Atmospheric Change
   - GEOG 3106 [0.5] Aquatic Science and Management
   - GEOG 3108 [0.5] Soil Properties

4. 1.0 credit from:
   - ERTH 2402 [0.5] Climate Change: An Earth Sciences Perspective
   - ERTH 2403 [0.5] Introduction to Oceanography
   - ERTH 3205 [0.5] Physical Hydrogeology

5. 0.5 credit from:
   - BIOL 2107 [0.5] Fundamentals of Genetics
   - BIOL 2201 [0.5] Cell Biology and Biochemistry

6. 1.0 credits from Science faculty electives or science continuation at the 4000 level

7. 2.0 credits from Science faculty electives or science continuation courses

#### B. Credits Not Included in the Major CGPA (10.0 credits)

8. 1.0 credit in:
   - MATH 1007 [0.5] Elementary Calculus I
   - STAT 2507 [0.5] Introduction to Statistical Modeling I

9. 2.5 credits in:
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - ERTH 1006 [0.5] Exploring Planet Earth

10. 0.5 credit in:
    - PHIL 2380 [0.5] Introduction to Environmental Ethics

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**B.Sc. Regulations**

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

### Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors**

2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.

2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

### Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.
Change of Program within the B.Sc. Degree
Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement
Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Biochemistry</th>
<th>Biology</th>
<th>Chemistry</th>
<th>Earth Sciences</th>
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<tr>
<td>BIOC 2200 [0.5]</td>
<td>BIOL 1103 [0.5]</td>
<td>CHEM 1001 [0.5]</td>
<td>CHEM 2800 [0.5]</td>
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<td>BIOC 4001 [0.5]</td>
<td>BIOL 1104 [0.5]</td>
<td>CHEM 1002 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
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<td>BIOC 4201 [0.5]</td>
<td>BIOL 2001 [0.5]</td>
<td>CHEM 1005 [0.5]</td>
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<td>BIOL 2002 [0.5]</td>
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<td>CHEM 2800 [0.5]</td>
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Course Categories for B.Sc. Programs

Science Geography Courses

<table>
<thead>
<tr>
<th>GEOG 1010 [0.5]</th>
<th>Global Environmental Systems</th>
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<td>GEOG 2006 [0.5]</td>
<td>Introduction to Quantitative Research</td>
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Geography

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<th>GEOG 1010 [0.5]</th>
<th>Global Environmental Systems</th>
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<td>Introduction to Quantitative Research</td>
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<tr>
<td>GEOG 2013 [0.5]</td>
<td>Weather and Water</td>
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<tr>
<td>GEOG 2014 [0.5]</td>
<td>The Earth's Surface</td>
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<td>GEOG 3003 [0.5]</td>
<td>Quantitative Geography</td>
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<tr>
<td>GEOG 3010 [0.5]</td>
<td>Field Methods in Physical Geography</td>
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<td>GEOG 3102 [0.5]</td>
<td>Geomorphology</td>
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<td>GEOG 3103 [0.5]</td>
<td>Watershed Hydrology</td>
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<tr>
<td>GEOG 3104 [0.5]</td>
<td>Principles of Biogeography</td>
</tr>
<tr>
<td>GEOG 3105 [0.5]</td>
<td>Climate and Atmospheric Change</td>
</tr>
<tr>
<td>GEOG 3106 [0.5]</td>
<td>Aquatic Science and Management</td>
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<tr>
<td>GEOG 3108 [0.5]</td>
<td>Soil Properties</td>
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<tr>
<td>GEOG 4000 [0.5]</td>
<td>Field Studies</td>
</tr>
<tr>
<td>GEOG 4005 [0.5]</td>
<td>Directed Studies in Geography</td>
</tr>
</tbody>
</table>
Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

- BIOC (Biochemistry)
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering
- ENSC 2001
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

- BIOL 4810 [0.5] Education Research in Biology
- CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs
- CHEM 1004 [0.5] Drugs and the Human Body
- CHEM 1007 [0.5] Chemistry of Art and Artifacts
- ERTH 1010 [0.5] Our Dynamic Planet Earth
- ERTH 1011 [0.5] Evolution of the Earth
- ERTH 2415 [0.5] Natural Disasters
- ISCI 1001 [0.5] Introduction to the Environment

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
- ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Science Psychology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 2001 [0.5]</td>
<td>Introduction to Research Methods in Psychology</td>
</tr>
<tr>
<td>PSYC 2002 [0.5]</td>
<td>Introduction to Statistics in Psychology</td>
</tr>
<tr>
<td>PSYC 2700 [0.5]</td>
<td>Introduction to Cognitive Psychology</td>
</tr>
<tr>
<td>PSYC 3000 [1.0]</td>
<td>Design and Analysis in Psychological Research</td>
</tr>
<tr>
<td>PSYC 3506 [0.5]</td>
<td>Cognitive Development</td>
</tr>
<tr>
<td>PSYC 3700 [1.0]</td>
<td>Cognition (Honours Seminar)</td>
</tr>
<tr>
<td>PSYC 3702 [0.5]</td>
<td>Perception</td>
</tr>
<tr>
<td>PSYC 2307 [0.5]</td>
<td>Human Neuropsychology I</td>
</tr>
<tr>
<td>PSYC 3307 [0.5]</td>
<td>Human Neuropsychology II</td>
</tr>
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</table>

Science Geography Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 4101 [0.5]</td>
<td>Two Million Years of Environmental Change</td>
</tr>
<tr>
<td>GEOG 4103 [0.5]</td>
<td>Water Resources Engineering</td>
</tr>
<tr>
<td>GEOG 4104 [0.5]</td>
<td>Microclimatology</td>
</tr>
<tr>
<td>GEOG 4108 [0.5]</td>
<td>Permafrost</td>
</tr>
<tr>
<td>GEOG 4010 [0.5]</td>
<td>Cold Region Hydrology</td>
</tr>
<tr>
<td>GEOG 4012 [0.5]</td>
<td>Global Biogeochemical Cycles</td>
</tr>
<tr>
<td>GEOG 4014 [0.5]</td>
<td>Geophysical Processes</td>
</tr>
</tbody>
</table>

Approved Course Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

- BIOC (Biochemistry)
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering
- ENSC 2001
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

- BIOL 4810 [0.5] Education Research in Biology
- CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs
- CHEM 1004 [0.5] Drugs and the Human Body
- CHEM 1007 [0.5] Chemistry of Art and Artifacts
- ERTH 1010 [0.5] Our Dynamic Planet Earth
- ERTH 1011 [0.5] Evolution of the Earth
- ERTH 2415 [0.5] Natural Disasters
- ISCI 1001 [0.5] Introduction to the Environment
Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>MATH 0107</td>
<td>Algebra and Geometry</td>
</tr>
<tr>
<td>PHYS 1901</td>
<td>Planetary Astronomy</td>
</tr>
<tr>
<td>PHYS 1902</td>
<td>From our Star to the Cosmos</td>
</tr>
<tr>
<td>PHYS 1905</td>
<td>Physics Behind Everyday Life</td>
</tr>
<tr>
<td>PHYS 2903</td>
<td>Physics Towards the Future</td>
</tr>
<tr>
<td>COMP 1001</td>
<td>Introduction to Computational</td>
</tr>
<tr>
<td></td>
<td>Thinking for Arts and Social</td>
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<td></td>
<td>Science Students</td>
</tr>
<tr>
<td>MATH 0006</td>
<td>Precalculus: Functions and Graphs</td>
</tr>
<tr>
<td>MATH 1009</td>
<td>Mathematics for Business</td>
</tr>
<tr>
<td>MATH 1119</td>
<td>Linear Algebra: with Applications</td>
</tr>
<tr>
<td></td>
<td>to Business</td>
</tr>
<tr>
<td>MATH 1401</td>
<td>Elementary Mathematics for</td>
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<tr>
<td></td>
<td>Economics I</td>
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<tr>
<td>MATH 1402</td>
<td>Elementary Mathematics for</td>
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<tr>
<td></td>
<td>Economics II</td>
</tr>
</tbody>
</table>

Co-operative Education

Undergraduate Co-operative Education Policy
Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.
Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**B.Sc. Environmental Science: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Environmental Science students must successfully complete three (3) work terms to obtain the co-op designation.

**Work Term Course:** ENSC 3999

**Work/Study Pattern:**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
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<tr>
<td>Fall</td>
<td>S</td>
<td>Fall</td>
<td>S</td>
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</tr>
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<td>Winter</td>
<td>S</td>
<td>Winter</td>
<td>S</td>
<td>Winter</td>
</tr>
<tr>
<td>Summer</td>
<td>*O/W</td>
<td>Summer</td>
<td>*W</td>
<td>Summer O/W</td>
</tr>
</tbody>
</table>

**Legend**

- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the
number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degrees**
- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

**Admission Requirements**

**B. Sc. Honours Program**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

**Specific Honours Admission Requirements**
For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

**Advanced Standing**
For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**B.Sc. Major Program**

**B.Sc. Program**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**
For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.
Environmental Science (ENSC) Courses

ENSC 1500 [0.5 credit]
Environmental Science Seminar
The purpose and nature of the program; society's view on the natural and human-modified environment; major environmental issues and their scientific aspects; preparation and presentation of paper and seminars. Includes: Experiential Learning Activity
Prerequisite(s): enrolment in the Environmental Science program.
Lectures, seminars and workshops four hours a week.

ENSC 2000 [0.5 credit]
Environmental Science Field Methods
A field-based course introducing students to practical methods in environmental science. Topics will include earth sciences, geography, biology, and chemistry related aspects of environmental sciences and will focus on quantitative techniques to assess environmental impacts and management. A supplementary fee will apply.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 1006 and BIOL 1004 or BIOL 1104, CHEM 1001 and CHEM 1002 and permission of the Institute.
Field trips, lectures and workshops, seven hours per week (delivered on a single day and on up to two mandatory weekend trips).

ENSC 2001 [0.5 credit]
Earth Resources and Natural Hazards: Environmental Impacts
Environmental impact of mineral, energy and water resource exploitation and impact of hazardous Earth processes such as volcanic eruptions, earthquakes and others: their prediction and mitigation.
Lectures three hours per week.

ENSC 2002 [0.5 credit]
Methods and Analysis in Environmental Science
Study and application of qualitative and quantitative techniques in environmental science, including study design, data collection and assembly, database manipulation, data analysis, and critically evaluating scientific information.
Includes: Experiential Learning Activity
Prerequisite(s): STAT 2507 or permission from the Institute.
Lectures and seminars three hours a week.

ENSC 3000 [0.5 credit]
Environmental Science and Management: Theory and Practice
Theoretical and practical perspectives related to environmental science and management; Emphasis on real-world problems associated with human activities and development of solutions in natural and built environments; Hands-on experience with environmental monitoring and restoration. A supplementary fee will apply.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Environmental Science or permission of the Institute.
Field trips, lectures and workshops, 7 hours per week (delivered on a single day).

ENSC 3106 [0.5 credit]
Aquatic Science and Management
Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation.
Includes: Experiential Learning Activity
Also listed as GEOG 3106.
Prerequisite(s): third-year standing and a second year science or engineering course.
Workshop four hours per week.

ENSC 3509 [0.5 credit]
Group Research in Environmental Science
Major project relating to an issue involving environmental science; effective methods of team research and presentation of group work. May include field work during class time or on weekends.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the Honours Environmental Science program or permission of the Institute.
Lectures, seminars and workshops three hours a week.

ENSC 3700 [0.5 credit]
Topics in Environmental Science
Specific topics of current interest. Topics may vary from year to year.
Prerequisite(s): Third year standing in the Environmental Science program or permission of the Institute.

ENSC 3906 [0.5 credit]
Project Planning for Environmental Research
Independent or group study on the fundamentals of scientific investigation, which may include use of literature, learning of research techniques, and development of a research proposal, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Includes: Experiential Learning Activity
Prerequisite(s): Good standing in third year Environmental Science and permission of the Institute.
ENSC 3999 [0.0 credit]
Co-operative Work Term
Practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Environmental Science Co-operative Option and permission of the Institute. Four-month work term.

ENSC 4001 [0.5 credit]
Environmental Science Practicum
Experience working in the environmental science sector, applying academic training to practical environmental issues. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Environmental Science program.

ENSC 4002 [0.5 credit]
Environmental Decisions
The regulatory and scientific aspects of environmental management decisions, including risk analysis and mitigation, managing chronic and acute environmental impacts, and conservation of species and landscapes. Students will use real-world case studies to learn traditional and cutting-edge decision-making tools.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in any B.Sc. program or permission of the Institute.
Workshops three hours per week.

ENSC 4003 [0.5 credit]
Food Systems and the Environment
This course explores issues of food systems and their sustainability. We will discuss aspects of food systems, including production, distribution, consumption, waste management, and their impact on communities and the environment.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in B.Sc. or B.HSc. program or permission of the Institute.
Lecture three hours per week.

ENSC 4700 [0.5 credit]
Topics in Environmental Science
Prerequisite(s): third-year standing in the Environmental Science program or permission of the Institute.
Lectures and discussion three hours a week.

ENSC 4901 [0.5 credit]
Directed Projects
Independent or group study, for fourth-year students to explore a particular project, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Institute. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

ENSC 4906 [1.0 credit]
Honours Research Project
An independent investigation into an aspect of environmental science supervised by a member of the faculty. Approval of the topic and the research schedule must be obtained from the project supervisor and the course coordinator before the last date for registration.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Honours Environmental Science program, a major CGPA 8.0 and permission of the Institute.

Environmental Studies
This section presents the requirements for programs in:
- Environmental Studies B.A. Honours
- Environmental Studies B.A.
- Minor in Environmental Studies

Program Requirements
Approved Environmental Studies Electives
Please note that the Approved Electives below may have prerequisite requirements or could be cross-listed.

Architecture
- ARCU 3902 [0.5] Urban Studies
- ARCC 3004 [0.5] Workshop: Energy and Form
- ARCC 4103 [0.5] Energy and Form
- ARCH 4105 [0.5] Theories of Landscape Design

Biology
- BIOL 1010 [0.5] Biotechnology and Society
- BIOL 1902 [0.5] Natural History
- BIOL 2600 [0.5] Ecology
- BIOL 2903 [0.5] Natural History and Ecology of Ontario
- BIOL 3601 [0.5] Ecosystems and Environmental Change
- BIOL 3602 [0.5] Conservation Biology

Business
- BUSI 3119 [0.5] Business and Environmental Sustainability

Earth Sciences
- ERTH 2402 [0.5] Climate Change: An Earth Sciences Perspective
- ERTH 2403 [0.5] Introduction to Oceanography
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<thead>
<tr>
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### B.A. Honours (20.0 credits)

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<td>LAWS 3005 [0.5] Law and Regulation</td>
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<td>PHIL 3380 [0.5] Environments, Technology and Values</td>
<td>LAWS 3800 [0.5] Law of Environmental Quality</td>
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<td>SOCI 2035 [0.5] Technology, Culture and Society</td>
<td>TSES 2006 [0.5] Ecology and Culture</td>
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<td>SOCI 2040 [0.5] Food, Culture and Society</td>
<td>TSES 3001 [0.5] Technology-Society Interactions</td>
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<td>TSES 3002 [0.5] Energy and Sustainability</td>
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<td>TSES 4000 [0.5] Technology and Society: Forecasting</td>
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### Bachelor of Arts

**Environmental Studies**

**B.A. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (11.0 credits)**

1. **1.0 credit in:**
   - ENST 1000 [0.5] Introduction to Environmental Studies
   - or ENST 1020 [0.5] People, Places and Environments
   - GEOG 1010 [0.5] Global Environmental Systems

2. **1.0 credit in:**
   - ENST 2000 [0.5] Environmental Justice
   - ENST 2001 [0.5] Sustainable Futures: Environmental Challenges and Solutions

3. **0.5 credit from:**
   - GEOG 2013 [0.5] Weather and Water
   - GEOG 2014 [0.5] The Earth's Surface
   - GEOG 2020 [0.5] Ecosystems of Canada

4. **1.0 credit in:**
   - ENST 2005 [0.5] Introduction to Qualitative Research
   - ENST 2006 [0.5] Introduction to Quantitative Research

5. **1.0 credit in:**
   - ENST 3000 [0.5] Nature, Environment and Society
   - ENST 3022 [0.5] Environmental and Natural Resources

6. **0.5 credit from:**
   - INDG 2015 [0.5] Indigenous Ecological Ways of Knowing
   - PHIL 2380 [0.5] Introduction to Environmental Ethics

7. **1.0 credit from:**
   - ECON 3804 [0.5] Environmental Economics
   - GEOG 3206 [0.5] Health, Environment, and Society
   - GEOG 3209 [0.5] Sustainability and Environment in the South
   - GEOG 3501 [0.5] Geographies of the Canadian North
   - HUMR 3503 [0.5] Global Environmental Justice
   - LAWS 3800 [0.5] Law of Environmental Quality
   - PHIL 3801 [0.5] Environmental Politics
   - TSES 3002 [0.5] Energy and Sustainability

8. **0.5 credit from:**
   - ENST 3900 [0.5] Honours Field Course
   - GEOG 3030 [0.5] Regional Field Excursion

9. **0.5 credit in:**
   - ENST 4000 [0.5] Environmental Studies Seminar

10. **0.5 credit from:**
    - ENST 4006 [0.5] Environmental Policy Analysis
    - GEOG 4022 [0.5] Seminar in People, Resources and Environmental Change
    - GEOG 4023 [0.5] Seminar in Special Topics on the City
    - GEOG 4004 [0.5] Environmental Impact Assessment
    - ENST 4050 [0.5] Environmental and Geographic Education

11. **1.0 credit in:**
    
    a) **Thesis pathway**
    
    1.0 credit from:
    - ENST 4906 [1.0] Honours Research Project
    - ENST 4907 [1.0] Honours Research Essay

    or

    b) **Course pathway**
    
    1.0 credit in Approved Environmental Studies Electives at the 4000 level

12. **0.5 credit in:**

    a) **Co-op students must complete:**
    
    Approved Environmental Studies electives at 4000 level, excluding ENST 4001 and ENST 4002

    b) **All other students must complete one of:**
    
    - ENST 4001 [0.5] Environmental Studies Practicum I
    - ENST 4002 [0.5] Environmental Studies Practicum II

13. **1.0 credit in** Approved Environmental Studies Electives at the 3000 level or above

14. **1.0 credit in** Approved Environmental Studies Electives
### B. Credits Not Included in the Major CGPA (9.0 credits)

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### Total Credits

**15.0**

**Note:** It may be necessary to use some of the free elective credits to fulfill prerequisite requirements for courses in the Major.

### Environmental Studies

#### B.A. (15.0 credits)

### A. Credits Included in the Major CGPA (7.0 credits)

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### Total Credits

**7.0**

### B. Credits Not Included in the Major CGPA (8.0 credits)

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### Total Credits

**8.0**

### Minor in Environmental Studies

Open to all undergraduate students not in Environmental Studies programs.

### Minor in Environmental Studies (4.0 credits)

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### Total Credits

**4.0**

Students should consult with the Department when planning their program and selecting courses. Some of the Environmental Studies Approved Electives have prerequisites, which are not explicitly included in the program. Students should plan to obtain all necessary prerequisites or waivers for courses selected for this program.

### B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

### First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.
Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURL, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design


Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAEE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences


Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar’s Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada.
The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy
Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements
COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

- Failure to achieve a grade of SAT in COOP 1000
- Failure to pay all co-op related fees
- Failure to actively participate in the job search process
- Failure to attend all interviews for positions to which the student has applied
- Declining more than one job offer during the job search process
- Continuing a job search after accepting a co-op position
- Dismissal from a work term by the co-op employer
- Leaving a work term without approval by the Co-op manager
- Receipt of an unsatisfactory work term evaluation
- Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**B.A. Honours Environmental Studies: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Environmental Studies program;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a minimum major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term:
   - a. the required second-year methods courses in their program (ENST 2005, ENST 2006)
   - b. the required field course in their program (ENST 3900)
5. Be registered as a full-time student.

B.A. Honours Environmental Studies students must successfully complete three (3) work terms to obtain the Co-op designation.

**Co-op work term course**: ENST 3999

**Work/Study Pattern**:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<td>Term</td>
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<td>Summer</td>
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</tbody>
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**Legend**

S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.
Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Environmental Studies (ENST) Courses

ENST 1000 [0.5 credit]
Introduction to Environmental Studies
A critical introduction to the scholarly field of environmental studies, with an emphasis on society-environment entanglements. It is designed to engage with environmental issues. Possible themes include population, scarcity, institutions, commons, risks, hazards, markets, political economy, and the social construction of nature. Precludes additional credit for FYSM 1100 and ENST 1001 (no longer offered). Lecture two hours and workshops/tutorials one hour weekly.

ENST 1020 [0.5 credit]
People, Places and Environments
Introduction to human geography. Examination of relationships between people, communities, society and the natural environment at local to global scales. Population change, cultural patterns, and historical, economic, political and environmental forces that shape human activity and experiences from place to place. Includes: Experiential Learning Activity Also listed as GEOG 1020. Lectures two hours a week and tutorial one hour a week.

ENST 2000 [0.5 credit]
Environmental Justice
Contemporary and foundational theories, practice and praxis of environmental justice in Canadian and comparative settings. Combine and communicate about aspects of the physical, built and social environments to understand how uneven conditions develop. Strategies and ideas to move towards greater equity and good environmental relationships. Prerequisite(s): second-year standing in the Environmental Studies program or permission of the Department. Lecture two hours a week, discussion one hour a week.

ENST 2001 [0.5 credit]
Sustainable Futures: Environmental Challenges and Solutions
Individual and collective responses to pressing environmental problems. Innovative ways in which the environment can be protected and restored, taking into consideration socioeconomic, political and cultural factors. Topics include environmental lifestyles, sustainable communities, food systems, environmental design, and political activism. Includes: Experiential Learning Activity Prerequisite(s): second-year standing in the Environmental Studies program or permission of the Department. Lectures, seminars and field work three hours a week.
ENST 2005 [0.5 credit]  
Introduction to Qualitative Research  
Introduction to the research process, from generating questions through to reporting results. Topics include intensive and extensive research approaches; the use of surveys, interviews and other data collection methods; the analysis of qualitative information; and the ethical dimensions of doing research with people and communities.  
Includes: Experiential Learning Activity  
Also listed as GEOG 2005.  
Prerequisite(s): 1.0 credit in GEOG or ENST at the 1000-level and second-year standing, or permission of the Department.  
Lectures two hours a week, workshop two hours a week.

ENST 2006 [0.5 credit]  
Introduction to Quantitative Research  
Introduction to solving problems using descriptive and inferential statistical methods. Graphical and numerical tools to describe distributions. Probability, sampling and estimates, and hypothesis testing. Fundamentals of spatial statistics and analysis.  
Includes: Experiential Learning Activity  
Also listed as GEOG 2006.  
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), NEUR 2002, PSCI 2702, STAT 2507, STAT 2606.  
Lectures two hours a week, laboratory two hours a week.

ENST 2500 [0.5 credit]  
Climate Change: Social Science Perspectives  
An introduction to climate change as a political, economic and socio-cultural phenomenon, including the political-economic and world-historical causes of anthropogenic greenhouse gas emissions; variations in impact and vulnerability; climate justice and other political movements; global mitigation and adaptation strategies; and proposals for radical systemic change.  
Includes: Experiential Learning Activity  
Also listed as GEOG 2500.  
Prerequisite(s): second-year standing or permission of the department.  
Lectures two hours a week, discussion groups one hour a week.

ENST 3000 [0.5 credit]  
Nature, Environment and Society  
Overview of social science perspectives analyzing the relationship of society and the environment. Examination of environmental problems, solutions, conditions, and interventions through the study of concepts, theories, and research drawn from a range of scholarly approaches to questions of nature.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in Environmental Studies or permission of the department.  
Lecture and discussion three hours a week.

ENST 3022 [0.5 credit]  
Environmental and Natural Resources  
Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources.  
Includes: Experiential Learning Activity  
Also listed as GEOG 3022.  
Prerequisite(s): third-year standing in Geography or Environmental Studies or BGInS Specialization/Stream in Globalization and Environment or permission of the Department.  
Lecture three hours a week.

ENST 3900 [0.5 credit]  
Honours Field Course  
Field research, with a focus on data collection methods, analysis and presentation of findings. Design and conduct research that links the human and biophysical environment. Topics may change from year to year.  
Includes: Experiential Learning Activity  
Also listed as GEOG 3000.  
Precludes additional credit for ENST 2900 (no longer offered).  
Prerequisite(s): GEOG 2005/ ENST 2005 and GEOG 2006/ ENST 2006, third-year Honours standing in Environmental Studies, Geomatics, or Geography, or permission of the Department.  
Normally consists of a multi-day field excursion in the Ottawa region. A supplementary charge may apply. Consult the department regarding course details.

ENST 3999 [0.0 credit]  
Co-operative Work Term  
Includes: Experiential Learning Activity

ENST 4000 [0.5 credit]  
Environmental Studies Seminar  
An advanced seminar designed to provide a capstone experience that builds upon and applies the analytical skills and interdisciplinary knowledge acquired in the Environmental Studies program. Topics vary year to year and by course section (see departmental website).  
Includes: Experiential Learning Activity  
Prerequisite(s): Registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program.  
Seminar three hours per week.
ENST 4001 [0.5 credit]
Environmental Studies Practicum I
External agency setting provides the basis for translating academic training into practical involvement with environmental issues. Observation and involvement in issues and research methods used by professional environmental practitioners.
Includes: Experiential Learning Activity
Prerequisite(s): registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4002 [0.5 credit]
Environmental Studies Practicum II
External agency setting provides the basis for translating academic training into practical involvement with environmental issues. Observation and involvement in issues and research methods used by environmental practitioners.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the fourth year of the Environmental Studies Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4004 [0.5 credit]
Environmental Impact Assessment
Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies.
Includes: Experiential Learning Activity
Also listed as GEOG 4004.
Prerequisite(s): GEOG 3022 or ENST 3022, and fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.
Lectures and seminars three hours per week.

ENST 4005 [0.5 credit]
Directed Studies in Environmental Studies
Students pursue their interest in a selected theme in environmental studies on a tutorial basis with a faculty member.
Prerequisite(s): permission of the Department.

ENST 4006 [0.5 credit]
Environmental Policy Analysis
Critical examination of the creation, implementation and effectiveness of government policies related to environmental issues. Emphasis on perspectives, actors, institutions and social and economic relationships affecting policy responses to these issues, and on tools for analyzing the implications of specific policy choices.
Prerequisite(s): fourth-year Honours standing in Environmental Studies, Geography, or permission of the Department.
Seminar three hours per week.

ENST 4007 [0.5 credit]
Special Topics in Geography and Environmental Studies
Selected topics in geography and/or environmental studies.
Also listed as GEOG 4007.
Precludes additional credit for GEOG 4006 (no longer offered).
Prerequisite(s): fourth-year Honours standing in the Department or permission of the Department.
Seminar three hours per week.

ENST 4022 [0.5 credit]
Seminar in People, Resources, and Environmental Change
A selected topic or field of inquiry concerning natural resource use and environmental change.
Also listed as GEOG 4022.
Prerequisite(s): GEOG 3022 or ENST 3022 and fourth-year Honours standing in Geography or Environmental Studies or BGInS Specialization in Globalization and Environment, or permission of the Department.
Seminar three hours per week.

ENST 4050 [0.5 credit]
Environmental and Geographic Education
Selected theoretical and applied issues concerning environmental and geographic education.
Also listed as GEOG 4050.
Prerequisite(s): Third-year honours standing in Geography or Environmental Studies, or permission of the Department.
Seminar three hours per week.

ENST 4400 [0.5 credit]
Field Studies
Field observation and methodology in a selected region, special topic or contemporary problem; on an individual or group basis.
Includes: Experiential Learning Activity
Also listed as GEOG 4000.
Prerequisite(s): third-year Honours standing and permission of the Department.
Hours to be arranged.

ENST 4450 [0.5 credit]
Community-Engaged Research
Working in partnership with local organizations, students apply their geographical knowledge to conduct community-engaged research. Student projects will generate outputs for community partners. Research topics vary year to year.
Includes: Experiential Learning Activity
Also listed as GEOG 4450.
Prerequisite(s): fourth-year standing, or permission of the department.
Lectures, discussion and project work three hours a week.
ENST 4906 [1.0 credit]
Honours Research Project
An independent investigation into a select aspect of environmental studies, supervised by a faculty member. Possible outcomes might include: workshops, audio-visual productions, lay publications, and field projects accompanied by an essay demonstrating the student's capacity to critically reflect on the research project. Includes: Experiential Learning Activity
Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEG 4909/GEOM 4909, GEOG 4906, GEOM 4906, and ENST 4907.
Prerequisite(s): fourth-year Honours standing in Environmental Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.
Hours to be arranged with faculty adviser.

ENST 4907 [1.0 credit]
Honours Research Essay
Interdisciplinary research essay on an environmental issue, carried out in consultation with a faculty supervisor. The student must consult with the undergraduate student advisor in selecting a project and a supervisor.
Includes: Experiential Learning Activity
Precludes additional credit for ENST 4906, GEOG 4909, GEOM 4909, GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906 and GEOM 4906.
Prerequisite(s): fourth-year Honours standing in Environmental Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.
Hours to be arranged with faculty adviser.

European and Russian Studies
This section presents the requirements for programs in:
- European and Russian Studies B.A. Honours
- European and Russian Studies B.A. Combined Honours
- European and Russian Studies B.A.
- Specialization in Europe and Russia in the World B.G.In.S. Honours
- Stream in Europe and Russia in the World B.G.In.S.
- Minor in European and Russian Studies

Program Requirements
EURUS Language Requirement
All candidates in the European and Russian Studies B.A., B.A. Honours and B.A. Combined Honours programs are required to demonstrate proficiency in a major regional language. Language proficiency is defined as the completion of an intermediate level of university language instruction (two years, 2.0 Carleton credits). Students who wish to count a relevant regional language that is not taught at Carleton should consult with and request approval from the Undergraduate Supervisor.

Students in the Bachelor of Global and International Studies Specialization or Stream Europe and Russia in the World must complete the BGInS Language requirement in an approved regional language of Europe, Russia, and Eurasia. See the BGInS Language Requirement for details.

Students are encouraged to continue with language instruction beyond the intermediate level required for the Institute Language Requirement. Advanced-level regional language courses may be counted towards EURUS degree requirements (see specific program requirements for details).

This Institute Language requirement may be fulfilled in one of three ways:

1. Completion of one of the following courses (or equivalent): FREN 1100; FREN 1110; GERM 2020; GERM 2110; ITAL 2020; ITAL 2110; PORT 2110; RUSS 2020; SPAN 2020; SPAN 2110.
   Courses at other institutions may also be used to meet the language requirement as long as they are accepted by the Department of French or the School of Linguistics and Language Studies as being equivalent to or at a higher level than the courses listed above.
   For languages not taught at Carleton, an intermediate level is equal to two full years (2.0 Carleton credit) of university-level language instruction.

2. Certification by the unit offering the relevant language or the Institute that the student has attained a level of language proficiency equivalent to completion of one of the courses above. Proficiency may be demonstrated through documentation.

3. Secondary School Language of Instruction: Students whose secondary school transcripts show that their primary language of instruction in secondary school was a relevant regional language other than English may be exempted from the language requirement. Subject to approval of the Undergraduate Supervisor.

European and Russian Studies
B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits):

1. 0.5 credit in: Foundations
   EURR 1001 [0.5] Introduction to European and Russian Studies 0.5

2. 1.0 credit in: Core Politics, Society, and International Affairs
   EURR 2001 [0.5] Current Issues in European Politics and Society 1.0

3. 1.0 credit in: Core Literature and Culture
   EURR 3001 [0.5] Literature and Culture in Europe 1.0
   EURR 3002 [0.5] Literature and Culture in Russia and Eurasia 1.0

4. 1.0 credit from: Modern History category 1.0
5. 1.5 credits from: Politics and Economics category. Must include credits in both PSCI and ECON 1.5
6. 0.5 credit from: Language, Art, Culture category 0.5
7. 0.5 credit from: Contexts and Methods for Regional Studies category 0.5
8. 2.0 credits from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR not used to fulfill another requirement. No more than 1.0 credit from the Contexts and Methods for Regional Studies category.

9. 2.0 credits from: EURUS 4000-level Honours category. At least 1.0 credit in EURR. May include EURR 4908 (1.0) Honours Essay

B. Credits Not Included in the Major CGPA (10.0 credits):

10. 1.0 credit from:
    
    ECON 1001 [0.5] Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics

11. 9.0 credits in free electives. 9.0

C. Additional Requirements

12. The EURUS Language Requirement must be met.

Total Credits 20.0

Notes:

1. See "Approved Courses in European, Russian, and Eurasian Studies" section of the calendar for a list of approved courses that fulfill specific categories in the requirements above.

2. With the permission of the Institute, students who transfer or enter the program after first year may substitute a course from the list of Approved Courses in European, Russian, and Eurasian Studies for EURR 1001.

European and Russian Studies

B.A. Combined Honours (20.0 credits)

A. Credits Included in the EURUS Major CGPA (7.0 credits)

1. 0.5 credit in: Foundations 0.5

    EURR 1001 [0.5] Introduction to European and Russian Studies

2. 1.0 credit in: Core Politics, Society, and International Affairs 1.0

    EURR 2001 [0.5] Current Issues in European Politics and Society

    EURR 2002 [0.5] Europe and Russia in the World

3. 1.0 credit in: Core Literature and Culture 1.0

    EURR 3001 [0.5] Literature and Culture in Europe

    EURR 3002 [0.5] Literature and Culture in Russia and Eurasia

4. 1.0 credit from: Modern History category 1.0

5. 1.0 credit from: Politics and Economics category. Must include credits in both PSCI and ECON 1.0

6. 0.5 credit from: Language, Art, Culture category 0.5

7. 1.0 credit from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR not used to fulfill another requirement. No more than 0.5 credit from the Contexts and Methods for Regional Studies category. 1.0

8. 1.0 credit from: EURUS 4000-level Honours category. At least 0.5 credit in EURR. May include EURR 4908 (1.0) Honours Essay 1.0

B. Credits Not Included in the Major CGPA (13.0 credits)

9. 1.0 credit from:

Total Credits 15.0

Notes:

1. See "Approved Courses in European, Russian, and Eurasian Studies" section of the calendar for a list of approved courses that fulfill specific categories in the requirements above.

2. With the permission of the Institute, students who enter the program after first year may substitute a course from the list of Approved Courses in European, Russian, and Eurasian Studies for EURR 1001.
Bachelor of Global and International Studies  
(B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Europe and Russia in the World  
B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

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<td>GINS 1010 [0.5] International Law and Politics</td>
</tr>
<tr>
<td></td>
<td>GINS 1020 [0.5] Ethnography, Globalization and Culture</td>
</tr>
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<td>GINS 2000 [0.5] Ethics and Globalization</td>
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<td>GINS 2010 [0.5] Globalization and International Economic Issues</td>
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<td>GINS 2020 [0.5] Global Literatures</td>
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<td>GINS 3010 [0.5] Global and International Theory</td>
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<td>GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change</td>
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<td>GINS 4090 [0.5] Honours Seminar in Global and International Studies</td>
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B. Credits Not Included in the Major CGPA (7.0 credits):

C. Additional Requirements

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<td>EURR 3002 [0.5] Literature and Culture in Russia and Eurasia</td>
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<td>EURR 4900 [0.0] Honours Seminar in Global and International Studies</td>
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Total Credits 20.0

Stream in Europe and Russia in the World  
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits):

1. 4.0 credits in: Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream

   a. 0.5 credit in: Foundations
      - EURR 1001 [0.5] Introduction to European and Russian Studies

   b. 1.0 credit in: Core Politics, Society, and International Affairs
      - EURR 2001 [0.5] Current Issues in European Politics and Society
      - EURR 3001 [0.5] Literature and Culture in Europe and Russia
      - EURR 3002 [0.5] Literature and Culture in Russia and Eurasia

   c. 2.5 credits from: Approved Courses in European, Russian, and Eurasian Studies. May include:
      - EURR 2001 [0.5] Current Issues in European Politics and Society
      - EURR 3001 [0.5] Literature and Culture in Europe and Russia

B. Credits Not Included in the Major CGPA (7.0 credits):

C. Additional Requirements

Total Credits 15.0

Minor in European and Russian Studies (4.0 credits)

Open to all undergraduate degree students not in EURUS programs or the B.G.In.S. Specialization or Stream in Europe and Russia in the World.

Requirements:

1. 1.0 credit from: EURUS Foundation and Literature and Culture
   - EURR 1001 [0.5] Introduction to European and Russian Studies
   - EURR 3001 [0.5] Literature and Culture in Europe and Russia

2. 1.0 credit in: EURUS Core Politics and International Affairs
3. **0.5 credit from:** Modern History category 0.5
4. **0.5 credit from:** Politics and Economics category 0.5
5. **1.0 credit from:** Approved Courses in European, Russian, and Eurasian Studies. May include EURR courses not used to fulfill another requirement.

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

---

### Total Credits

**4.0**

Note: See the "Approved Courses in European, Russian, and Eurasian Studies" section of the calendar for a list of courses that fulfill specific categories indicated in the requirements above.

### Approved Courses in European, Russian, and Eurasian Studies

This list includes categories of approved courses that fulfill specific program requirements for all undergraduate programs in the Institute of European, Russian, and Eurasian Studies (EURUS). Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

#### Modern History

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<td>HIST 2508 [0.5]</td>
<td>France since 1889</td>
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<td>HIST 2510 [0.5]</td>
<td>19th-Century Germany</td>
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<td>20th-Century Germany</td>
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<td>HIST 2802 [0.5]</td>
<td>War and Society in Modern Europe, 1789-1914</td>
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<td>War and Society in Modern Europe, 1914-1950</td>
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<td>Revolution and Society in France, 1789-1799</td>
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#### Politics and Economics

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<td>PSCI 3206 [0.5]</td>
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<td>Politics in Russia and Ukraine: Power and Contestation</td>
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<td>Reconstruction and Transformation in Europe and Eurasia</td>
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<td>PSCI 3608 [0.5]</td>
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#### Language, Art, Culture

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<td>EURR 4202</td>
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<td>EURR 4204</td>
<td>Central Europe, Past and Present</td>
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<td>EURR 4205</td>
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Students in the following interdisciplinary programs are exempt from breadth requirements.

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<td>Honours Essay</td>
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<td>HIST 4100 [1.0]</td>
<td>Seminar in Early Modern European History</td>
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<td>HIST 4200 [1.0]</td>
<td>Seminar in European History</td>
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<td>HIST 4201 [0.5]</td>
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<td>HIST 4600 [1.0]</td>
<td>Seminar in Russian History</td>
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<td>PSCI 4103 [0.5]</td>
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<td>PSCI 4505 [0.5]</td>
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<td>PSCI 4610 [0.5]</td>
<td>Politics of Migration Management</td>
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**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes**: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MAAE, MATH, MECH, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**


**Subject codes**: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**


**Subject codes**: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENV, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**


**Subject codes**: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK
Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries. Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy
Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements
COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.
Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts. While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:
1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit.

Students are advised to discuss the application process and requirements with the International Student Services Office.
B.A. Honours European and Russian Studies: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours European and Russian Studies program
2. Obtained and maintained an overall CGPA of 8.0 or higher and a major CGPA of 9.0 or higher
3. Have successfully completed by the start-date of the first work term, the required first-year courses, second-year courses; have completed PSCI 3206, PSCI 3207, PSCI 3208, PSCI 3209, PSCI 3704 before the second work term; and ECON 3807 or ECON 3808 before the third work term.

Students in B.A. Honours European and Russian Studies must successfully complete three (3) work terms to obtain the Co-op designation.

**Co-op Work Term Course: EURR 3999**

**Work/Study Pattern:**

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<th>Year 1</th>
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**Legend**

S: Study
W: Work
O: Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Admission Requirements**

**Degrees**

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

**First Year**

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section "English Language Requirements" in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

**Advanced Standing**

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**European and Russian Studies (EURR) Courses**

EURR 1001 [0.5 credit]

Introduction to European and Russian Studies

An introduction to the study of Europe and Russia, including aspects of the histories, societies, cultures, and politics of the region. Includes: Experiential Learning Activity

Lectures/groups three hours a week.

EURR 2001 [0.5 credit]

Current Issues in European Politics and Society

An interdisciplinary examination of social, political, and economic issues facing Europe, including the countries of the European Union, Eastern Europe, and Russia.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

EURR 2002 [0.5 credit]

Europe and Russia in the World

The position of Europe, the European Union, and the Russian Federation in a global context, including geopolitical, economic, security, and human dimensions.

Prerequisite(s): second year standing.

Lecture and discussion three hours a week.
EURR 3001 [0.5 credit]
Literature and Culture in Europe
A survey of the literature and cultural texts that have defined Europe. Examination of fiction and non-fiction texts that have contributed to and reflected the development of European culture and society. Also listed as ENGL 3804.
Precludes additional credit for EURR 2000 or ENGL 2010.
Prerequisite(s): second year standing.
Lecture and discussion three hours a week.

EURR 3002 [0.5 credit]
Literature and Culture in Russia and Eurasia
A survey of the literature and cultural texts that have defined Russian and neighboring Slavic countries. Examination of fiction and non-fiction texts that have contributed to and reflected the development of Russian and Slavic culture and society. Also listed as ENGL 3805.
Precludes additional credit for EURR 2000 and ENGL 2010.
Prerequisite(s): second-year standing.
Lecture and discussion three hours a week.

EURR 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
Prerequisite(s): registration in the B.A. European and Russian Studies (Honours) Co-operative option, completion of the Co-op preparation classes offered by the Co-op Office and permission of the Institute.

EURR 4002 [0.5 credit]
Post-Soviet States and Societies
The relationship between social forces and state structures at both the national and local levels in the USSR and the post-Soviet states. Also listed as PSCI 4502.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5002, PSCI 5110, for which additional credit is precluded.
Seminar three hours a week.

EURR 4003 [0.5 credit]
Social and Political Perspectives in Europe
Social issues and policies in the European Union including European identity, democratic legitimacy, nationalist and extremist political movements, Euro-scepticism, migration and immigration, social inclusion/exclusion and social models, gender and family policy, regional differentiation. Precludes additional credit for EURR 4000.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5003, for which additional credit is precluded.
Seminar three hours a week.

EURR 4008 [0.5 credit]
Nationalism and Ethnic Conflict in Eastern and Central Europe
Ethnic basis of nationalism in the region. Ethnic politics and trends.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4100 [0.5 credit]
Nation-Building in Central and Eastern Europe
Processes of nation building in the region examined in terms of a particular country, or set of countries. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5100, for which additional credit is precluded.
Seminar three hours a week.

EURR 4101 [0.5 credit]
The Balkans in Transition – 1918 to 1989
The seminar uses the concept of transition to understand the Balkan encounter with modernity and Europe. Key periods to be examined include the interwar era and the period of communist rule, with an emphasis on political, social and economic themes. Also listed as HIST 4605.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4102 [0.5 credit]
The Balkans since 1989
Selected topics in Balkan politics and society since the collapse of communism in 1989, focusing on the democratic transition and the EU accession process. The legacies of communist rule, democratization and the many national questions that still exist in the region. Also listed as PSCI 4507.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4103 [0.5 credit]
The Great Russian Novel
A study of masterpieces of prose fiction from the Golden Age of Russian literature. Readings will be chosen from writers such as Turgenev, Tolstoy, Dostoevsky, Gogol, and/or others. All texts will be studied in English translation. Also listed as ENGL 4600.
Prerequisite(s): Third-year standing.
Lecture three hours a week.
EURR 4104 [0.5 credit]
European Integration and European Security
Issues related to the formation of supra-national decision-making structures in Europe.
Includes: Experiential Learning Activity
Also listed as PSCI 4608.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5104, for which additional credit is precluded.
Seminar three hours a week.

EURR 4106 [0.5 credit]
Selected Topics in European Integration Studies
Selected topics related to European integration in the post-World War II period.
Also listed as PSCI 4609.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4107 [0.5 credit]
Russia's Regional and Global Ambitions
Domestic conditions in Russia from 2000 to the present and the framing of Russia's foreign policy and strategic objectives towards the former Soviet republics and other key global actors, including the United States, the European Union, NATO and China.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5107, for which additional credit is precluded.
Seminar three hours a week.

EURR 4201 [0.5 credit]
Special Topics in European Studies
A seminar focusing on selected topics related to Europe.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4202 [0.5 credit]
Special Topics in Russian and Eurasian Studies
A seminar focusing on selected topics related to Russia and neighbouring countries.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5202, for which additional credit is precluded.
Seminar three hours a week.

EURR 4204 [0.5 credit]
Central Europe, Past and Present
Evolution and current status of Central Europe from periods of foreign control in the late nineteenth and twentieth centuries to independent statehood, with emphasis on national accommodations and conflicts.
Also listed as HIST 4604.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5204, for which additional credit is precluded.
Seminar three hours a week.

EURR 4205 [0.5 credit]
Politics of Identity in Europe and the Russian Area
The relationships between political transformation, identity-building, ethnicity, and gender politics in post-communist states, considered in comparison with select countries in Central and/or Western Europe.
Includes: Experiential Learning Activity
Also listed as PSCI 4501.
Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2500, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.
Seminar three hours a week.

EURR 4206 [0.5 credit]
Internship and Applied Policy Skills
A seminar accompanying an unpaid internship placement to develop workplace and applied policy skills. Relating applied experience to academic literature. Writing skills for an applied policy setting. Internship placement: 12 days over 12 weeks.
Includes: Experiential Learning Activity
Prerequisite(s): open only to fourth-year EURUS B.A. Honours students with a minimum B+ average and placement in an internship position in the same semester or in the previous semester (based on a competitive application process).
Also offered at the graduate level, with different requirements, as EURR 5301, for which additional credit is precluded.
Seminar: six three-hour seminar sessions.

EURR 4207 [0.5 credit]
Politics of Central Eurasia
Examination of the Caucasus and Central Asia, from Chechnya to former Soviet republics of the region, Afghanistan and Chinese Turkestan. Interests of Russia, China, and the United States. Emphasis on underdevelopment, oil and gas, terrorism, Islam.
Includes: Experiential Learning Activity
Also listed as PSCI 4503.
Prerequisite(s): fourth year Honours standing or permission of the Institute.
Seminar three hours a week.
EURR 4208 [0.5 credit]
Foreign Policies of Soviet Successor States
The foreign policies of the USSR and of Russia and selected other successor states, with special emphasis on the search for a new security order.
Also listed as PSCI 4601.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4209 [0.5 credit]
Politics of the Caucasus and Caspian Basin
Examination of the South Caucasus (Azerbaijan, Georgia, Armenia), the Russian-held North Caucasus, including Chechnya, and relations with Iran. Emphasis on state and society, oil and gas, transregional communications, interests of western powers, ethnic relations.
Includes: Experiential Learning Activity
Also listed as PSCI 4504.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4302 [0.5 credit]
EU Summer Study Abroad
This course is open only to students in approved summer study options in Europe, particularly the EU Study Tour.
Includes: Experiential Learning Activity
Prerequisite(s): approval of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5302, for which additional credit is precluded.

EURR 4303 [0.5 credit]
Contemporary Europe: From Postwar to the European Union
History of contemporary Europe from 1945 to present covering both eastern and western halves of the continent and including social, cultural, political, and economic dimensions.
Includes: Experiential Learning Activity
Also listed as HIST 4606.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5303, for which additional credit is precluded.
Seminar three hours a week.

EURR 4304 [0.5 credit]
Europe and International Migration
Europe's role in international migration. Topics to be discussed may include migration and mobility as both assets and challenges for sending, transit, and destination countries, changing geographies of migration, inclusion and exclusion, political mobilization, and responses of European states and other actors.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5304, for which additional credit is precluded.
Seminar three hours a week.

EURR 4305 [0.5 credit]
Imperial Russia and the Russian Revolution
Examination of the expansion and downfall of tsarist Russia from the eighteenth century to the revolutionary era and the establishment of Bolshevik rule. Topics include the relationship between the monarchy and subject peoples, social and economic change, and daily life.
Includes: Experiential Learning Activity
Also listed as HIST 4607.
Precludes additional credit for EURR 4203.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5305, for which additional credit is precluded.
Seminar three hours a week.

EURR 4306 [0.5 credit]
The Soviet Union: Power and Culture
Examination of the rise of the Soviet Union to a global power and subsequent tensions that promoted its collapse. The course will analyze Stalinism, the Second World War, the Thaw, and Brezhnev and Gorbachev eras through the lens of the USSR's citizens.
Includes: Experiential Learning Activity
Also listed as HIST 4608.
Precludes additional credit for EURR 4203.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5306, for which additional credit is precluded.
Seminar three hours a week.
EURR 4704 [0.5 credit]
The Business Environment in Europe
The economic, political, legal, and cultural environment for doing business in the European Union and other regions in Europe. Patterns of foreign trade and investment, market characteristics, science and technology, regulation and European integration, and business culture. Also listed as BUSI 4704. Precludes additional credit for EURR 4006 (no longer offered), BUSI 4604 (no longer offered). Prerequisite(s): third-year standing. Seminar three hours a week.

EURR 4900 [1.0 credit]
Tutorial in European and Russian Studies
Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor. Prerequisite(s): permission of the Institute.

EURR 4901 [0.5 credit]
Tutorial in European and Russian Studies
Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor. Prerequisite(s): permission of the Institute.

EURR 4902 [0.5 credit]
Tutorial in European and Russian Studies
Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor. Prerequisite(s): permission of the Institute.

EURR 4908 [1.0 credit]
Honours Essay
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by the supervisor and a second reader. Students should consult with the Supervisor of Undergraduate Studies regarding the topic and supervisor. Institute’s Honours Essay guidelines apply. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing, a CGPA of 9.00 or higher in courses qualifying for credit in European and Russian Studies, and permission of the Institute.

Film Studies
This section presents the requirements for programs in:
- Film Studies B.A. Honours
- Film Studies B.A. Combined Honours
- Film Studies B.A.
- Minor in Film Studies
- Post-Baccalaureate Diploma in Film Studies

Program Requirements
Film Studies
B.A. Honours (20.0 credits)
A. Credits Included in the Major CGPA (9.0 credits)
1. 3.0 credits in:
   FILM 1101 [0.5] Introduction to Film Studies
   or FILM 1120 [0.5] Seminar in Film Studies
   FILM 2001 [0.5] Film Theory and Analysis I
   FILM 2002 [0.5] Film Theory and Analysis II
   FILM 2606 [0.5] History of World Cinema I
   FILM 2607 [0.5] History of World Cinema II
   FILM 4001 [0.5] Research and Critical Methodologies
2. 2.5 credits in FILM at the 2000-level or higher
3. 2.0 credit in FILM at the 3000-level
4. 1.5 credits in FILM at the 4000-level
B. Credits Not Included in the Major CGPA (11.0 credits)
5. 8.0 credits in electives not in FILM
6. 3.0 credits in free electives.
Total Credits 20.0

Film Studies
B.A. Combined Honours (20.0 credits)
A. Credits Included in the Film Studies Major CGPA (7.0 credits)
1. 2.5 credits in:
   FILM 1101 [0.5] Introduction to Film Studies
   or FILM 1120 [0.5] Seminar in Film Studies
   FILM 2001 [0.5] Film Theory and Analysis I
   FILM 2002 [0.5] Film Theory and Analysis II
   FILM 2606 [0.5] History of World Cinema I
   FILM 2607 [0.5] History of World Cinema II
2. 2.0 credits in FILM at the 2000-level or higher
3. 1.5 credits in FILM at the 3000-level or higher
4. 1.0 credit in FILM at the 4000-level
B. Credits Not Included in the Film Studies Major CGPA (13.0 credits)
5. The requirements of the other discipline must be satisfied
6. Sufficient free electives to total 20.0 credits for the program.
Total Credits 20.0

Film Studies
B.A. (15.0 credits)
A. Credits Included in the Major CGPA (6.0 credits)
1. 2.0 credits in:
   FILM 1101 [0.5] Introduction to Film Studies
   or FILM 1120 [0.5] Seminar in Film Studies
   FILM 2001 [0.5] Film Theory and Analysis I
   FILM 2606 [0.5] History of World Cinema I
   FILM 2607 [0.5] History of World Cinema II
2. 2.0 credits in FILM at the 2000-level or higher
3. 2.0 credits in FILM at the 3000-level
B. Credits Not Included in the Major CGPA (9.0 credits)
4. 6.0 credits in electives not in FILM

Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESPA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURLR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfill the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Regulations**

**Post-Baccalaureate Diploma**

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

**Definition**

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

**Program Requirements**

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.
English as a Second Language Requirement
In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation
All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation
• A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
• A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
• Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees
• Bachelor of Arts (B.A.) (Honours)
• Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing
B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Film Studies (FILM) Courses
FILM 1101 [0.5 credit]
Introduction to Film Studies
Introduction to the study of film that emphasizes problems and methods of film analysis through the study of various types of films. Topics relating to the filmmaker, film genre, and film history are covered through a focus on questions of style and technique.
Precludes additional credit for FILM 1120, FILM 1000 (no longer offered), and FYSM 1510.
Lecture and screening three hours a week, discussion one hour a week.

FILM 1120 [0.5 credit]
Seminar in Film Studies
A seminar in the study of film that emphasizes problems and methods of film analysis through the study of a variety of types of films.
Precludes additional credit for FILM 1101, FILM 1000 (no longer offered) and FYSM 1510.
Prerequisite(s): enrolment in a Film Studies major.
Lecture and screening three hours a week, discussion one hour a week.

FILM 2001 [0.5 credit]
Film Theory and Analysis I
Introduction to major film theories and analytical practices. The objective of this course is to familiarize students with the main theories and methods of analysis that have been developed for the study of film.
Precludes additional credit for FILM 2000 (no longer offered).
Prerequisite(s): FILM 1101 or FILM 1120 and second-year standing; or permission of the Discipline.
Lecture and screening three hours a week, seminar one hour a week.
FILM 2002 [0.5 credit]
Film Theory and Analysis II
Building on the skills acquired in FILM 2001, this course considers specific debates in film theory, and provides students with advanced methods for film analysis. Precludes additional credit for FILM 2000 (no longer offered). Prerequisite(s): FILM 1101 or FILM 1120, and FILM 2001, and second-year standing; or permission of the Discipline. Lecture and screening three hours a week, seminar one hour a week.

FILM 2101 [0.5 credit]
The Film Industry
The organization of the production, distribution and exhibition practices of various film industries. May include an examination of the relationship between a national film industry and its television industry. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2106 [0.5 credit]
The Documentary
An examination of the work of individual filmmakers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered. Also listed as JOUR 2106. Precludes additional credit for FILM 2105 (no longer offered), JOUR 2105 (no longer offered). Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2201 [0.5 credit]
National Cinema
This course examines the film production of specific countries in order to determine the themes, the styles, and the character of a national cinema. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2202 [0.5 credit]
Japanese Cinema
Various practices and movements in the history of Japanese cinema, ranging from the silent era to the current digital age. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2203 [0.5 credit]
Scandinavian Cinema
The development of cinema culture and film production in the Scandinavian countries, from the golden age of Scandinavian silent cinema to contemporary Nordic noir. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2204 [0.5 credit]
Indigenous Cinema and Media
A critical examination of films and other audiovisual media created by Indigenous artists, such as independent films, genre films, documentaries, web series, installations, and video games. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Department. Lecture and screening three hours a week, lecture one hour a week.

FILM 2206 [0.5 credit]
Canadian Cinema
A critical examination of Canadian cinema and media and how it relates to other aspects of Canadian culture. Precludes additional credit for FILM 2207 (no longer offered), FILM 2208 (no longer offered), FILM 2209 (no longer offered). Prerequisite(s): FILM 1101 or FILM 1120 or second-year standing; or permission of the Discipline. Lecture and screening three hours a week, seminar one hour a week.

FILM 2401 [0.5 credit]
Authorship in Film and Media
A detailed study of the themes, the characteristic style, development and influence of one or more directors. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2601 [0.5 credit]
Film Genres
This course examines questions of generic form, drawing examples from world cinema. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.
FILM 2606 [0.5 credit]
History of World Cinema I
Historical survey of world cinema primarily from 1895 to 1945, examining the forms, structures and stylistic conventions of various periods and nations.
Also listed as ENGL 2600.
Precludes additional credit for FILM 2608 and ENGL 2608 (no longer offered).
Prerequisite(s): FILM 1101 or FILM 1120, and second-year standing, or permission of the discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 2607 [0.5 credit]
History of World Cinema II
Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations.
Also listed as ENGL 2601.
Precludes additional credit for FILM 2608 and ENGL 2608 (no longer offered).
Prerequisite(s): FILM 2606 or ENGL 2600 or permission of the discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 2608 [0.5 credit]
History of World Cinema III
Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations.
Also listed as ENGL 2602.
Precludes additional credit for FILM 2609 and ENGL 2609 (no longer offered).
Prerequisite(s): FILM 2607 or ENGL 2601 or permission of the discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 2609 [0.5 credit]
The Video Game
Introduction to the video game as a popular media form, an emerging aesthetic, and a social and cultural practice. Topics include: history of video games; game form; game industry; narrative; art and design; interactivity; theories of play.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 2801 [0.5 credit]
Film and Media Practice I
Introduction to the basic principles of film and media practice. Emphasis may change from year to year, focusing alternately on narrative, experimental, animation or documentary techniques. This course is intended for Film Studies majors only.
Includes: Experiential Learning Activity
Prerequisite(s): FILM 1101 or FILM 1120.
Lecture/workshops four hours a week.

FILM 2809 [0.5 credit]
The Video Game
Introduction to the video game as a popular media form, an emerging aesthetic, and a social and cultural practice. Topics include: history of video games; game form; game industry; narrative; art and design; interactivity; theories of play.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 3105 [0.5 credit]
Questions of Documentary Practice
Theoretical implications of documentary film and documentary television practice.
Also listed as JOUR 3105.
Prerequisite(s): 1.0 credit in FILM at the 2000-level and third-year standing, or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 3206 [0.5 credit]
Topics in American Cinema
Studies in various aspects of American cinema with emphasis on historical and critical issues.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 3209 [0.5 credit]
Topics in Canadian Cinema
Studies in various aspects of Canadian cinema. Topics may vary from year to year.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 3301 [0.5 credit]
Topics in Cinema, Gender, and Sexuality
A study of selected topics in gender and cinema with emphasis on critical and historical questions.
Prerequisite(s): 1.0 credit in FILM at the 2000-level and third-year standing, or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 3402 [0.5 credit]
Film Music
The use of music in film, from the silent era to the present day. Techniques, styles and theory of film music through the examination of selected scenes.
Also listed as MUSI 3402.
Lectures three hours a week, screening two hours a week.

FILM 3506 [0.5 credit]
Topics in Film Theory
Building on the skills acquired in FILM 2000, this course provides a critical study of advanced film theories. Topics may include aesthetics, ideological criticism, film and philosophy, and theories of technology and historiography.
Precludes additional credit for FILM 3505 (no longer offered).
Prerequisite(s): FILM 2001 and FILM 2002 and third-year standing; or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.

FILM 3608 [0.5 credit]
Topics in Film History
Studies of aspects of the history of world cinema. Topics will vary from year to year and may include the examination of film movements, styles and genres, and/or comparative study of national, regional and/or world-wide trends.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.
FILM 3609 [0.5 credit]
African Cinema
Major figures and movements in African cinema around such categories as the colonial, the anti-colonial, the postcolonial, the diasporic, the continental, race, Afrofuturism, and world cinema, interrogating in the process the very category of “African cinema”. Also listed as AFRI 3609. Prerequisite(s): 1.0 credit in FILM and third year standing or permission of instructor. Lecture and screening three hours a week, lecture one hour a week.

FILM 3701 [0.5 credit]
Topics in Animation, Video, and Experimental Film
A study of selected topics in animation, video or experimental film. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3800 [0.5 credit]
Film/Video Archival or Curatorial Practice
Consideration of topics in film/video archival or curatorial practice, including questions related to cultural policy, exhibition, conservation, and interrelationship of media. Students are expected to bear all travel and other costs arising from required visits to local facilities. Includes: Experiential Learning Activity. Precludes additional credit for FILM 4800 (no longer offered). Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3801 [0.5 credit]
Film and Media Practice II
Practical and conceptual approaches to film studies from the point of view of film and media practice. Emphasis may change from year to year, focusing alternately on narrative, experimental, animation or documentary techniques. Includes: Experiential Learning Activity. Prerequisite(s): FILM 2001 and FILM 2801. Lecture/workshops four hours a week.

FILM 3808 [0.5 credit]
Cinema and Technology
The technological development of cinema. Topics may include advances in sound and colour processes, digital effects, exhibition technologies and new media. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3809 [0.5 credit]
Analyzing Digital Media
History, aesthetics, and theories of digital media and culture. Key concepts in digital media studies, including: digital cinema, interactive documentaries, viral videos, web series, emerging immersive platforms. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3810 [0.5 credit]
Sound in Film and Media
Questions related to sound in film and media such as: how is sound used to create narratives and emotions? How does sound affect our experience of actual and fictional worlds?. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3901 [0.5 credit]
Topics in Film Studies
Selected topics and issues not ordinarily treated in the third-year course program. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3902 [0.5 credit]
Screenwriting Workshop
An intermediate workshop involving regular assignments in writing for film. Includes: Experiential Learning Activity. Also listed as ENGL 3902. Prerequisite(s): a 2000-level creative writing workshop or permission of the instructor. Permission to register in this course requires the student to submit a portfolio. Instructions can be found at Carleton.ca/English. Workshop three hours a week.

FILM 4001 [0.5 credit]
Research and Critical Methodologies
Study of various methodologies for critical, theoretical and historical research in film studies. Precludes additional credit for FILM 4000 (no longer offered). Prerequisite(s): FILM 2002, 1.0 credit in FILM at the 3000-level, and fourth-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture two hours a week.
FILM 4002 [0.5 credit]  
**Topics in Moving Image Culture**  
Selected aspects of the audio-visual cultures of the late nineteenth and twentieth centuries.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.  
Seminar three hours a week.

FILM 4201 [0.5 credit]  
**Selected Topics in National Cinemas**  
A study of a selected topic in national cinema.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, seminar two hours a week.

FILM 4203 [0.5 credit]  
**Film Festivals and World Cinema**  
Theoretical and critical study of the film festival as a phenomenon shaping our understanding of film culture, institutions, history and forms. Issues examined may include festivals as sites of cultural legitimation; as spectacle; their political economy; curation/programming; case studies of film festivals around the world.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, seminar two hours a week.

FILM 4301 [0.5 credit]  
**Topics in Film and Philosophy**  
Selected topics in philosophical approaches to the study of film, and an examination of the relations between film theory and philosophical aesthetics.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.  
Also offered at the graduate level, with different requirements, as FILM 5109, for which additional credit is precluded.  
Lecture and screening three hours a week, seminar two hours a week.

FILM 4401 [0.5 credit]  
**Selected Topics in Film Authorship**  
A study of questions of authorship in the cinema, concentrating on one or more filmmakers.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, seminar two hours a week.

FILM 4501 [0.5 credit]  
**Selected Topics in Film Theory**  
A study of a selected topic in film theory.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, seminar two hours a week.

FILM 4805 [0.5 credit]  
**Practicum in Film and Film Studies**  
Practical experience through working on specific projects under the supervision of staff at a museum, gallery, archive, or production company in the Ottawa area. A maximum of 0.5 credit Film Studies practica courses may be offered in fulfilment of Film Studies requirements. Graded SAT/UNS.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing in Film Studies, a CGPA of 9.00 or higher in Film Studies, and permission of the Discipline.

FILM 4901 [0.5 credit]  
**Special Topic**  
Selected topics in film studies not ordinarily available in the regular course program. The choice of topic or topics will vary at least every two years and will be announced well in advance of the registration period.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.  
Screening three hours a week, seminar two hours a week.

FILM 4904 [0.5 credit]  
**Independent Study**  
For students who wish to study a specific topic. Proposed projects must be approved by the Program Committee. Written request outlining the project must be submitted by the first day of the term. An essay is the usual assignment.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing in Film Studies and a CGPA of 10.00 or higher in Film Studies. Unscheduled.

Food Science  
This section presents the requirements for programs in:  
- Food Science B.Sc. Honours  
- Minor in Food Science  

**Food Science B.Sc. Honours (20.0 credits)**

A. **Credits Included in the Major CGPA (9.5 credits)**

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<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>FOOD 1001 [0.5]</td>
<td>Introduction to Food Science</td>
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<td>FOOD 2001 [0.5]</td>
<td>Principles of Nutrition</td>
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<td>FOOD 2002 [0.5]</td>
<td>Food Processing</td>
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<td>FOOD 2003 [0.5]</td>
<td>Regulation of the Canadian Food Industry</td>
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<tr>
<td>FOOD 2004 [0.5]</td>
<td>Scientific Communication in Food Science</td>
<td></td>
</tr>
</tbody>
</table>
3. 0.5 credit from:
   BIOC 4708 [0.5] Principles of Toxicology
   FOOD 4301 [0.5] Food Toxicology

4. 1.0 credit from:
   FOOD 4905 [1.0] Food Science Honours Workshop
   FOOD 4907 [1.0] Food Science Honours Essay and Research Proposal
   FOOD 4908 [1.0] Food Science Research Project

5. 1.0 credits in:
   BIOC 2200 [0.5] Cellular Biochemistry
   BIOC 3101 [0.5] General Biochemistry I

B. Credits Not Included in the Major CGPA (10.5 credits)

6. 0.5 credit from:
   PHIL 1550 [0.5] Introduction to Ethics and Social Issues
   PHIL 2408 [0.5] Bioethics

7. 1.0 credit in:
   ECON 1001 [0.5] Introduction to Microeconomics
   ECON 1002 [0.5] Introduction to Macroeconomics

8. 0.5 credit from:
   0.5 credit in ECON at the 3000 level, or
   BUSI 2204 [0.5] Basic Marketing

9. 2.5 credits in:
   CHEM 1001 [0.5] General Chemistry I
   CHEM 1002 [0.5] General Chemistry II
   CHEM 2203 [0.5] Organic Chemistry I
   CHEM 2204 [0.5] Organic Chemistry II
   CHEM 2303 [0.5] Analytical Chemistry II

10. 2.0 credits in:
    BIOL 1103 [0.5] Foundations of Biology I
    BIOL 1104 [0.5] Foundations of Biology II
    BIOL 2104 [0.5] Introductory Genetics
    BIOL 2303 [0.5] Microbiology

11. 1.5 credits in:
    MATH 1007 [0.5] Elementary Calculus I
    STAT 2507 [0.5] Introduction to Statistical Modeling I
    STAT 2509 [0.5] Introduction to Statistical Modeling II

12. 0.5 credit in:
    PHYS 1007 [0.5] Elementary University Physics I

13. 0.5 credit from:
    BIOC 3102 [0.5] General Biochemistry II

14. 0.5 credits from:

Courses listed in but not used to fulfill item 13 above, one of:
   BIOC 3008 [0.5] Bioinformatics
   BIOC 3102 [0.5] General Biochemistry II
   BIOC 3202 [0.5] Biophysical Techniques and Applications
   BIOC 3203 [0.5] Biochemical Pharmacology
   BIOL 4004 [0.5] Industrial Biochemistry
   BIOL 4202 [0.5] Mutagenesis and DNA Repair
   BIOL 3104 [0.5] Molecular Genetics
   BIOL 4106 [0.5] Advances in Molecular Biology
   CHEM 3201 [0.5] Advanced Organic Chemistry I

15. 1.0 credits in free electives

Total Credits

Minor in Food Science (4.0 credits)

The Minor in Food Science is available to degree students registered in programs other than the Food Science B.Sc. Honours program. Note that there are several prerequisites in Chemistry, Biochemistry and Math that may also need to be satisfied.

Requirements

1. 0.5 credit in:
   FOOD 1001 [0.5] Introduction to Food Science

2. 0.5 credit from:
   FOOD 2001 [0.5] Principles of Nutrition
   FOOD 2002 [0.5] Food Processing

3. 3.0 credits in FOOD at 2000 level or higher

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.
Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

**Declared and Undeclared Students**

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

**Change of Program within the B.Sc. Degree**

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

**Experimental Science Requirement**

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

### Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biochemistry</strong></td>
<td>BIOC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td></td>
<td>BIOC 4001 [0.5]</td>
<td>Methods in Biochemistry</td>
</tr>
<tr>
<td></td>
<td>BIOC 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
</tr>
<tr>
<td><strong>Biology</strong></td>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td></td>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td></td>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td></td>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td></td>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td></td>
<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td></td>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
<tr>
<td><strong>Earth Sciences</strong></td>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td></td>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
</tr>
<tr>
<td></td>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td></td>
<td>ERTH 2404 [0.5]</td>
<td>Engineering Geoscience</td>
</tr>
<tr>
<td></td>
<td>ERTH 2802 [0.5]</td>
<td>Field Geology I</td>
</tr>
<tr>
<td></td>
<td>ERTH 3111 [0.5]</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
</tr>
<tr>
<td></td>
<td>ERTH 3112 [0.5]</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td></td>
<td>ERTH 3204 [0.5]</td>
<td>Mineral Deposits</td>
</tr>
<tr>
<td></td>
<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
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<tr>
<td></td>
<td>ERTH 3806 [0.5]</td>
<td>Structural Geology</td>
</tr>
<tr>
<td><strong>Food Sciences</strong></td>
<td>FOOD 3001 [0.5]</td>
<td>Food Chemistry</td>
</tr>
<tr>
<td></td>
<td>FOOD 3002 [0.5]</td>
<td>Food Analysis</td>
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<tr>
<td></td>
<td>FOOD 3005 [0.5]</td>
<td>Food Microbiology</td>
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<tr>
<td><strong>Geography</strong></td>
<td>GEOG 1010 [0.5]</td>
<td>Global Environmental Systems</td>
</tr>
<tr>
<td></td>
<td>GEOG 3108 [0.5]</td>
<td>Soil Properties</td>
</tr>
<tr>
<td><strong>Neuroscience</strong></td>
<td>NEUR 3206 [0.5]</td>
<td>Sensory and Motor Neuroscience</td>
</tr>
<tr>
<td></td>
<td>NEUR 3207 [0.5]</td>
<td>Systems Neuroscience</td>
</tr>
<tr>
<td></td>
<td>NEUR 4600 [0.5]</td>
<td>Advanced Lab in Neuroanatomy</td>
</tr>
<tr>
<td><strong>Physics</strong></td>
<td>PHYS 1001 [0.5]</td>
<td>Foundations of Physics I</td>
</tr>
<tr>
<td></td>
<td>PHYS 1002 [0.5]</td>
<td>Foundations of Physics II</td>
</tr>
<tr>
<td></td>
<td>PHYS 1003 [0.5]</td>
<td>Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td></td>
<td>PHYS 1004 [0.5]</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td></td>
<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
</tr>
</tbody>
</table>
PHYS 1008 [0.5] Elementary University Physics II
PHYS 2202 [0.5] Wave Motion and Optics
PHYS 2604 [0.5] Modern Physics I
PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5] Modern Physics II
PHYS 3608 [0.5] Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses
GEOG 1010 [0.5] Global Environmental Systems
GEOG 2006 [0.5] Introduction to Quantitative Research
GEOG 2013 [0.5] Weather and Water
GEOG 2014 [0.5] The Earth’s Surface
GEOG 3003 [0.5] Quantitative Geography
GEOG 3010 [0.5] Field Methods in Physical Geography
GEOG 3102 [0.5] Geomorphology
GEOG 3103 [0.5] Watershed Hydrology
GEOG 3104 [0.5] Principles of Biogeography
GEOG 3105 [0.5] Climate and Atmospheric Change
GEOG 3106 [0.5] Aquatic Science and Management
GEOG 3108 [0.5] Soil Properties
GEOG 4000 [0.5] Field Studies
GEOG 4005 [0.5] Directed Studies in Geography
GEOG 4013 [0.5] Cold Region Hydrology
GEOG 4017 [0.5] Global Biogeochemical Cycles
GEOG 4101 [0.5] Two Million Years of Environmental Change
GEOG 4103 [0.5] Water Resources Engineering
GEOG 4104 [0.5] Microclimatology
GEOG 4108 [0.5] Permafrost

Science Psychology Courses
PSYC 2001 [0.5] Introduction to Research Methods in Psychology
PSYC 2002 [0.5] Introduction to Statistics in Psychology
PSYC 2700 [0.5] Introduction to Cognitive Psychology
PSYC 3000 [1.0] Design and Analysis in Psychological Research
PSYC 3506 [0.5] Cognitive Development
PSYC 3700 [1.0] Cognition (Honours Seminar)
PSYC 3702 [0.5] Perception
PSYC 2307 [0.5] Human Neuropsychology I
PSYC 3307 [0.5] Human Neuropsychology II

Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student’s major discipline, and is chosen from the following:

PHYS 1901
PHYS 1902
PHYS 1905
PHYS 2903

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

Science Faculty Electives
Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.
Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)
All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above), NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives
Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 4810</td>
<td>Education Research in Biology</td>
</tr>
<tr>
<td>CHEM 1003</td>
<td>The Chemistry of Food, Health and Drugs</td>
</tr>
<tr>
<td>CHEM 1004</td>
<td>Drugs and the Human Body</td>
</tr>
<tr>
<td>CHEM 1007</td>
<td>Chemistry of Art and Artifacts</td>
</tr>
<tr>
<td>ERTH 1010</td>
<td>Our Dynamic Planet Earth</td>
</tr>
<tr>
<td>ERTH 1011</td>
<td>Evolution of the Earth</td>
</tr>
<tr>
<td>ERTH 2415</td>
<td>Natural Disasters</td>
</tr>
<tr>
<td>ISCI 1001</td>
<td>Introduction to the Environment</td>
</tr>
<tr>
<td>ISCI 2000</td>
<td>Natural Laws</td>
</tr>
<tr>
<td>ISCI 2002</td>
<td>Human Impacts on the Environment</td>
</tr>
<tr>
<td>MATH 0107</td>
<td>Algebra and Geometry</td>
</tr>
<tr>
<td>PHYS 1901</td>
<td>Planetary Astronomy</td>
</tr>
<tr>
<td>PHYS 1902</td>
<td>From our Star to the Cosmos</td>
</tr>
<tr>
<td>PHYS 1905</td>
<td>Physics Behind Everyday Life</td>
</tr>
<tr>
<td>PHYS 2903</td>
<td>Physics Towards the Future</td>
</tr>
</tbody>
</table>

Prohibited Courses
The following courses are not acceptable for credit in any B.Sc. program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1001</td>
<td>Introduction to Computational Thinking for Arts and Social Science Students</td>
</tr>
<tr>
<td>MATH 0005</td>
<td>Precalculus: Functions and Graphs</td>
</tr>
<tr>
<td>MATH 0006</td>
<td>Precalculus: Trigonometric Functions and Complex Numbers</td>
</tr>
<tr>
<td>MATH 1009</td>
<td>Mathematics for Business</td>
</tr>
<tr>
<td>MATH 1119</td>
<td>Linear Algebra: with Applications to Business</td>
</tr>
<tr>
<td>MATH 1401</td>
<td>Elementary Mathematics for Economics I</td>
</tr>
<tr>
<td>MATH 1402</td>
<td>Elementary Mathematics for Economics II</td>
</tr>
</tbody>
</table>

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.
summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit.

Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Food Science: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Science Honours in Food Science;
2. Obtained and maintained a major CGPA of 9.0 or higher and an overall CGPA of 7.5 or higher in the first three years of academic study;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term, 1.0 credit from FOOD 3001, FOOD 3002, FOOD 3005;
5. Successfully completed, by the start date of the first work term, an additional 0.5 credit in FOOD at the 3000- or 4000-level, not already counted in Item 4

B.Sc. Honours Food Science students must successfully complete three (3) work terms to obtain the co-op designation.

**Work Term Course:** FOOD 3999

**Work/Study Pattern:**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Term</th>
<th>Pattern Term</th>
<th>Year 2</th>
<th>Pattern Term</th>
<th>Year 3</th>
<th>Pattern Term</th>
<th>Year 4</th>
<th>Pattern Term</th>
<th>Year 5</th>
<th>Pattern Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Fall</td>
<td>S</td>
<td>Fall</td>
<td>S</td>
<td>Fall</td>
<td>W/S</td>
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<tr>
<td>Winter</td>
<td>Winter</td>
<td>S</td>
<td>Winter</td>
<td>S</td>
<td>Winter</td>
<td>W/S</td>
<td>Winter</td>
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</tr>
<tr>
<td>Summer</td>
<td>Summer</td>
<td>S</td>
<td>Summer</td>
<td>O/W</td>
<td>Summer</td>
<td>O/W</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend**
- **S:** Study
- **W:** Work
- **O:** Optional
- * indicates recommended work study pattern
- ** indicates student finds own employer for this work-term.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degrees**
- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

**Admission Requirements**

**B. Sc. Honours Program**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

**Specific Honours Admission Requirements**

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

**Advanced Standing**

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**B.Sc. Major Program**

**B.Sc. Program**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall
CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Food Science (FOOD) Courses

FOOD 1001 [0.5 credit]
Introduction to Food Science
Overview of the food industry. Production, processing, product development, packaging, chemistry, analysis, microbiology. Elements risk assessment, policy making and regulation.
Lectures three hours a week.

FOOD 2001 [0.5 credit]
Principles of Nutrition
Prerequisite(s): CHEM 1002, BIOL 1103.
Lectures three hours a week.

FOOD 2002 [0.5 credit]
Food Processing
Principles of major techniques used in food processing and preservation. Processing of specific food groups including cereals, oilseeds, dairy, beverages and frozen foods. Effects of processing on physico-chemical, rheological, and sensory characteristics. Role of research and development in food industry.
Prerequisite(s): FOOD 1001.
Lectures three hours a week.

FOOD 2003 [0.5 credit]
Regulation of the Canadian Food Industry
Regulation of the Canadian food industry including regulators, regulatory powers, the process of enacting laws/regulation and food safety requirements. Food composition, standardization, advertising, labeling, packaging, ingredients, additives, and fortification requirements. Inspection, enforcement and compliance powers and policies.
Prerequisite(s): Second year standing.
Lectures three hours per week.

FOOD 2004 [0.5 credit]
Scientific Communication in Food Science
Principles of effective scientific communication for scientific and non-scientific audiences. Applicable to laboratory reports, literature reviews, posters, presentations, and briefing notes.
Includes: Experiential Learning Activity
Prerequisite(s): FOOD 1001 and second-year standing in Food Science or Chemistry.
Workshop four hours a week.

FOOD 3001 [0.5 credit]
Food Chemistry
Chemistry of the major components of foods such as proteins, lipids, carbohydrates and of the minor components such as enzymes, vitamins and various additives and their relationships to food stability and degradation.
Includes: Experiential Learning Activity
Prerequisite(s): FOOD 1001, FOOD 2001, CHEM 2204, BIOC 2200.
Lectures three hours a week and laboratory three hours a week.

FOOD 3002 [0.5 credit]
Food Analysis
In-depth principles and practices of food proximate analysis. Introductory concepts of food adulteration and detection. Major techniques such as chromatography, colorimetry, spectroscopy, rheology.
Includes: Experiential Learning Activity
Prerequisite(s): FOOD 1001, FOOD 2001, FOOD 3001.
Lectures three hours a week, laboratory three hours a week.

FOOD 3003 [0.5 credit]
Food Packaging and Shelf Life
An introduction to the materials used for food packaging, including their chemical and physical characteristics. Interactions of these materials with food products, and their effects on shelf life of food.
Prerequisite(s): FOOD 2002.
Lectures three hours a week.
FOOD 3004 [0.5 credit]
Food Engineering
Principles of food engineering. Unit operation in food processing, heat and mass transfer, material balances, fluid mechanics.
Prerequisite(s): FOOD 2002 and MATH 1007.
Lectures three hours a week.

FOOD 3005 [0.5 credit]
Food Microbiology
Foodborne diseases, microbial growth and survival, food spoilage, food fermentation. Techniques for detecting and quantifying microorganisms in foods.
Includes: Experiential Learning Activity
Prerequisite(s): FOOD 1001, FOOD 2001, BIOL 2303.
Lectures three hours a week, laboratory three hours a week.

FOOD 3999 [0.0 credit]
Co-operative Work Term
Provides practical experience for students enrolled in the Co-operative option. Students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): Registration in the Food Science Co-operative Education option and permission of the Department.
Work term.

FOOD 4001 [0.5 credit]
Food Quality Control
Factors affecting quality in manufacturing and processing of foods and principles of quality control and quality assurance. Sampling plans and statistical methods. Applications of physical, chemical, biological and microbiological tests in quality control. Quality systems and standards.
Prerequisite(s): FOOD 2002, FOOD 2003, and third or fourth year standing.
Also offered at the graduate level, with different requirements, as FOOD 5101, for which additional credit is precluded.
Lectures three hours a week.

FOOD 4002 [0.5 credit]
Analysis of Food Contaminants
Official methods to identify food contaminants and adulterated foods. Includes agricultural chemicals, veterinary drugs, toxins, metals, and allergens. Interpretation of results in the context of current Canadian and international food safety regulations.
Includes: Experiential Learning Activity
Prerequisite(s): BIOC 3101 or CHEM 3205 or CHEM 3305, and third or fourth year standing.
Laboratory four hours per week, tutorial one hour a week.

FOOD 4102 [0.5 credit]
Current Issues in Canadian Food Governance, Regulation and Policy
Focus on the ever-changing and evolving issues in Canadian food governance, regulation and policy. Topical food safety, governance, policies, enforcement, trade and import/export issues and developments.
Prerequisite(s): FOOD 2003, and third or fourth year standing.
Lectures three hours a week.

FOOD 4103 [0.5 credit]
Food Safety Risk Assessment
The role of risk management in providing science-based approaches to solving food safety problems. Risk management models and practical applications in critical risk management. An examination of actual risk assessments. Risk communication is addressed.
Prerequisite(s): BIOC 3101, and third or fourth-year standing.
Lectures three hours a week.

FOOD 4201 [0.5 credit]
Advanced Nutrition and Metabolism
Metabolism of macronutrients in the human body. Detailed catabolic and anabolic reactions of carbohydrates, lipids and proteins. Regulatory control points in healthy and diseased states. Discussion of the literature pertaining to nutrition, metabolism and chronic disease.
Prerequisite(s): FOOD 2001, BIOC 3101 and fourth year standing.
Also offered at the graduate level, with different requirements, as FOOD 5101, for which additional credit is precluded.
Lectures three hours a week.

FOOD 4202 [0.5 credit]
Micronutrients and Health
Animal and plant-based sources of micronutrients. Metabolism of vitamins and minerals in the human body and associated diseases throughout the life cycle. Micronutrient supplementation to promote human health.
Prerequisite(s): BIOC 2200 or BIOL 2200 and third or fourth year standing.
Lectures three hours a week.

FOOD 4203 [0.5 credit]
Functional Foods and Natural Health Products
Study of the bioactive components of functional foods and natural health products, for the improvement of health and nutrition. Sources and chemistry of bioactives, mechanisms of actions, process technology, efficacy and safety. Role of research and development in industry in commercialization of new products.
Prerequisite(s): BIOC 2200 or BIOL 2200 or BIOL 2201, and third or fourth year standing.
Also offered at the graduate level, with different requirements, as FOOD 5105, for which additional credit is precluded.
Lectures three hours a week.
FOOD 4301 [0.5 credit]
Food Toxicology
Principles of toxicology as they apply to endogenous plant toxicants, endogenous animal poisons, mycotoxins, pesticide residues, veterinary drugs, food additives, heavy metals, and toxicants produced as a result of processing. Prerequisite(s): BIOC 3101, FOOD 3001 and fourth-year standing in Food Science. Lectures three hours a week.

FOOD 4905 [1.0 credit]
Food Science Honours Workshop
Active learning in areas that include information literacy, critical evaluation of scientific literature, written and oral communication, evaluation and interpretation of results, statistics and data management. Emphasizes transferable skills that are most appropriate for non-research career paths. Includes: Experiential Learning Activity
Precludes additional credit for FOOD 4907, FOOD 4908. Prerequisite(s): Fourth-year standing in Food Science and a minimum of 1.5 credits in FOOD at the 3000 level. Workshop three hours a week.

FOOD 4907 [1.0 credit]
Food Science Honours Essay and Research Proposal
Students conduct an independent research study using library resources, and prepare a critical review and study proposal on a topic approved by a faculty supervisor. A written report and an oral poster presentation of the work are required before a grade can be assigned. Includes: Experiential Learning Activity
Precludes additional credit for FOOD 4905, FOOD 4908. Prerequisite(s): Fourth-year standing in the Food Science program, a minimum of 1.5 credits in FOOD at the 3000 level, minimum Major CGPA of 8.0, and permission of the department.

FOOD 4908 [1.0 credit]
Food Science Research Project
Students in Food Science carry out a research project under the direction of a faculty member. A written report and an oral presentation of the work are required before a grade can be assigned. Includes: Experiential Learning Activity
Precludes additional credit for FOOD 4905, FOOD 4907, CHEM 4907 and CHEM 4908. Prerequisite(s): Fourth-year standing in the Food Science program, a minimum of 1.5 credits in FOOD at the 3000 level, minimum Major CGPA of 8.0, and permission of the department. Laboratory and associated work equivalent to at least eight hours per week for two terms.

French
This section presents the requirements for programs in:
• French B.A. Honours
• French B.A. Combined Honours
• French B.A.

• Specialization in French and Francophone Studies B.G.In.S. Honours
• Stream in French and Francophone Studies B.G.In.S.
• Minor in French
• Minor in Quebec Studies

Program Requirements
French
B.A. Honours (20.0 credits)
A. Credits Included in the Major CGPA (11.0 credits)
1. 1.0 credit from:
   - FREN 1100 [1.0] French 3
   - FREN 1110 [1.0] French 3: Writing
   - FYSM 1408 [1.0] French on the World Stage
2. 1.5 credit in:
   - FREN 2110 [1.0] French 4: Writing
   - FREN 2701 [0.5] Travaux pratiques en français oral
3. 1.0 credit in:
   - FREN 2202 [0.5] Introduction aux études littéraires 1
   - FREN 2203 [0.5] Introduction aux études littéraires 2
4. 1.0 credit in:
   - FREN 2401 [1.0] Introduction à la linguistique française
5. 1.0 credit in:
   - FREN 3050 [0.5] Compétences critiques
   - FREN 3060 [0.5] Perfectionnement de la grammaire par la pratique
6. 2.5 credits at the 3000-level in one of the following series:
   - a. Literature: FREN 3200 series of courses
   - b. Linguistics: FREN 3400 series of courses
7. 0.5 credit in:
   - FREN 4060 [0.5] Projet de recherche supervisé
8. 1.5 credits in FREN at the 4000-level
9. 1.0 credits in FREN at the 3000-level or higher
B. Credits Not Included in the Major CGPA (9.0 credits)
10. 7.5 credits in electives not in FREN
11. 1.5 credits in free electives

Total Credits
20.0
Notes:
1. Students exempted from either one of the courses in Item 1 or 2 above must replace it with another FREN course.

French
B.A. Combined Honours (20.0 credits)
A. Credits Included in the Major CGPA (7.5 credits)
1. 1.0 credit from:
   - FREN 1100 [1.0] French 3
   - FREN 1110 [1.0] French 3: Writing
   - FYSM 1408 [1.0] French on the World Stage
2. 1.5 credit from:
   - FREN 2100 [1.0] French 4
   - FREN 2110 [1.0] French 4: Writing
   - FREN 2701 [0.5] Travaux pratiques en français oral
3. 1.0 credit in:
   - FREN 2202 [0.5] Introduction aux études littéraires 1
### French

#### B.A. (15.0 credits)

**A. Credits included in the Major CGPA (6.5 credits)**

1. **1.0 credit from:**
   - FREN 1100 [1.0] French 3
   - FREN 1110 [1.0] French 3: Writing
   - FYSM 1408 [1.0] French on the World Stage

2. **1.5 credits in:**
   - FREN 2110 [1.0] French 4: Writing
   - FREN 2701 [0.5] Travaux pratiques en français oral

3. **1.0 credit in:**
   - FREN 2202 [0.5] Introduction aux études littéraires 1

4. **1.0 credit in:**
   - FREN 2203 [0.5] Introduction aux études littéraires 2

5. **1.0 credits at the 3000-level in one of the following:**
   - a. Literature: FREN 3200 series of courses
   - b. Linguistics: FREN 3400 series of courses

6. **1.0 credit in FREN at the 3000-level or higher**

**B. Credits Not included in the Major CGPA (8.5 credits)**

7. **6.0 credits in electives not in FREN**

8. **2.5 credits in free electives**

**Total Credits** 15.0

**Note:** Students exempted from either one of the courses in Item 1 or 2 above must replace it with another FREN course.

### Specialization in French and Francophone Studies

#### B.G.In.S. Honours (20.0 credits)

**A. Credits included in the Major CGPA (12.0 credits)**

1. **4.5 credits in Core Courses**
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture

2. **0.0 credit in:** International Experience Requirement Preparation
   - GINS 1300 [0.0] International Experience Requirement Preparation

3. **7.5 credits in the Specialization**
   - a. 3.0 credits in Foundations
   - FYSM 1408 [1.0] French on the World Stage
   - FREN 2202 [0.5] Introduction aux études littéraires 1
   - FREN 2203 [0.5] Introduction aux études littéraires 2
   - FREN 2401 [1.0] Introduction à la linguistique française
   - b. 0.5 credits in Methods
   - FREN 3050 [0.5] Compétences critiques
   - c. 1.5 credits from: French and Francophone Studies at the 3000-level
   - FREN 3213 [0.5] Du Baroque aux Lumières
   - FREN 3214 [0.5] Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950
   - FREN 3215 [0.5] Les ères du soupçon : contemporanéités de la littérature
   - FREN 3414 [0.5] Sociolinguistique du français
   - FREN 3415 [0.5] Histoire du français
   - d. 1.0 credit in French and Francophone Studies - International Experience
   - 1.0 credit in approved courses at the 3000-level or above taken in French, on exchange or a letter of permission, at a French-language university abroad
   - e. 1.5 credits from: French and Francophone Studies at the 4000-level
   - FREN 4212 [0.5] Littératures francophones
   - FREN 4213 [0.5] Littérature québécoise et canadienne d’expression française
   - FREN 4214 [0.5] Genre et mouvement
   - FREN 4215 [0.5] Problématiques contemporaines
   - FREN 4300 [0.5] Experiential learning in French and Francophone studies
   - FREN 4412 [0.5] Diversité du français
   - FREN 4413 [0.5] Diachronie du français
   - FREN 4414 [0.5] Analyse du français
   - FREN 4415 [0.5] Variation du français

4. **8.0 credits in:** Free Electives

5. **Additional Requirements**
   - The International Experience Requirement must be met through an international exchange or a letter of permission (see Item 3.d).
6. To satisfy the Language Requirement, students must complete FREN 2100 [1.0] French 4, FREN 3701 [0.5] Français oral and FREN 3702 [0.5] Français écrit, or their equivalent.

### Total Credits

**20.0**

### Stream in French and Francophone Studies

**B.G.In.S. (15.0 credits)**

#### A. Credits included in the Major CGPA (8.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GINS 1000</td>
<td>Global History</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 1010</td>
<td>International Law and Politics</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 1020</td>
<td>Ethnography, Globalization and Culture</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 2000</td>
<td>Ethics and Globalization</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 2010</td>
<td>Globalization and International Economic Issues</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 2020</td>
<td>Global Literatures</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 3010</td>
<td>Global and International Theory</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 3020</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
<td>0.5</td>
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</tbody>
</table>

#### B. Credits Not Included in the Major CGPA (7.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>FREN 2203</td>
<td>Introduction aux études littéraires 1</td>
<td>0.5</td>
</tr>
<tr>
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<td>Introduction aux études littéraires 2</td>
<td>0.5</td>
</tr>
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</tr>
<tr>
<td>FREN 3415</td>
<td>Histoire du français</td>
<td>0.5</td>
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</tbody>
</table>

#### C. Additional Requirements

4. To satisfy the Language Requirement, students must complete FREN 2100 [1.0] French 4, or its equivalent.

### Total Credits

**15.0**

### Minor in Quebec Studies (4.0 credits)

Open to all undergraduate degree students. Additional courses containing Quebec content may apply to the minor if approved by the Advisor in advance.

#### Requirements:

1. **2.0 credits in:**
   - CDNS 2510 [0.5] Introduction to Québec Society
   - FINS 2510 [0.5] (English version)

2. **1.5 credits in approved electives (see below)**
3. **0.5 credit at the 3000-level or above in approved electives (see below)**

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

### Total Credits

**4.0**

### Approved Electives

#### Art History
- ARTH 2002 [0.5] Canadian Historical Art

#### Canadian Studies
- CDNS 2300 [0.5] Critical Nationalism
- CDNS 4510 [0.5] Québec Studies

#### Film Studies
- FILM 3209 [0.5] Topics in Canadian Cinema

#### History
- HIST 2301 [0.5] Quebec Since 1800
- HIST 3206 [0.5] Place and Politics in Canadian History
- HIST 4303 [0.5] Society and Culture in Canada
- HIST 4304 [1.0] Canada: Politics & Society

#### Political Science
- PSCI 4005 [0.5] Canadian Federalism
- PSCI 4009 [0.5] Quebec Politics

### French Proficiency Examination

English-speaking students who wish to graduate with a B.A. (15 credit) or B.A. Honours in French, a B.A. Combined Honours in French, and a B.J. Combined Honours in French are normally required to pass an oral examination testing their proficiency in spoken French. The examination normally takes place during the second year for students in the 15 credit program and during the third year for students in the B.A. Honours. Students...
have the option of repeating the examination during the following academic year.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design


Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLT, IDES, IMD, ICRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences


Subject codes: ANTH, BUSI, CGSC, CRCA, ECON, ENST, GEOF, GOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines.
Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may apply to the Registrar’s Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfill the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Co-operative Education**

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

**Undergraduate Co-operative Education Policy**

**Admission Requirements**

Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

**Employment**

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student’s responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.
Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours French: Co-op Admission and Continuation Requirements
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours in French;
2. Obtained and maintained an 8.0 CGPA overall with a major CGPA of 9.0;
3. Have obtained third-year standing by the first work term;
4. Successfully completed before beginning first work term: FREN 2401; FREN 2202 and FREN 2203; and at least one 3000-level course in French.

490 The Academic Year (Graduate and Undergraduate Studies)
Students in B.A. Honours French must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course:  FREN 3999

Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

French Interdisciplinary Studies (FINS) Courses

These courses are intended to meet the needs of a broad range of students who are interested in expanding their knowledge of the French-language presence in other disciplines, or in improving their passive knowledge of written and spoken French (reading and listening) with a view to applying this knowledge in other disciplines.

Some FINS courses are offered with English as the language of instruction.

French Placement for Language Students

Students who have not previously taken a course in the French Department must complete the Placement Test on Carleton Central before registering as per instructions received through their Carleton e-mail account. Students should note that they cannot go backward in a sequence of levels in language courses. Students desiring a French credit to satisfy the language requirement of their department or school should consult that department or school.

FINS 2105 [0.5 credit]
French Reading I
Development of reading skills, especially relating to academic texts. Basic French grammar and vocabulary. Given in English. Open to beginners. No auditors. Precludes additional credit for FREN 1006. Prerequisite(s): permission of the Department. Offered online. Equivalent to a weekly three-hour course, available all week.

FINS 2205 [0.5 credit]
Oral Comprehension I
Training in basic comprehension of spoken French, through the study of selected and edited video and audio material. Oral documents in French; analyses, discussion, reporting and testing in English. No auditors. Prerequisite(s): permission of the Department.
FINS 2510 [0.5 credit]
Introduction to Québec Society (English version)
This course surveys geographical, historical, demographic, cultural, political and social developments in Québec, relations with English Canada and debates on identity and nationalism. This course is also offered in French as CDNS 2511/FINS 2511.
Also listed as CDNS 2510.
Precludes additional credit for CDNS 2511/FINS 2511.
Prerequisite(s): second-year standing or permission of the Department.
Lectures/groups three hours a week.

FINS 2511 [0.5 credit]
Introduction à la société et à la culture québécoises (version française)
Ce cours exclusivement en ligne permettra de découvrir et d'analyser des référents dominants de la trame historique du Québec de même que les débats entourant l'identité et le nationalisme et les relations avec le Canada anglais.
Also listed as CDNS 2510/FINS 2510 (in English), CDNS 2511.
Precludes additional credit for CDNS 2510 and FINS 2510.
Prerequisite(s): niveau de deuxième année ou permission de L'École d'études canadiennes.
Exclusivement en ligne. Équivalent d'un cours de trois heures par semaine, accessible toute la semaine.

FINS 3105 [0.5 credit]
French Reading II
Reading knowledge for academic purposes. Advanced reading strategies. Individual reading in the student's specialization. Given in English. No auditors.
Precludes additional credit for FREN 1006.
Prerequisite(s): FINS 2105 or permission of the Department.
Offered online. Equivalent to a weekly three-hour course, available all week.

FINS 3205 [0.5 credit]
Oral Comprehension II
Advanced training and practice in the comprehension of authentic oral materials in French. Individual assignments in the student's specialization. Oral documents in French; analysis, discussion, reporting and testing in English and French. No auditors.
Prerequisite(s): FINS 2205 or permission of the Department.

FINS 3405 [0.5 credit]
French for Special or Professional Purposes I
Topics may vary from year to year. Consult the Web site.
Prerequisite(s): permission of the Department.

FINS 3406 [0.5 credit]
French for Special or Professional Purposes II
Topics may vary from year to year. Consult the Web site.
Prerequisite(s): permission of the Department.

FINS 3407 [0.5 credit]
French for Special or Professional Purposes III
Topics may vary from year to year. Consult the Web site.
Prerequisite(s): permission of the Department.

FINS 3550 [0.5 credit]
Interfaces between English and French Canadian Cultures
Exploration of intercultural encounters between French and English Canadians in political, popular and "official" cultures, through an examination of media, art, music, literature, cinema and the built environment.
Also listed as CDNS 3550.
Precludes additional credit for FINS 2500 and CDNS 2500.
Prerequisite(s): third-year standing or permission of the Department.
Seminar three hours a week.

FINS 3801 [0.5 credit]
Selected Topics in French A
Students may take a third-year course offered in the Department of French while submitting course work in English. This course does not count towards any degree program in French.
Prerequisite(s): third-year standing and permission of the Department.
Hours to be determined.

FINS 4510 [0.5 credit]
Québec Studies
Advanced seminar focusing on selected aspects of Québec history, society, culture and/or politics.
Also listed as CDNS 4510.
Precludes additional credit for CDNS 3510 or FINS 3510.
Prerequisite(s): fourth-year standing and CDNS 3500, FINS 3500 or permission of the Department.
Seminar three hours a week.

FINS 4801 [0.5 credit]
Selected Topics in French A
Students may take a fourth- or fifth-year special topic seminar offered in the Department of French while submitting written work in English. This course does not count towards credit in any degree program in French.
Prerequisite(s): fourth-year standing or permission of the Department.
Hours to be determined.

FINS 4802 [0.5 credit]
Selected Topics in French B
Students may take a fourth- or fifth-year special topic seminar offered in the Department of French while submitting written work in English. This course does not count towards credit in any degree program in French.
Prerequisite(s): fourth-year standing or permission of the Department.
Hours to be determined.

French (FREN) Courses
French Placement for Language Students
Students who have not previously taken a course in the French Department must complete the Placement Test on Carleton Central before registering, as per instructions received through their Carleton e-mail account. Students should note that they cannot go backward in a sequence of levels in language courses.

Students desiring a French credit to satisfy the language requirement of their department or school should consult that department or school.

FREN 1001 [1.0 credit]
French 1
This course is designed for absolute beginners in the language. Classes use audio-visual methods, and emphasis is given to the spoken language. Introduction to reading and writing. Compulsory attendance. Limited enrolment. No auditors. Oral interaction required.
Prerequisite(s): placement test on Carleton Central before registering.
Lecture three hours a week.

FREN 1002 [1.0 credit]
French 2
Taught in French for students who have had exposure to French but who have difficulty using it in day-to-day communication. Emphasis on oral expression and comprehension; development of reading and writing skills. Oral practice, presentations, interviews, cultural activities, grammar. Compulsory attendance, participation. Oral interaction required.
Prerequisite(s): Grade of C or higher in FREN 1001 or placement test on Carleton Central before registering.
Lecture three hours a week.

FREN 1100 [1.0 credit]
French 3
Taught in French. Emphasis on speaking, listening, reading and writing skills. Oral presentations, discussions, interviews, reading of novels and magazine articles, listening activities, grammar exercises, compositions. Attendance and participation are compulsory. Limited enrolment. No auditors. Oral interaction required.
Precludes additional credit for FREN 1110.
Prerequisite(s): Grade of C or higher in FREN 1002 or placement test on Carleton Central before registering.
Lecture three hours a week.

FREN 2100 [1.0 credit]
French 4
Taught in French. For non-francophone students. Advanced speaking, listening, reading and writing skills. Advanced level reading from various sources, including literary texts. Grammar exercises, essays, oral presentations. Attendance and participation are compulsory. Limited enrolment. No auditors. Oral interaction required.
Precludes additional credit for FREN 2110.
Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering.
Cours trois heures par semaine.

FREN 2110 [1.0 credit]
French 4: Writing
Precludes additional credit for FREN 2100.
Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering. First week: compulsory placement. Limited enrolment. No auditors.
Cours trois heures par semaine.

FREN 2202 [0.5 credit]
Introduction aux études littéraires 1
Survol historique des littératures d'expression française : principaux auteurs, grands mouvements, évolution des genres. Initiation aux méthodes et notions d'analyse littéraire.
Precludes additional credit for FREN 2201.
Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.
Cours trois heures par semaine.

FREN 2203 [0.5 credit]
Introduction aux études littéraires 2
Survol historique des littératures d'expression française au Québec et au Canada : principaux auteurs, grands mouvements, évolution des genres. Initiation aux méthodes et notions d'analyse littéraire.
Precludes additional credit for FREN 2201.
Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.
Cours trois heures par semaine.
FREN 2401 [1.0 credit]
Introduction à la linguistique française
Étude de la structure et du fonctionnement du système linguistique à travers l'analyse de données du français (de France et du Canada). La construction du sens, des sons au discours; code oral et écrit.
Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.
Cours trois heures par semaine.

FREN 2701 [0.5 credit]
Travaux pratiques en français oral
Travaux pratiques pour développer l’aisance et la fluidité dans l’expression orale. This course is not suitable for francophones.
Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering.
Cours trois heures par semaine.

FREN 3050 [0.5 credit]
Compétences critiques
Initiation aux techniques et pratiques de la réflexion universitaire : documentation (bibliothèque, bases de données, bibliographies critiques), lecture (analyse, synthèse et évaluation critique de textes de savoir) et réflexion (cadre théorique, méthode d’analyse, pratique du discours raisonné).
Prerequisite(s): FREN 2202, FREN 2203 and FREN 2401, or permission of the Department.
Cours trois heures par semaine.

FREN 3060 [0.5 credit]
Perfectionnement de la grammaire par la pratique
Analyse et pratique réfléchie des formes de la grammaire dans le discours : Structures des phrases, marques d’accord, concordance des temps, prépositions et compléments, homonymie et homographie, faux amis et anglicismes. Développement des techniques efficaces d’autocorrection et maîtrise d’outils informatisés.
Prerequisite(s): FREN 2202 and FREN 2203 or FREN 2401, or permission of the Department.
Cours trois heures par semaine.

FREN 3212 [0.5 credit]
Des manuscrits aux belles-lettres : de la littérature médiévale à l’humanisme
Étude d’une sélection de textes, tirés de divers genres, permettant d’explorer les origines de la littérature française : oralité et écriture; chansons de geste; courtisie; récits de voyages; littérature de la cour; humanisme. Différentes approches théoriques du texte littéraire.
Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.
Cours trois heures par semaine.

FREN 3213 [0.5 credit]
Du Baroque aux Lumières
Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.
Cours trois heures par semaine.

FREN 3214 [0.5 credit]
Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950
Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.
Cours trois heures par semaine.

FREN 3215 [0.5 credit]
Les ères du soupçon : contemporanéités de la littérature
Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.
Cours trois heures par semaine.

FREN 3216 [0.5 credit]
Problématique littéraire
Étude approfondie d’une problématique dans le champ des études littéraires. Lectures critiques, réflexion théorique et études d’œuvres littéraires. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.
Cours trois heures par semaine.

FREN 3217 [0.5 credit]
Œuvre et auteur(e)s
Étude approfondie d’un(e) auteur(e) ou groupe d’auteur(e)s et de leur œuvre. Lectures critiques, théoriques et littéraires. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.
Cours trois heures par semaine.
FREN 3218 [0.5 credit]
Genre et mouvement
Étude approfondie d’un genre ou mouvement littéraire. Conditions d’émergence (contextes: historique, social, artistique, etc.). Textes théoriques et manifestes. Principaux représentants. Influence (continuations, ruptures). Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department. Cours trois heures par semaine.

FREN 3251 [0.5 credit]
Introduction aux méthodes d’analyse littéraire
Présentation et application de diverses approches théoriques du texte littéraire ou étude approfondie d’une approche théorique particulière (analyses structurelles, méthodes d’interprétation, contextualisation sociohistorique, poétique, etc.). Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department. Cours trois heures par semaine.

FREN 3411 [0.5 credit]
Phonétique et phonologie du français
Étude empirique et théorique des éléments et systèmes phonétiques et phonologiques du français. Processus segmentaux et suprasegmentaux, structures syllabiques et prosodiques. Problèmes classiques de la phonologie française. Prerequisite(s): FREN 2401 or permission of the Department. Cours trois heures par semaine.

FREN 3412 [0.5 credit]
Morphologie du français
Étude de la forme des unités lexicales et grammaticales du français et de leur portée signifiante. Analyse du système flexionnel du français et des mécanismes de formation des mots. Prerequisite(s): FREN 2401 or permission of the Department. Cours trois heures par semaine.

FREN 3413 [0.5 credit]
Syntaxe du français
Études de la structure et des composantes de la phrase: mots et syntagmes. Analyse syntaxique de la phrase simple et complexe. Modèle hiérarchique de l’organisation de la phrase. Prerequisite(s): FREN 2401 or permission of the Department. Cours trois heures par semaine.

FREN 3414 [0.5 credit]
Sociolinguistique du français

FREN 3415 [0.5 credit]
Histoire du français

FREN 3416 [0.5 credit]
Le français dans le monde
Présentation des variétés de français parlé dans le monde, principalement à l’extérieur du Canada. Étude des aspects historiques et sociopolitiques de la diffusion du français. Analyse des traits linguistiques propres aux variétés. Colonisation, créolisation, emprunt linguistique, variation régionale, aménagement linguistique. Prerequisite(s): FREN 2401 or permission of the Department. Cours trois heures par semaine.

FREN 3417 [0.5 credit]
Le français au Canada

FREN 3451 [0.5 credit]
Thème en linguistique
Étude d’un thème particulier en linguistique française. Le contenu varie selon l’année. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Prerequisite(s): FREN 2401 or permission of the Department. Cours trois heures par semaine.
FREN 3511 [0.5 credit]
Expression écrite et traduction
Perfectionnement de l'expression écrite au moyen d'un apprentissage appliqué de la traduction.
Analyses des principales interférences syntaxiques, sémantiques et discursives entre le français et l'anglais. Approfondissement des pratiques de textualisation: cohérence et cohésion, idiomatisation, registres, paraphrase, considérations stylistiques, etc. Approche privilégiant le texte pragmatique.
Prerequisite(s): one FREN course at the 2000-level, or permission of the Department.
Cours trois heures par semaine.

FREN 3701 [0.5 credit]
Français oral
Techniques avancées d'expression orale. This course is not suitable for francophones.
Prerequisite(s): one FREN course at the 2000 level, or permission of the Department.
Cours trois heures par semaine.

FREN 3702 [0.5 credit]
Français écrit
Techniques avancées d'expression écrite.
Prerequisite(s): one FREN course at the 2000-level, or permission of the Department.
Cours trois heures par semaine.

FREN 3900 [0.5 credit]
Apprentissage et enseignement du français langue seconde
Initiation aux études des programmes au Canada et ailleurs. Processus d'acquisition des habiletés d'expression et de compréhension. Survol des théories passées et actuelles. Appréciation et critique de pratiques pédagogiques.
Prerequisite(s): one FREN course at the 2000-level, or permission of the Department.
Cours trois heures par semaine.

FREN 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

FREN 4060 [0.5 credit]
Projet de recherche supervisé
Développement d’un projet individuel supervisé en littérature ou en linguistique, amorcé dans un cours antérieur. Raffinement de l’expression et des idées.
Prerequisite(s): fourth-year standing in the BA Honours in French.
Unscheduled

FREN 4211 [0.5 credit]
Littératures francophones
Analyse de problématiques liées à la francophonie littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5211, for which additional credit is precluded.
Cours trois heures par semaine.

FREN 4212 [0.5 credit]
Littératures québécoise et canadienne d'expression française
Étude approfondie portant sur un ou plusieurs aspects des littératures d'expression française au Canada. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5212, for which additional credit is precluded.
Cours trois heures par semaine.

FREN 4213 [0.5 credit]
Genre et mouvement
Étude approfondie d'un thème, d'un mouvement, d'un genre dans le champ littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5213, for which additional credit is precluded.
Cours trois heures par semaine.

FREN 4215 [0.5 credit]
Problématiques contemporaines
Étude de questions contemporaines dans le domaine littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5215, for which additional credit is precluded.
Cours trois heures par semaine.
FREN 4300 [0.5 credit]
Experiential learning in French and Francophone studies
Topics in French language, literature or linguistics. Application of language skills in a francophone context. Topic and location may vary; consult Departmental website. Includes: Experiential Learning Activity Also offered at the graduate level, with different requirements, as FREN 5501, for which additional credit is precluded.

FREN 4412 [0.5 credit]
Diversité du français
Études des variétés du français, dans ses dimensions spatiales. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Also listed as LING 4412. Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4413 [0.5 credit]
Diachronie du français
Étude du français, dans ses dimensions historiques. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Also listed as LING 4413. Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4414 [0.5 credit]
Analyse du français
Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Also listed as LING 4414. Prerequisite(s): FREN 2401 and FREN 3050, or permission of the department. Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4415 [0.5 credit]
Variation du français
Étude des variations internes de la langue, dans ses dimensions orales et écrites. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Also listed as LING 4415. Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4511 [0.5 credit]
Traduction : méthodologie et pratique
Initiation à différents principes et approches méthodologiques de la traduction. Analyse de texte appliquée à la traduction, repérage raisonné des difficultés, typologie des fautes de traduction, étude de divers procédés, documentation, terminologie et révision. Approche privilégiant une typologie textuelle variée. Prerequisite(s): FREN 3511 or permission of the Department. Cours trois heures par semaine.

FREN 4801 [1.0 credit]
Tutorial A
Special topics in an aspect of French studies under the supervision of a faculty member. Prerequisite(s): fourth-year standing or permission of the Department. Hours to be determined.

FREN 4802 [0.5 credit]
Tutorial B
Special topics in an aspect of French studies under the supervision of a faculty member. Prerequisite(s): fourth-year standing or permission of the Department. Hours to be determined.

FREN 4900 [0.5 credit]
Thème choisi en apprentissage et enseignement du français langue seconde
Approfondissement de considérations théoriques et pratiques reliées à l’enseignement et l’apprentissage du français comme langue seconde. Analyse de composantes pédagogiques générales et en contexte, applications didactiques. Évaluation, critères et standards. Le contenu précis de ce cours varie selon les années. Consulter le site Web. Prerequisite(s): fourth-year standing or permission of the Department. Cours trois heures par semaine.

Geography
This section presents the requirements for programs in:
- Geography B.A. Honours
- Geography with Concentration in Physical Geography B.A. Honours
Program Requirements

Geography

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.5 credits in:
   GEOG 1010 [0.5] Global Environmental Systems
   GEOG 1020 [0.5] People, Places and Environments
   GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution

2. 0.5 credit from:
   GEOG 2020 [0.5] Ecosystems of Canada
   GEOG 2013 [0.5] Weather and Water
   GEOG 2014 [0.5] The Earth’s Surface

3. 1.0 credit in:
   GEOG 2005 [0.5] Introduction to Quantitative Research
   GEOG 2006 [0.5] Introduction to Qualitative Research

4. 1.5 credits from:
   GEOG 2023 [0.5] Cities, Inequality and Urban Change
   GEOG 2200 [0.5] Global Connections
   GEOG 2300 [0.5] Space, Place and Culture
   GEOG 2500 [0.5] Climate Change: Social Science Perspectives

5. 0.5 credit from:
   GEOG 3000 [0.5] Honours Field Course
   GEOG 3030 [0.5] Regional Field Excursion

6. 0.5 credit from:
   GEOG 3001 [0.5] Doing Qualitative Research
   GEOG 3003 [0.5] Quantitative Geography
   GEOM 2007 [0.5] Points, Lines and Polygons
   GEOM 3002 [0.5] Introduction to Remote Sensing
   GEOM 3007 [0.5] Cartographic Theory and Design

7. 1.0 credit from:
   GEOG 3021 [0.5] Geographies of Culture and Identity
   GEOG 3022 [0.5] Environmental and Natural Resources
   GEOG 3023 [0.5] Cities in a Global World
   GEOG 3024 [0.5] Understanding Globalization
   GEOG 3025 [0.5] Geographies of Selected Regions

GEOG 3026 [0.5] Topics in the Geography of Canada
GEOG 3206 [0.5] Health, Environment, and Society
GEOG 3209 [0.5] Sustainability and Environment in the South
GEOG 3501 [0.5] Geographies of the Canadian North

8. 1.0 credit in GEOG and/or GEOM at the 3000-level or above
9. 2.5 credits from:
   a) Thesis pathway: GEOG 4909 [1.0] plus 1.5 credits from GEOG/GEOM and/or ENST at the 4000-level
   b) Course pathway: 2.5 credits from GEOG/GEOM and/or ENST at the 4000-level

B. Credits Not Included in the Major CGPA (10.0 credits)

10. 8.0 credits in electives not in GEOG
11. 2.0 credits in free electives

Total Credits 20.0

Geography with Concentration in Physical Geography

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.5 credits in:
   GEOG 1010 [0.5] Global Environmental Systems
   GEOG 1020 [0.5] People, Places and Environments
   GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution

2. 2.0 credits in:
   GEOG 2005 [0.5] Introduction to Quantitative Research
   GEOG 2006 [0.5] Introduction to Qualitative Research
   GEOG 2013 [0.5] Weather and Water
   GEOG 2014 [0.5] The Earth’s Surface

3. 1.0 credit from:
   GEOG 2023 [0.5] Cities, Inequality and Urban Change
   GEOG 2200 [0.5] Global Connections
   GEOG 2300 [0.5] Space, Place and Culture
   GEOG 2500 [0.5] Climate Change: Social Science Perspectives

4. 0.5 credit in:
   GEOG 3000 [0.5] Honours Field Course
   GEOG 3010 [0.5] Field Methods in Physical Geography

5. 2.0 credits from:
   GEOG 3003 [0.5] Quantitative Geography
   GEOG 3102 [0.5] Geomorphology
   GEOG 3103 [0.5] Watershed Hydrology
   GEOG 3104 [0.5] Principles of Biogeography
   GEOG 3105 [0.5] Climate and Atmospheric Change
   GEOG 3106 [0.5] Aquatic Science and Management
   GEOG 3108 [0.5] Soil Properties
   GEOM 3002 [0.5] Introduction to Remote Sensing

6. 0.5 credit in:
   a) Co-op students must complete:
B.A. Honours (20.0 credits)

Geography

Geography with Concentration in Urban Geography

B.A. Honours (20.0 credits)

A. Credits included in the Major CGPA (11.0 credits)

1. 1.0 credit in:
   GEOG 1010 [0.5] Global Environmental Systems
   GEOG 1023 [0.5] Introduction to Cities and Urbanization

2. 0.5 credit from:
   GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution
   GEOG 1020 [0.5] People, Places and Environments

3. 0.5 credit from:
   GEOG 2013 [0.5] Weather and Water
   GEOG 2014 [0.5] The Earth’s Surface
   GEOG 2020 [0.5] Ecosystems of Canada

4. 1.0 credit in:
   GEOG 2023 [0.5] History of Theories of Urbanism
   ARCU 4600 [0.5] Post-WWII Urbanism
   ARCU 4801 [0.5] Topics in Urbanism
   CDNS 4300 [0.5] Contested Spaces and Communities

B. Credits Not Included in the Major CGPA (10.0 credits)

8. 8.0 credits in electives not in GEOG

9. 2.0 credits in free electives.

Total Credits 20.0

Geography with Concentration in Urban Geography

B.A. Honours (20.0 credits)

A. Credits included in the Major CGPA (11.0 credits)

1. 1.0 credit in:
   GEOG 1010 [0.5] Global Environmental Systems
   GEOG 1023 [0.5] Introduction to Cities and Urbanization

2. 0.5 credit from:
   GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution
   GEOG 1020 [0.5] People, Places and Environments

3. 0.5 credit from:
   GEOG 2013 [0.5] Weather and Water
   GEOG 2014 [0.5] The Earth’s Surface
   GEOG 2020 [0.5] Ecosystems of Canada

4. 1.0 credit in:
   GEOG 2023 [0.5] History of Theories of Urbanism
   ARCU 4600 [0.5] Post-WWII Urbanism
   ARCU 4801 [0.5] Topics in Urbanism
   CDNS 4300 [0.5] Contested Spaces and Communities

B. Credits Not Included in the Major CGPA (10.0 credits)

8. 8.0 credits in electives not in GEOG

9. 2.0 credits in free electives.

Total Credits 20.0
a) Thesis pathway:
   GEOG 4909 [1.0] Honours Research Thesis
   1.5 credits in GEOG/GEOM and/or ENST at the 4000 level
b) Course pathway:
   2.5 credits in GEOG/GEOM and/or ENST at the 4000 level

B. Credits Not Included in the Major CGPA (9.0 credits)
15. 7.5 credits in electives not in GEOG 7.5
16. 1.5 credits in free electives 1.5

Total Credits 20.0

Geography
B.A. Combined Honours (20.0 credits)
A. Credits Included in the Geography Major CGPA (7.0 credits)
1. 1.0 credit in:
   GEOG 1010 [0.5] Global Environmental Systems
   GEOG 1020 [0.5] People, Places and Environments
2. 0.5 credit from:
   GEOG 2020 [0.5] Ecosystems of Canada
   GEOG 2013 [0.5] Weather and Water
   GEOG 2014 [0.5] The Earth's Surface
3. 1.0 credit from:
   GEOG 2023 [0.5] Cities, Inequality and Urban Change
   GEOG 2200 [0.5] Global Connections
   GEOG 2300 [0.5] Space, Place and Culture
   GEOG 2500 [0.5] Climate Change: Social Science Perspectives
4. 1.0 credit from:
   GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution
   GEOG 2005 [0.5] Introduction to Qualitative Research
   GEOG 2006 [0.5] Introduction to Quantitative Research
5. 1.5 credits in GEOG and/or GEOM at the 2000- level or above
6. 2.5 credits in GEOG and/or GEOM at the 3000- level or above

B. Credits Not Included in the Geography Major CGPA (8.0 credits)
7. 6.0 credits in electives not in GEOG 6.0
8. 2.0 credit in free electives. 2.0

Total Credits 15.0

Course Categories for B.Sc. Geography
Lists of courses for all other categories (Science Continuation, Approved Experimental Science, Science Faculty Electives and Approved Arts or Social Sciences Electives) are located at the Academic Regulations for the B.Sc. page.

Earth Sciences and Geography:
Concentration in Terrain Science
B.Sc. Combined Honours (20.0 credits)
A. Credits Included in the Major CGPA (12.5 credits)
1. 0.5 credit in:
   GEOG 2014 [0.5] The Earth's Surface
2. 0.5 credit in:
   ERTH 1006 [0.5] Exploring Planet Earth
3. 2.5 credits in:
   ERTH 2102 [0.5] Mineralogy to Petrology
   ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes
   ERTH 2314 [0.5] Sedimentation and Stratigraphy
   ERTH 2406 [0.5] Geology and Map Interpretation
   ERTH 2802 [0.5] Field Geology I
4. 0.5 credit from:
   ERTH 3203 [0.5] Sedimentology
   ERTH 3206 [0.5] Sedimentary Depositional Systems
   (See Note, below)
5. 1.5 credits in:
   ERTH 3205 [0.5] Physical Hydrogeology
   ERTH 3207 [0.5] Metamorphic Petrology and Processes
   ERTH 3806 [0.5] Structural Geology
6. 1.0 credit in ERTH at the 4000-level
7. 0.5 credit from:
   - GEOG 2006 [0.5] Introduction to Quantitative Research
   - STAT 2507 [0.5] Introduction to Statistical Modeling
8. 1.5 credits in:
   - GEO 1004 [0.5] Maps, Satellites and the Geospatial Revolution
   - GEO 2007 [0.5] Points, Lines and Polygons
   - GEO 2013 [0.5] Weather and Water
9. 2.0 credits in:
   - GEO 3002 [0.5] Introduction to Remote Sensing
   - GEO 3102 [0.5] Geomorphology
   - GEO 3105 [0.5] Climate and Atmospheric Change
   - GEO 3108 [0.5] Soil Properties
10. 1.0 credit in:
    - GEO 4101 [0.5] Two Million Years of Environmental Change
    - GEO 4108 [0.5] Permafrost
11. 1.0 credit from:
    - GEO 4906 [1.0] Honours Research Project
    - ERTH 4908 [1.0] Honours Thesis
    - ERTH 4909 and 0.5 credit 4000-level ERTH
12. 1.0 credit in:
    - MATH 1007 [0.5] Elementary Calculus I
    - MATH 1107 [0.5] Linear Algebra I
13. 1.0 credit from:
    - CHEM 1001 [0.5] General Chemistry I
    - & CHEM 1002 [0.5] General Chemistry II
    - CHEM 1005 [0.5] Elementary Chemistry I
    - & CHEM 1006 [0.5] Elementary Chemistry II
14. 1.0 credit from:
    - PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics
    - & PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
    - PHYS 1007 [0.5] Elementary University Physics I
    - & PHYS 1008 [0.5] Elementary University Physics II
15. 0.5 credit in:
    - COMP 1005 [0.5] Introduction to Computer Science I
16. 0.5 credit in:
    - BIOL 1104 [0.5] Foundations of Biology II
17. 0.5 credit in Advanced Science Faculty electives
18. 0.5 credit in:
    - NSCI 1000 [0.5] Seminar in Science (or approved course outside the faculties of Science and Engineering and Design)
19. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design
20. 1.0 credit in free electives.

Total Credits: 20.0

Note: for Item 4 above, ERTH 3203 is required if prerequisite conditions are met.

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**Earth Sciences and Physical Geography**

**B.Sc. Combined Honours (20.0 credits)**

### A. Credits Included in the Major CGPA (13.0 credits)

1. 1.0 credit in:
   - ERTH 1006 [0.5] Exploring Planet Earth
   - GEOG 1010 [0.5] Global Environmental Systems
2. 1.0 credit in:
   - GEOG 2013 [0.5] Weather and Water
   - GEOG 2014 [0.5] The Earth’s Surface
3. 2.0 credits in:
   - ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes
   - ERTH 2314 [0.5] Sedimentation and Stratigraphy
   - ERTH 2406 [0.5] Geology and Map Interpretation
4. 0.5 credit in:
   - ERTH 2802 [0.5] Field Geology I
5. 1.5 credits in:
   - ERTH 3003 [0.5] Geochemistry and Geochronology
   - ERTH 3405 [0.5] Geophysical Methods
   - ERTH 3806 [0.5] Structural Geology
6. 0.5 credit from:
   - ERTH 3205 [0.5] Physical Hydrogeology
   - GEOG 3103 [0.5] Watershed Hydrology
7. 1.0 credit in:
   - ERTH 2004 [0.5] Maps, Satellites and the Geospatial Revolution
   - GEOM 3002 [0.5] Introduction to Remote Sensing
8. 2.0 credits from:
   - GEOG 3003 [0.5] Quantitative Geography
   - GEOG 3010 [0.5] Field Methods in Physical Geography
   - GEOG 3102 [0.5] Geomorphology
   - GEOG 3104 [0.5] Principles of Biogeography
   - GEOG 3105 [0.5] Climate and Atmospheric Change
   - GEOG 3106 [0.5] Aquatic Science and Management
   - GEOG 3108 [0.5] Soil Properties
9. 0.5 credit from:
   - ERTH 3203 [0.5] Sedimentology
   - ERTH 3206 [0.5] Sedimentary Depositional Systems
10. 1.0 credit in Science Geography or Geomatics courses at the 2000-level or above
11. 1.0 credit in Earth Sciences, Science Geography or Geomatics courses at the 4000-level
12. 1.0 credit from:
    - ERTH 4908 [1.0] Honours Thesis
    - OR
    - ERTH 4909 [0.5] Research in Earth Sciences and 0.5 credit in ERTH, GEOG or GEOM at the 4000-level
    - OR
    - GEOG 4005 [0.5] Directed Studies in Geography
    - and 0.5 credit in ERTH, GEOG or GEOM at the 4000-level
    - OR
    - GEOG 4906 [1.0] Honours Research Project

### B. Credits Not Included in the Major CGPA (7.0 credits)

- 1.0 credit in ERTH, GEOG or GEOM at the 4000-level
- 0.5 credit in ERTH, GEOG or GEOM at the 4000-level
- 0.5 credit in ERTH, GEOG or GEOM at the 4000-level
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<td>NSCI 1000</td>
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<td>Climate and Atmospheric Change</td>
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Approved Electives - B.Sc. Earth Sciences and Physical Geography

**Biology**
- BIOL 1103 [0.5] Foundations of Biology I
- BIOL 1104 [0.5] Foundations of Biology II

**Computer Science**
- COMP 1006 [0.5] Introduction to Computer Science II

**Chemistry**
- CHEM 2103 [0.5] Physical Chemistry I
- CHEM 2203 [0.5] Organic Chemistry I
- CHEM 2207 [0.5] Introduction to Organic Chemistry I
- CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry

**Mathematics**
- MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
- MATH 2007 [0.5] Elementary Calculus II
- MATH 2107 [0.5] Linear Algebra II

**Physics**
- PHYS 2202 [0.5] Wave Motion and Optics

**Statistics**
- STAT 2509 [0.5] Introduction to Statistical Modeling II

**Physical Geography**

**B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (10.0 credits)**

1. **1.0 credit from:**
   - GEOG 1010 [0.5] Global Environmental Systems
   - ERTH 1006 [0.5] Exploring Planet Earth
   - and

2. **1.0 credit from:**
   - GEOG 2006 [0.5] Introduction to Quantitative Research

3. **0.5 credit from:**
   - GEOG 2006 [0.5] Introduction to Quantitative Research
   - STAT 2507 [0.5] Introduction to Statistical Modeling I

4. **0.5 credit from:**
   - GEOG 3000 [0.5] Honours Field Course
   - GEOG 3010 [0.5] Field Methods in Physical Geography

5. **2.5 credits from:**
   - GEOG 3000 [0.5] Honours Field Course
   - GEOG 3003 [0.5] Quantitative Geography
   - GEOG 3010 [0.5] Field Methods in Physical Geography

6. **1.5 credits from:**
   - GEOG 3000 [0.5] Honours Field Course
   - GEOG 3003 [0.5] Quantitative Geography
   - GEOG 3010 [0.5] Field Methods in Physical Geography

7. **2.0 credits from:**
   - GEOG at the 4000 level or
   - GEOG 4000 [0.5] Field Studies
   - GEOG 4004 [0.5] Environmental Impact Assessment
   - GEOG 4005 [0.5] Directed Studies in Geography
   - GEOG 4013 [0.5] Cold Region Hydrology
   - GEOG 4017 [0.5] Global Biogeochemical Cycles
   - GEOG 4101 [0.5] Two Million Years of Environmental Change
   - GEOG 4103 [0.5] Water Resources Engineering
   - GEOG 4104 [0.5] Microclimatology
   - GEOG 4108 [0.5] Permafrost

8. **1.0 credit in:**
   - GEOG 4906 [1.0] Honours Research Project
B. Credits Not Included in the Major CGPA (10.0 credits)
9. 1.0 credit in Experimental Science Electives 1.0
10. 0.5 credit in:
   MATH 1007 [0.5] Elementary Calculus I 0.5

11. 0.5 credit in MATH or COMP 0.5
12. 2.0 credits in Science Continuation, not in GEOG 2.0
13. 1.0 credits in Science Faculty Electives 1.0
14. 0.5 credit from:
   NSCI 1000 [0.5] Seminar in Science (or approved courses outside the faculties of Science and Engineering and Design) 0.5

15. 1.0 credit in approved courses outside the faculties of Science and Engineering and Design, not in GEOG 1.0
16. 0.5 credit in approved courses outside the faculties of Science and Engineering and Design 0.5
17. 3.0 credits in free electives. 3.0

Total Credits 20.0

Specialization in Globalization and the Environment

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)
1. 4.5 credits in:
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation
   GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization
   a. 1.5 credits in: Foundations
      GEOG 1010 [0.5] Global Environmental Systems
      GEOG 1020/ENST 2000 [0.5] Places and Environments
      GEOG 2200 [0.5] Global Connections
   b. 1.5 credits from: Globalization
      GEOG 2023 [0.5] Cities, Inequality and Urban Change
      GEOG 2300 [0.5] Space, Place and Culture
      GEOG 3023 [0.5] Cities in a Global World
      GEOG 3024 [0.5] Understanding Globalization
      GEOG 3025 [0.5] Geographies of Selected Regions
      GEOG 3030 [0.5] Regional Field Excursion
      GEOG 3404 [0.5] Geographies of Economic Development
   c. 2.0 credits from: Global Environment
      ANTH 3355 [0.5] Anthropology and the Environment

GEOG 2500/ENST 2000 [0.5] Change: Social Science Perspectives
GEOG 3022/ENST 3000 [0.5] Environmental and Natural Resources
GEOG 3206 [0.5] Health, Environment, and Society
GEOG 3209 [0.5] Sustainability and Environment in the South
HUMR 3503 [0.5] Global Environmental Justice
PSCI 3801 [0.5] Environmental Politics
TSES 3002 [0.5] Energy and Sustainability

4. 8.0 credits in: free electives 8.0

B. Credits Not Included in the Major CGPA (8.0 credits)
5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits 20.0

Stream in Globalization and the Environment

B.G. In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in: Core Courses
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream
   a. Foundations
      GEOG 1010 [0.5] Global Environmental Systems
      GEOG 1020/ENST 2000 [0.5] Places and Environments
      GEOG 2200 [0.5] Global Connections
   b. Globalization
      GEOG 2023 [0.5] Cities, Inequality and Urban Change
      GEOG 2300 [0.5] Space, Place and Culture
      GEOG 3023 [0.5] Cities in a Global World
Minor in Geography (4.0 credits)
Open to all undergraduate degree students not in Geography programs.
Requirements:
1. 1.0 credit from:
   - GEOG 1010 [0.5] Global Environmental Systems
   - ERTH 1006 [0.5] Exploring Planet Earth
2. 1.0 credit from:
   - GEOG 2013 [0.5] Weather and Water
   - GEOG 2014 [0.5] The Earth’s Surface
3. 2.5 credits from:
   - GEOM 3002 [0.5] Introduction to Remote Sensing
   - GEOM 3003 [0.5] Quantitative Geography
   - GEOM 3102 [0.5] Geomorphology
   - GEOM 3103 [0.5] Watershed Hydrology
   - GEOM 3104 [0.5] Principles of Biogeography
   - GEOM 3105 [0.5] Climate and Atmospheric Change
   - GEOM 3106 [0.5] Aquatic Science and Management
   - GEOM 3108 [0.5] Soil Properties
   - GEOM 4013 [0.5] Cold Region Hydrology
   - GEOM 4017 [0.5] Global Biogeochemical Cycles
   - GEOM 4101 [0.5] Two Million Years of Environmental Change
   - GEOM 4104 [0.5] Microclimatology
   - GEOM 4108 [0.5] Permafrost
4. The remaining requirements of the major discipline(s) and degree must be satisfied.
   Total Credits 4.0

Minor in Urban Studies (4.0 credits)
Only students pursuing an undergraduate program (except the BA Honours in Geography with a Concentration in Urban Geography) requiring at least 20.0 credits to graduate may be admitted to the Urban Studies minor.
Requirements:
1. 1.0 credit from:
   - FYSM 1107 [1.0] Social Justice and the City
   - GEOG 1020 [0.5] People, Places and Environments
   - GEOG 1023 [0.5] Introduction to Cities and Urbanization
   - GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution
2. 1.0 credit from:
   - GEOG 2023 [0.5] Cities, Inequality and Urban Change
   - GEOG 2200 [0.5] Global Connections
   - GEOM 2007 [0.5] Points, Lines and Polygons
3. 0.5 credit from:
   - GEOG 3023 [0.5] Cities in a Global World
4. 0.5 credit from:
   - AFRI 3004 [0.5] The African City
   - ARCU 3100 [0.5] The Morphology of the City
   - HIST 3209 [0.5] Canadian Urban History
   - HUMR 3002 [0.5] Right to the City
   Total Credits 4.0
Students in the following interdisciplinary programs are exempt from breadth requirements.

Breadth Area 1: Culture and Communication
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SRER, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK
Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

B.Sc. Regulations
The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B.Sc.
Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students
Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student...
Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

**Change of Program within the B.Sc. Degree**

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

**Experimental Science Requirement**

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

**Approved Experimental Science Courses**

<table>
<thead>
<tr>
<th><strong>Biochemistry</strong></th>
<th><strong>Chemistry</strong></th>
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</thead>
<tbody>
<tr>
<td>BIOC 2200 [0.5]</td>
<td>CHEM 1001 [0.5] General Chemistry I</td>
</tr>
<tr>
<td>BIOC 4001 [0.5]</td>
<td>CHEM 1002 [0.5] General Chemistry II</td>
</tr>
<tr>
<td>BIOC 4201 [0.5]</td>
<td>CHEM 1005 [0.5] Elementary Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 1006 [0.5] Elementary Chemistry II</td>
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<tr>
<td></td>
<td>CHEM 2103 [0.5] Physical Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2203 [0.5] Organic Chemistry I</td>
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<tr>
<td></td>
<td>CHEM 2204 [0.5] Organic Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2302 [0.5] Analytical Chemistry I</td>
</tr>
<tr>
<td></td>
<td>CHEM 2303 [0.5] Analytical Chemistry II</td>
</tr>
<tr>
<td></td>
<td>CHEM 2800 [0.5] Foundations for Environmental Chemistry</td>
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</tbody>
</table>

**Earth Sciences**

<table>
<thead>
<tr>
<th><strong>Geography</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 1006 [0.5] Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5] The Earth System Through Time</td>
</tr>
<tr>
<td>ERTH 2102 [0.5] Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2404 [0.5] Engineering Geoscience</td>
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<tr>
<td>ERTH 2802 [0.5] Field Geology I</td>
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<tr>
<td>ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
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<tr>
<td>ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td>ERTH 3204 [0.5] Mineral Deposits</td>
</tr>
<tr>
<td>ERTH 3205 [0.5] Physical Hydrogeology</td>
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<tr>
<td>ERTH 3806 [0.5] Structural Geology</td>
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**Food Sciences**

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<thead>
<tr>
<th><strong>Food Science</strong></th>
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<tbody>
<tr>
<td>FOOD 3001 [0.5]</td>
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<tr>
<td>FOOD 3002 [0.5]</td>
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<td>FOOD 3005 [0.5]</td>
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**Neuroscience**

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<tr>
<th><strong>Neuroscience</strong></th>
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<tbody>
<tr>
<td>NEUR 3206 [0.5]</td>
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<tr>
<td>NEUR 3207 [0.5]</td>
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<tr>
<td>NEUR 4600 [0.5]</td>
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**Physics**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PHYS 1001 [0.5] Foundations of Physics I</td>
</tr>
<tr>
<td>PHYS 1002 [0.5] Foundations of Physics II</td>
</tr>
<tr>
<td>PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td>PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td>PHYS 1007 [0.5] Elementary University Physics I</td>
</tr>
<tr>
<td>PHYS 1008 [0.5] Elementary University Physics II</td>
</tr>
<tr>
<td>PHYS 2202 [0.5] Wave Motion and Optics</td>
</tr>
<tr>
<td>PHYS 2604 [0.5] Modern Physics I</td>
</tr>
<tr>
<td>PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars</td>
</tr>
<tr>
<td>PHYS 3606 [0.5] Modern Physics II</td>
</tr>
<tr>
<td>PHYS 3608 [0.5] Modern Applied Physics</td>
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</tbody>
</table>

**Course Categories for B.Sc. Programs**

**Science Geography Courses**

<table>
<thead>
<tr>
<th><strong>Science Geography Courses</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 1010 [0.5] Global Environmental Systems</td>
</tr>
<tr>
<td>GEOG 2006 [0.5] Introduction to Quantitative Research</td>
</tr>
<tr>
<td>GEOG 2013 [0.5] Weather and Water</td>
</tr>
<tr>
<td>GEOG 2014 [0.5] The Earth's Surface</td>
</tr>
<tr>
<td>GEOG 3003 [0.5] Quantitative Geography</td>
</tr>
<tr>
<td>GEOG 3010 [0.5] Field Methods in Physical Geography</td>
</tr>
<tr>
<td>GEOG 3102 [0.5] Geomorphology</td>
</tr>
<tr>
<td>GEOG 3103 [0.5] Watershed Hydrology</td>
</tr>
<tr>
<td>GEOG 3104 [0.5] Principles of Biogeography</td>
</tr>
<tr>
<td>GEOG 3105 [0.5] Climate and Atmospheric Change</td>
</tr>
</tbody>
</table>
Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student’s major discipline, and is chosen from the following:

- Bioc (Biochemistry)
- Biol (Biology)
- Chem (Chemistry)
- Comp (Computer Science) A maximum of two half-credits at the 1000-level in Comp, excluding Comp 1001 may be used as Science Continuation credits.
- Erth (Earth Sciences), except Erth 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use Erth 2401, Erth 2402, and Erth 2403 only as free electives.
- Engineering: Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
- Ensc (Environmental Science)
- Food (Food Science and Nutrition)
- Geom (Geomatics)
- HLTH (Health Sciences)
- Isap (Interdisciplinary Science Practice)
- Math (Mathematics)
- Neur (Neuroscience)
- Phys (Physics), except Phys 2903
- Science Geography Courses (see list above)
- Science Psychology Courses (see list above)
- Stat (Statistics)

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

- Bioc (Biochemistry)
- Biol (Biology) Biology & Biochemistry students may use Biol 1010 and Biol 2005 only as free electives
- Chem (Chemistry) except Chem 1003, Chem 1004 and Chem 1007
- Comp (Computer Science) except Comp 1001
- Erth (Earth Sciences) except Erth 1010, Erth 1011 and Erth 2415. Earth Sciences students may use Erth 2401, Erth 2402, and Erth 2403 only as free electives.
- Engineering
- Ensc 2001
- Food (Food Science and Nutrition)
- Geom (Geomatics)
- hlth (Health Science)
- Isap (Interdisciplinary Science Practice)
- Math (Mathematics)
- Neur (Neuroscience)
- Phys (Physics) except Phys 1901, Phys 1902, Phys 1905, Phys 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- Stat (Statistics)
- Tses (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (Geom) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited. Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

- Biol 4810 [0.5] Education Research in Biology
- Chem 1003 [0.5] The Chemistry of Food, Health and Drugs
- Chem 1004 [0.5] Drugs and the Human Body
Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

**Employment**

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts. While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.
Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Geography, Geography with Concentration in Physical Geography, B.Sc.
Honours Physical Geography: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, or B.Sc. Honours Physical Geography;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a minimum major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term:
   a. the required second-year methods courses in their program (GEOG 2005, GEOG 2006)
   b. the required field course in their program (GEOG 3000, GEOG 3010, GEOG 3030)
5. Be registered as a full-time student.

B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, B.Sc. Honours Physical Geography students must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op work term course: GEOG 3999

Work/Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements
Degrees
• Bachelor of Arts (B.A.)(Honours)
• Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing
B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System.

Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees
• B.Sc. (Honours)
• B.Sc. (Major)
• B.Sc.

Admission Requirements
B. Sc. Honours Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements
For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions. For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended. For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.
Advanced Standing
For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

B.Sc. Major Program

B.Sc. Program

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing
For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Geography (GEOG) Courses
4000-level courses are normally restricted to students with fourth-year Honours standing. However, students with third-year standing may take 4000-level courses provided they have the necessary prerequisites, a Geography CGPA of 6.50 or better, and permission of the Department.

GEOG 1010 [0.5 credit]
Global Environmental Systems
Principles, processes and interactions in the Earth’s environment emphasizing the flow of energy and matter within global systems. Atmospheric and oceanic processes, earth surface processes and biogeochemical cycling. Case studies on the interaction between human activity and the natural environment. Includes: Experiential Learning Activity
Lectures three hours a week, laboratory two hours a week.

GEOG 1020 [0.5 credit]
People, Places and Environments
Introduction to human geography. Examination of relationships between people, communities, society and the natural environment at local to global scales. Population change, cultural patterns, and historical, economic, political and environmental forces that shape human activity and experiences from place to place. Includes: Experiential Learning Activity
Also listed as ENST 1020.
Lectures two hours a week and tutorial one hour a week.

GEOG 1023 [0.5 credit]
Introduction to Cities and Urbanization
Introduction to the study of cities, urbanization and suburbanization. Geography of urban experience, development and change across an urbanizing planet. Urbanization processes, patterns and issues in different cities and regions; the relationships among urban areas. Includes: Experiential Learning Activity
Precludes additional credit for GEOG 2400 (no longer offered).
Lectures two hours per week and tutorials one hour per week.

GEOG 2005 [0.5 credit]
Introduction to Qualitative Research
Introduction to the research process, from generating questions to reporting results. Topics include intensive and extensive research approaches; the use of surveys, interviews and other data collection methods; the analysis of qualitative information; and the ethical dimensions of doing research with people and communities. Includes: Experiential Learning Activity
Also listed as ENST 2005.
Prerequisite(s): 1.0 credit in GEOG or ENST at the 1000-level and second-year standing, or permission of the Department.
Lectures two hours a week, workshop two hours a week.
GEOG 2006 [0.5 credit]
Introduction to Quantitative Research
Introduction to solving problems using descriptive and inferential statistical methods. Graphical and numerical tools to describe distributions. Probability, sampling and estimates, and hypothesis testing. Fundamentals of spatial statistics and analysis. Includes: Experiential Learning Activity
Also listed as ENST 2006. Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), NEUR 2002, PSCI 2702, STAT 2507, STAT 2606. Lectures two hours a week, laboratory two hours a week.

GEOG 2007 [0.5 credit]
Weather and Water
Introduction to climate, weather and the hydrological cycle. Physical properties of the atmosphere, radiation and energy balances, global circulation, atmospheric moisture and precipitation, weather systems and forecasting, mechanisms of climate change. Includes: Experiential Learning Activity
Prerequisite(s): GEOG 1010 or ERTH 1006 or ISCI 1001. Lectures three hours a week, laboratory three hours a week.

GEOG 2013 [0.5 credit]
The Earth's Surface
Introduction to geomorphology. Weathering, slope and fluvial processes within drainage basins, and glacial and periglacial processes. Includes: Experiential Learning Activity
Prerequisite(s): GEOG 1010 or ERTH 1006 or ISCI 1001. Lectures three hours a week, laboratory three hours a week.

GEOG 2020 [0.5 credit]
Ecosystems of Canada
Introduction to world biomes and in-depth analysis of the distribution and development of Canada’s major ecosystems including the boreal forest, temperate forest, tundra, grasslands, wetlands, and aquatic environments; Current issues in ecosystem science and conservation such as agricultural management, forestry and urban ecology. Prerequisite(s): GEOG 1010 or ERTH 1006 or ERTH 1010 or ISCI 1001. Lectures three hours a week.

GEOG 2023 [0.5 credit]
Cities, Inequality and Urban Change
Geographical perspectives on the uneven power relationships and politics that shape urban lives and urban space. Key topics may include housing and segregation, planning for sustainable cities, urban social movements, urban inequality and changing livelihoods. Includes: Experiential Learning Activity
Precludes additional credit for GEOG 2400 (no longer offered). Prerequisite(s): GEOG 1023, or second-year standing, or permission of the department. Lectures two hours per week and tutorials one hour per week.

GEOG 2200 [0.5 credit]
Global Connections
Globalization and global environmental change as linked processes. Geographical analysis of economic, cultural and political transformations acting at global, national and local scales. Choices and constraints underlying economic, social and environmental sustainability. Prerequisite(s): second-year standing or permission of the department. Lectures three hours a week.

GEOG 2300 [0.5 credit]
Space, Place and Culture
Introduction to social and cultural geography, including how theories of space, place, landscape, power, and knowledge can be used to understand the geographic dimensions of social and cultural life. Topics include culture and identity, migration and transnationalism, nature, gender, sexuality, race, colonialism, consumption, and work. Prerequisite(s): second-year standing or permission of the Department. Lectures two hours a week, discussion one hour a week.

GEOG 2500 [0.5 credit]
Climate Change: Social Science Perspectives
An introduction to climate change as a political, economic and socio-cultural phenomenon, including the political-economic and world-historical causes of anthropogenic greenhouse gas emissions; variations in impact and vulnerability; climate justice and other political movements; global mitigation and adaptation strategies; and proposals for radical systemic change. Includes: Experiential Learning Activity
Also listed as ENST 2500. Prerequisite(s): second-year standing or permission of the Department. Lectures two hours a week, discussion groups one hour a week.
GEOG 2600 [0.5 credit]
Geography Behind the Headlines
Exploration of the geographical backgrounds to selected issues of current public interest, through geography's perspective of integrating human and physical environments. Issues selected will be structured from the global through the national/regional to the local, identifying the interdependencies among the scales. Lecture three hours a week.

GEOG 3000 [0.5 credit]
Honours Field Course
Field research, with a focus on data collection methods, analysis and presentation of findings. Design and conduct research that links the human and biophysical environment. Topics may change from year to year. Includes: Experiential Learning Activity Also listed as ENST 3900. Precludes additional credit for ENST 2900 (no longer offered). Prerequisite(s): GEOG 2005/ENST 2005 and GEOG 2006/ENST 2006, third-year Honours standing in Geography, Geomatics or Environmental Studies, or permission of the Department. Normally consists of a multi-day field excursion in the Ottawa region. A supplementary charge may apply. Consult the department regarding course details.

GEOG 3001 [0.5 credit]
Doing Qualitative Research
Theory and methods used in qualitative approaches to research in human geography; hands-on experience and discussion of beliefs and claims underlying scholarly work. Ethical and practical dilemmas confronting researchers. Gathering and interpreting qualitative information; representing knowledge. Includes: Experiential Learning Activity Prerequisite(s): GEOG 2005 or ENST 2005. Lecture and discussion three hours per week.

GEOG 3003 [0.5 credit]
Quantitative Geography
Quantitative methods used in geographical research: multiple correlation and regression, principal component/ factor analysis, spatial statistics, cluster analysis, and a review of other selected techniques. Computer-based analysis. Includes: Experiential Learning Activity Prerequisite(s): GEOG 2006 or ENST 2006 or STAT 2507 or permission of the Department. Lecture two hours a week, laboratory two hours a week.

GEOG 3009 [0.5 credit]
Special Topics in Human Geography
Selected topics concerning human geography not usually included in regular course offerings. Topic varies from year to year. Students should check with the Department for more information. Precludes additional credit for GEOG 2505 (no longer offered). Prerequisite(s): GEOG 1020 or ENST 1020 and third-year standing, or permission of the Department. Lecture three hours per week.

GEOG 3010 [0.5 credit]
Field Methods in Physical Geography
Field and laboratory approaches, methodologies and techniques in physical geography. Field projects will be undertaken to collect data for analysis, evaluation and presentation. Includes: Experiential Learning Activity Prerequisite(s): GEOG 2006 or ENST 2006 or STAT 2507 and GEOG 2013 or GEOG 2014 or permission of the Department. Normally consists of a multi-day field camp, including lodging, during Fall or Winter Break, and regular classroom meetings. A supplementary charge will apply.

GEOG 3021 [0.5 credit]
Geographies of Culture and Identity
Examination of culture, identity and place over time. Colonial and other historical processes that have shaped societies from place to place; relationships between cultural groups and their natural surroundings; gender, ethnicity, nationality and other dimensions of identity; impacts of globalization. Includes: Experiential Learning Activity Prerequisite(s): GEOG 2300 and third-year standing, or permission of the Department. Lecture three hours a week.

GEOG 3022 [0.5 credit]
Environmental and Natural Resources
Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources. Includes: Experiential Learning Activity Also listed as ENST 3022. Prerequisite(s): third-year standing in Geography or Environmental Studies or BGInS Specialization/Stream in Globalization and Environment or permission of the Department. Lecture three hours a week.
GEOG 3023 [0.5 credit]
Cities in a Global World
Introduces the study of cities as "systems of cities", the political economy of linkages between urban places located unevenly in space, and "cities as systems". Case studies of socio-cultural, political and economic relations within biophysical and built environments.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2023 and third-year standing, or permission of the department.
Lecture and discussion three hours a week.

GEOG 3024 [0.5 credit]
Understanding Globalization
Geographical analysis of processes of globalization: theoretical frameworks, historical context and contemporary challenges.
Prerequisite(s): GEOG 2200 and third-year standing, or permission of the Department.
Lecture three hours a week.

GEOG 3025 [0.5 credit]
Geographies of Selected Regions
Geographical analysis of key questions facing a selected region of the world. Attention will focus on selected topics within one or more regions and their related global context.
Prerequisite(s): third-year standing in a B.A. program or BGInS Specialization/Stream in Globalization and Environment or permission of the Department.
Lecture three hours a week.

GEOG 3026 [0.5 credit]
Topics in the Geography of Canada
Selected topic concerning the geography of Canada. Topic varies from year to year.
Precludes additional credit for GEOG 2505 [no longer offered].
Prerequisite(s): GEOG 1020 or ENST 1020 and second-year standing, or permission of the Department.
Lecture three hours a week.

GEOG 3030 [0.5 credit]
Regional Field Excursion
Guided and independent geographic field research, with a focus on data collection methods, and analysis and presentation of findings. Consists of an excursion outside of the Ottawa region. A supplementary charge may apply.
Includes: Experiential Learning Activity
Prerequisite(s): third-year Honours standing in Geography or BGInS Specialization in Globalization and Environment or permission of the Department.
A seven- to ten-day field excursion.

GEOG 3102 [0.5 credit]
Geomorphology
Geomorphological agents of landscape change at the Earth's surface, emphasizing the role of water, ice and wind in erosion and deposition; use of geomorphic indicators in studies of environmental change. A supplementary charge may apply.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2014 and third-year standing, or permission of the Department.
Lectures two hours a week, laboratory two hours a week, one field excursion.

GEOG 3103 [0.5 credit]
Watershed Hydrology
Principles of hydrology at local and watershed scales, emphasizing: soil moisture regimes; field data collection and analysis of surface water or snow and ice conditions; hydrologic processes in cold environments; and regional runoff regimes in Canada.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2013 or permission of the Department.
Lectures three hours a week, laboratory two hours a week.

GEOG 3104 [0.5 credit]
Principles of Biogeography
Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.
Includes: Experiential Learning Activity
Also listed as BIOL 3608.
Prerequisite(s): GEOG 1010 or BIOL 2600, or permission of the Department.
Lectures, laboratory, and fieldwork five hours a week.

GEOG 3105 [0.5 credit]
Climate and Atmospheric Change
The global climate system, with emphasis on global change variability over the historical and modern periods; the changing composition of the atmosphere and its impact on climate; analysis and interpretation of climatic and atmospheric data; modeling of climate systems.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2013 or permission of the Department.
Lecture two hours a week, laboratory two hours a week.

GEOG 3106 [0.5 credit]
Aquatic Science and Management
Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation.
Includes: Experiential Learning Activity
Also listed as ENSC 3106.
Prerequisite(s): third-year standing and a second-year science or engineering course.
Workshop four hours per week.
GEOG 3108 [0.5 credit]
Soil Properties
The physical and chemical properties of soils; soil-water relationships, weathering processes, soil mineralogy, cation exchange, soil pH. A plant-oriented perspective predominates.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2013 or GEOG 2014 or permission of the Department.
Lectures and laboratory five hours a week.

GEOG 3206 [0.5 credit]
Health, Environment, and Society
Factors influencing human health in an ecological framework involving population structure, habitat, and behaviour. Changes in the distribution of communicable and degenerative diseases are portrayed as being related to historical and contemporary development and globalization processes. Sources, types and characteristics of geographically referenced health information.
Prerequisite(s): third-year standing.
Lectures three hours a week.

GEOG 3209 [0.5 credit]
Sustainability and Environment in the South
Analysis of the relationships between people and environment in selected regions in the South (Africa, Asia, Latin America). Emphasis on sustainable livelihoods and local action in relation to broader socio-economic and political processes. Regions selected vary from year to year.
Prerequisite(s): third-year standing and ENST 2000 or ENST 2001 or GEOG 2200 or GEOG 2300 or permission of the Department.
Lecture and discussion three hours a week.

GEOG 3404 [0.5 credit]
Geographies of Economic Development
Geographical approaches to economic development and difference at local, regional and global scales. Critical historical, cultural, social and political economic perspectives on ‘development’, including theories of the state, colonial power, and development institutions. Spatial dynamics and environmental impacts of economic activity.
Prerequisite(s): GEOG 2200 or permission of the Department.
Lectures three hours a week.

GEOG 3501 [0.5 credit]
Geographies of the Canadian North
The physical characteristics, historical geography, economic resources, settlement patterns and problems and the future development of Arctic and Subarctic lands, focusing primarily on Canada.
Prerequisite(s): third-year standing or permission of the Department.
Lectures three hours a week.

GEOG 3700 [0.5 credit]
Population Geography
The distributional aspects of population attributes; areal patterns of population characteristics and their spatial variations associated with differences in the nature of places; migratory movements within the framework of spatial models of interactions between locations.
Prerequisite(s): GEOG 2200 or GEOG 2300, or permission of the Department.
Lectures three hours a week.

GEOG 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

GEOG 4000 [0.5 credit]
Field Studies
Field observation and methodology in a selected region; individual or group basis.
Includes: Experiential Learning Activity
Also listed as ENST 4400.
Prerequisite(s): third-year Honours standing and permission of the Department.
Hours to be arranged.

GEOG 4004 [0.5 credit]
Environmental Impact Assessment
Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies.
Includes: Experiential Learning Activity
Also listed as ENST 4004.
Prerequisite(s): GEOG 3022 or ENST 3022, and fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.
Lectures and seminars three hours per week.

GEOG 4005 [0.5 credit]
Directed Studies in Geography
Students pursue their interest in a selected theme in geography on a tutorial basis with a member of the Department.
Prerequisite(s): permission of the Department.

GEOG 4007 [0.5 credit]
Special Topics in Geography and Environmental Studies
Selected topics in geography and/or environmental studies.
Also listed as ENST 4007.
Precludes additional credit for GEOG 4006.
Prerequisite(s): fourth-year Honours standing in the Department of permission of the Department.
Seminar three hours per week.
GEOG 4013 [0.5 credit]
Cold Region Hydrology
An examination of cold region hydrologic processes via experimental and observational studies; analysis of hydrologic data and application of hydrologic models.
Prerequisite(s): GEOG 3103.
Lecture three hours a week.

GEOG 4017 [0.5 credit]
Global Biogeochemical Cycles
Processes that control the fluxes and reservoirs of biologically active chemical constituents on land, in the atmosphere, and in the oceans. Interactions between biogeochemical cycles and the Earth's climate; impact of land use and fossil fuel emissions on biogeochemical cycles and global change.
Prerequisite(s): GEOG 3108 or permission of the Department.
Lectures three hours a week.

GEOG 4021 [0.5 credit]
Seminar in Culture, Identity and Place
Selected topic or field of inquiry concerning the geographic dimensions of culture, identity and place.
Prerequisite(s): GEOG 3021 and fourth-year Honours standing in Geography or permission of the Department.
Seminar three hours a week.

GEOG 4022 [0.5 credit]
Seminar in People, Resources and Environmental Change
A selected topic or field of inquiry concerning natural resource use and environmental change. Also listed as ENST 4022.
Prerequisite(s): GEOG 3022 or ENST 3022 and fourth-year Honours standing in Geography or Environmental Studies or BGInS Specialization in Globalization and Environment or permission of the Department.
Seminar three hours a week.

GEOG 4023 [0.5 credit]
Seminar in Special Topics on the City
A selected topic or field of inquiry concerning urban geography.
Prerequisite(s): GEOG 3023 and fourth-year Honours standing in Geography or Environmental Studies or BGInS Specialization in Globalization and Environment or permission of the Department.
Seminar three hours per week.

GEOG 4024 [0.5 credit]
Seminar in Globalization
A selected issue or topic related to globalization.
Prerequisite(s): GEOG 3024 and fourth-year Honours standing in Geography or BGInS Specialization in Globalization and Environment or permission of the Department.
Seminar three hours per week.

GEOG 4040 [0.5 credit]
Geographic Thought
Major intellectual issues and debates in the development of contemporary human geography, including history of geographic thought, geographic responses to social and political movements and debates, and geographic engagement with contemporary critical theory.
Prerequisite(s): fourth-year Honours standing in Geography or permission of the Department.
Seminar three hours per week.

GEOG 4050 [0.5 credit]
Environmental and Geographic Education
Selected theoretical and applied issues concerning environmental and geographic education. Also listed as ENST 4050.
Prerequisite(s): third-year Honours standing in Geography or Environmental Studies, or permission of the Department.
Seminar three hours per week.

GEOG 4101 [0.5 credit]
Two Million Years of Environmental Change
Multidisciplinary scientific study of the changes in the physical environment of the Earth during the last two million years and methods of studying recent Earth history, with focus on current research. Includes: Experiential Learning Activity
Prerequisite(s): third year standing in a B.Sc. program, or a third year Science Geography Elective or a third year ERTH course, or permission of the Department. Note: GEOG 3105 is recommended.
Lectures three hours a week.

GEOG 4103 [0.5 credit]
Water Resources Engineering
A quantitative analysis of natural water systems and the development of these systems as a resource. Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Availability of groundwater. Storm water management. Also listed as ENVE 3003.
Prerequisite(s): permission of the Department. Recommended background: MAAE 2300.
Lectures three hours a week, problem analysis one hour a week.

GEOG 4104 [0.5 credit]
Microclimatology
The formation of microclimates near the Earth's surface; energy and water flows; the interaction of atmospheric processes with the physical properties of surfaces.
Prerequisite(s): GEOG 2013 or permission of the Department.
Lectures three hours a week.
GEOG 4108 [0.5 credit]
Permafrost
Distribution, development, and degradation of permafrost in Canada; thermal and hydrologic regime of permafrost terrain; development of landforms in permafrost regions; geotechnical consideration in northern construction.
Prerequisite(s): GEOG 3108 or permission of the Department.
Lectures three hours a week.

GEOG 4304 [0.5 credit]
Transportation Engineering and Planning
Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion; human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods.
Also listed as CIVE 3304.
Prerequisite(s): third-year standing, or permission of the Department.
Lectures three hours a week, problem analysis three hours alternate weeks.

GEOG 4323 [0.5 credit]
Urban and Regional Planning
History, theories, and practice of urban planning, as well as the policies, plans, and programs developed and implemented in diverse communities. Course topics may include the integration of community development and social planning, urban design, transportation and infrastructure, and environmental management.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 3023 and fourth-year standing in Geography or Environmental Studies, or permission of the department.
Lectures three hours per week.

GEOG 4406 [0.5 credit]
Practicum I
Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4408.
Includes: Experiential Learning Activity
Also listed as GEOM 4406.
Prerequisite(s): fourth-year Honours standing in Geography or Geomatics and permission of the Department.
Field placement one day a week.

GEOG 4450 [0.5 credit]
Community-Engaged Research
Working in partnership with local organizations, students apply their geographical knowledge to conduct community-engaged research. Student projects will generate outputs for community partners. Research topics vary year to year.
Includes: Experiential Learning Activity
Also listed as ENST 4450.
Prerequisite(s): fourth-year standing, or permission of the department.
Lectures, discussion and project work three hours a week.

GEOG 4906 [1.0 credit]
Honours Research Project
A research project based on a modeling, laboratory or field problem. The project is supervised by a member of the department and a written thesis and poster must be submitted.
Includes: Experiential Learning Activity
Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOM 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907.
Prerequisite(s): fourth-year Honours standing in B.Sc. Geography, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

GEOG 4909 [1.0 credit]
Honours Research Thesis
Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.
Includes: Experiential Learning Activity
Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOM 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907.
Prerequisite(s): fourth-year Honours standing in B.A. Geography or B.Globalization and International Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

Geomatics
This section presents the requirements for programs in:
• Geomatics B.A. Honours
• Geomatics B.Sc. Honours
• Minor in Geomatics

Program Requirements
Course Categories for B.Sc. Geomatics
See Academic Regulations for the Bachelor of Science Degree for a list of courses in these categories.
• Science Continuation
• Experimental Science Electives
• Science Faculty Electives
• Approved Courses Outside the Faculties of Science and Engineering and Design
• Science Geography courses

Geomatics
B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)
1. 1.0 credit in:
   GEOG 1010 [0.5] Global Environmental Systems
   GEOG 1020 [0.5] People, Places and Environments
2. 2.5 credits in:
   GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution
   GEOM 2005 [0.5] Introduction to Geospatial Programming
   GEOM 2006 [0.5] Introduction to Quantitative Research
   or STAT 2507 [0.5] Introduction to Statistical Modeling
   GEOM 2007 [0.5] Points, Lines and Polygons
   GEOM 2008 [0.5] Pixels and Grids
3. 2.5 credits in:
   GEOM 3000 [0.5] Honours Field Course
   or GEOG 3010 [Field Methods in Physical Geography
   GEOM 3002 [0.5] Introduction to Remote Sensing
   GEOM 3003 [0.5] Quantitative Geography
   GEOM 3005 [0.5] Geospatial Analysis
   GEOM 3007 [0.5] Cartographic Theory and Design
4. 1.5 credits from:
   GEOM 4001 [0.5] Special Topics in Geomatics
   GEOM 4003 [0.5] Remote Sensing of the Environment
   GEOM 4005 [0.5] Directed Studies in Geomatics
   GEOM 4008 [0.5] Advanced Topics in Geographic Information Systems
   GEOM 4009 [0.5] Applications in Geographic Information Systems
5. 0.5 credit in:
   a) Co-op students must complete:
      0.5 cr in GEOM or GEOG at 4000-level, excluding
      GEOG 4406, GEOG 4408, GEOM 4406, GEOM 4408
   b) All other students must complete:
      GEOM 4406 [0.5] Practicum I
6. 1.0 credit in GEOM at the 2000-level or higher
7. 1.0 credit from:
   a) Thesis pathway
      GEOM 4909 [1.0] Honours Research Thesis
   or
   b) Course pathway
      1.0 credit in GEOM or GEOG at the 4000-level
B. Credits not included in the Major CGPA (10.0 credits)
8. 8.0 credits in electives not in Geomatics
9. 2.0 credits in free electives.

Total Credits 20.0

Geomatics
B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)
1. 0.5 credit from:
   GEOG 1010 [0.5] Global Environmental Systems
   ERTH 1006 [0.5] Exploring Planet Earth
2. 3.5 credits in:
   GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution
   GEOM 2013 [0.5] Weather and Water
   GEOM 2005 [0.5] Introduction to Geospatial Programming
   GEOM 2006 [0.5] Introduction to Quantitative Research
   or STAT 2507 [0.5] Introduction to Statistical Modeling
   GEOM 2007 [0.5] Points, Lines and Polygons
   GEOM 2008 [0.5] Pixels and Grids
   CIVE 2004 [0.5] GIS, Surveying, CAD and BIM
3. 2.5 credits in:
   GEOM 3000 [0.5] Honours Field Course
   or GEOG 3010 [Field Methods in Physical Geography
   GEOM 3002 [0.5] Introduction to Remote Sensing
   GEOM 3003 [0.5] Quantitative Geography
   GEOM 3005 [0.5] Geospatial Analysis
   GEOM 3007 [0.5] Cartographic Theory and Design
4. 1.5 credits from:
   GEOM 4001 [0.5] Special Topics in Geomatics
   GEOM 4003 [0.5] Remote Sensing of the Environment
   GEOM 4005 [0.5] Directed Studies in Geomatics
   GEOM 4008 [0.5] Advanced Topics in Geographic Information Systems
   GEOM 4009 [0.5] Applications in Geographic Information Systems
5. 0.5 credit in:
   a) Co-op students must complete:
      0.5 cr in GEOM or GEOG at 4000-level, excluding
      GEOG 4406, GEOG 4408, GEOM 4406, GEOM 4408
   b) All other students must complete:
      GEOM 4406 [0.5] Practicum I
6. 1.0 credits in GEOM at the 2000-level or higher
7. 1.0 credit in:
   GEOM 4906 [1.0] Honours Research Project
B. Credits Not Included in the Major CGPA (9.5 credits)
8. 1.0 credit in Experimental Science Electives
9. 1.0 credits in:
   MATH 1007 [0.5] Elementary Calculus I
   MATH 1107 [0.5] Linear Algebra I
10. 1.0 approved credits in Computer Science
11. 2.0 credits in Science Continuation not in GEOM
12. 1.0 credit in Science Faculty Electives
13. 0.5 credit in:
   NSCI 1000 [0.5] Seminar in Science (or approved courses outside the faculties outside the faculties of Science and Engineering and Design)
14. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design
A First-Year Seminar (FYSM) during their first 4.0 credits. Students are strongly encouraged to include First-Year Seminars in their program of study. The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

### First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

### Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

### Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESA, FIL, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

### Breadth Area 2: Humanities


**Subject codes:** AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

### Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial

**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECON, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**


**Subject codes:** ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOP, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

**Declared and Undeclared Students**

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

**Change of Program Within the B.A. Degree**

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**B.Sc. Regulations**

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

**Breadth Requirement for the B.Sc.**

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.
Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

**Declared and Undeclared Students**

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

**Change of Program within the B.Sc. Degree**

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

**Experimental Science Requirement**

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

### Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOC 4001 [0.5]</td>
<td>Methods in Biochemistry</td>
</tr>
<tr>
<td>BIOC 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
</tr>
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#### Biochemistry

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
</tbody>
</table>

#### Earth Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
</tr>
<tr>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2404 [0.5]</td>
<td>Engineering Geoscience</td>
</tr>
<tr>
<td>ERTH 2802 [0.5]</td>
<td>Field Geology I</td>
</tr>
<tr>
<td>ERTH 3111 [0.5]</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
</tr>
<tr>
<td>ERTH 3112 [0.5]</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td>ERTH 3204 [0.5]</td>
<td>Mineral Deposits</td>
</tr>
<tr>
<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
</tr>
<tr>
<td>ERTH 3806 [0.5]</td>
<td>Structural Geology</td>
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</tbody>
</table>

#### Food Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD 3001 [0.5]</td>
<td>Food Chemistry</td>
</tr>
<tr>
<td>FOOD 3002 [0.5]</td>
<td>Food Analysis</td>
</tr>
<tr>
<td>FOOD 3005 [0.5]</td>
<td>Food Microbiology</td>
</tr>
</tbody>
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#### Geography

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<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEG 1010 [0.5]</td>
<td>Global Environmental Systems</td>
</tr>
<tr>
<td>GEG 3108 [0.5]</td>
<td>Soil Properties</td>
</tr>
</tbody>
</table>

#### Neuroscience

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<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>NEUR 3206 [0.5]</td>
<td>Sensory and Motor Neuroscience</td>
</tr>
<tr>
<td>NEUR 3207 [0.5]</td>
<td>Systems Neuroscience</td>
</tr>
<tr>
<td>NEUR 4600 [0.5]</td>
<td>Advanced Lab in Neuroanatomy</td>
</tr>
</tbody>
</table>

#### Physics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1001 [0.5]</td>
<td>Foundations of Physics I</td>
</tr>
<tr>
<td>PHYS 1002 [0.5]</td>
<td>Foundations of Physics II</td>
</tr>
<tr>
<td>PHYS 1003 [0.5]</td>
<td>Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td>PHYS 1004 [0.5]</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Name</td>
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<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>PHYS 1008</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td>PHYS 2202</td>
<td>Wave Motion and Optics</td>
</tr>
<tr>
<td>PHYS 2604</td>
<td>Modern Physics I</td>
</tr>
<tr>
<td>PHYS 3007</td>
<td>Third Year Physics Laboratory: Selected Experiments and Seminars</td>
</tr>
<tr>
<td>PHYS 3606</td>
<td>Modern Physics II</td>
</tr>
<tr>
<td>PHYS 3608</td>
<td>Modern Applied Physics</td>
</tr>
</tbody>
</table>

**Course Categories for B.Sc. Programs**

### Science Geography Courses
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth's Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography
- GEOG 3102 [0.5] Geomorphology
- GEOG 3103 [0.5] Watershed Hydrology
- GEOG 3104 [0.5] Principles of Biogeography
- GEOG 3105 [0.5] Climate and Atmospheric Change
- GEOG 3106 [0.5] Aquatic Science and Management
- GEOG 3108 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 4005 [0.5] Directed Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Microclimatology
- GEOG 4108 [0.5] Permafrost

### Science Psychology Courses
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 2307 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II

### Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:
- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)
- TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

### Science Faculty Electives
Science Faculty Electives are courses at the 1000-4000 level chosen from:
- BIOC (Biochemistry)
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering
- ENSC 2001

FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)
- TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.
Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above), NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 4810</td>
<td>Education Research in Biology</td>
</tr>
<tr>
<td>CHEM 1003</td>
<td>The Chemistry of Food, Health and Drugs</td>
</tr>
<tr>
<td>CHEM 1004</td>
<td>Drugs and the Human Body</td>
</tr>
<tr>
<td>CHEM 1007</td>
<td>Chemistry of Art and Artifacts</td>
</tr>
<tr>
<td>ERTH 1010</td>
<td>Our Dynamic Planet Earth</td>
</tr>
<tr>
<td>ERTH 1011</td>
<td>Evolution of the Earth</td>
</tr>
<tr>
<td>ERTH 2415</td>
<td>Natural Disasters</td>
</tr>
<tr>
<td>ISCI 1001</td>
<td>Introduction to the Environment</td>
</tr>
<tr>
<td>ISCI 2000</td>
<td>Natural Laws</td>
</tr>
<tr>
<td>ISCI 2002</td>
<td>Human Impacts on the Environment</td>
</tr>
<tr>
<td>MATH 0107</td>
<td>Algebra and Geometry</td>
</tr>
<tr>
<td>PHYS 1901</td>
<td>Planetary Astronomy</td>
</tr>
<tr>
<td>PHYS 1902</td>
<td>From our Star to the Cosmos</td>
</tr>
<tr>
<td>PHYS 1905</td>
<td>Physics Behind Everyday Life</td>
</tr>
<tr>
<td>PHYS 2903</td>
<td>Physics Towards the Future</td>
</tr>
</tbody>
</table>

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1001</td>
<td>Introduction to Computational Thinking for Arts</td>
</tr>
<tr>
<td>MATH 0005</td>
<td>Precalculus: Functions and Graphs</td>
</tr>
<tr>
<td>MATH 0006</td>
<td>Precalculus: Trigonometric Functions and Complex</td>
</tr>
<tr>
<td>MATH 1009</td>
<td>Mathematics for Business</td>
</tr>
<tr>
<td>MATH 1119</td>
<td>Linear Algebra: with Applications to Business</td>
</tr>
<tr>
<td>MATH 1401</td>
<td>Elementary Mathematics for Economics I</td>
</tr>
<tr>
<td>MATH 1402</td>
<td>Elementary Mathematics for Economics II</td>
</tr>
</tbody>
</table>

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The
summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account. Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit.

Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours, B.Sc. Honours Geomatics: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the Bachelor of Arts Honours or Bachelor of Science Honours in Geomatics;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
   a. the required second-year methods courses in their program (GEOG 2005/ENST 2005, GEOG 2006/ENST 2006)
   b. the required field course in their program (ENST 3900/GEOG 3000/GEOG 3010/GEOG 3030)
5. Be registered as a full-time student.

B.A. and B.Sc. Honours Geomatics students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: GEOM 3999

Work/Study Pattern:

<table>
<thead>
<tr>
<th>Year 1 Term</th>
<th>Year 2 Term</th>
<th>Year 3 Term</th>
<th>Year 4 Term</th>
<th>Year 5 Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Summer</td>
<td>Fall</td>
<td>Summer</td>
<td>Summer</td>
</tr>
<tr>
<td>Winter</td>
<td>Summer</td>
<td>Summer</td>
<td>Winter</td>
<td>Winter</td>
</tr>
</tbody>
</table>

Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees
• Bachelor of Arts (B.A.)(Honours)
• Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees
• B.Sc. (Honours)
• B.Sc. (Major)
• B.Sc.

Admission Requirements

B. Sc. Honours Program

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and
two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

**Specific Honours Admission Requirements**

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

**Advanced Standing**

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**B.Sc. Major Program**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Geomatics (GEOM) Courses**

**GEOM 1004 [0.5 credit]**

Maps, Satellites and the Geospatial Revolution

Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing). Includes: Experiential Learning Activity

Also listed as ERTH 2004.

Precludes additional credit for GEOM 2004 (no longer offered).

Lectures and laboratory, four hours a week.

**GEOM 2005 [0.5 credit]**

Introduction to Geospatial Programming

Computer programming for geomatics students focusing on storage, manipulation, management, visualization and analysis of geospatial data; Essential coding concepts and best practices including variables, loops, and conditional statements; programmatic handling of raster and vector data structures; batch geoprocessing and map production; GIS tool customization.

Includes: Experiential Learning Activity

Lectures and laboratory, four hours per week.
GEOM 2007 [0.5 credit]
Points, Lines and Polygons
Storage, visualization, manipulation and analysis of vector geospatial data. Vector geoprocessing including buffering, overlays and topological analysis; feature classification and cartographic representation; managing coordinate reference systems for vector layers; selected applications of vector GIS such as urban planning, environmental and resource management and socio-economic mapping.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 1004 or permission of the Department.
Lectures and laboratory, four hours a week.

GEOM 2008 [0.5 credit]
Pixels and Grids
Storage, visualization, manipulation, and analysis of gridded geospatial data; 3D raster visualization; digital terrain analysis; interpolation and filtering; raster geoprocessing and projections; selected topics in raster GIS such as least-cost path analysis, natural hazard assessment, pollution mapping, hotspot analysis for crime and disease mapping.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 1004 or permission of the Department.
Lectures and laboratory, four hours per week.

GEOM 3002 [0.5 credit]
Introduction to Remote Sensing
Principles and methods of remote sensing; visual interpretation of air photos and satellite imagery; digital image processing, analysis and classification for thematic mapping; introduction to various active and passive remote sensing imagery types such as optical, hyperspectral, RADAR and LiDAR.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 2008 and third-year standing, or permission of the Department.
Lectures two hours a week, laboratory two hours a week.

GEOM 3005 [0.5 credit]
Geospatial Analysis
An advanced course in geospatial analysis theory and practice; geoprocessing; geo-visualization; geostatistics; spatial modelling; working with spatio-temporal data structures; advanced site-suitability and network analysis; intermediate GIS tool customization.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 2007 and GEOM 2008.
Lecture and laboratories five hours a week.

GEOM 3007 [0.5 credit]
Cartographic Theory and Design
Principles of and issues in cartography, cartographic communication and map design; practical aspects of cartographic representation using multimedia and online/interactive mapping.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 2007 or GEOM 2008 or permission of the Department.
Lectures and laboratory four hours a week.
GEOM 4406 [0.5 credit]
Practicum I
Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4408.
Includes: Experiential Learning Activity
Also listed as GEOG 4406.
Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.
Field placement one day a week.

GEOM 4408 [0.5 credit]
Practicum II
Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4406.
Includes: Experiential Learning Activity
Also listed as GEOG 4408.
Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.
Field placement one day a week.

GEOM 4906 [1.0 credit]
Honours Research Project
Candidates for B.Sc. with Concentration in Geomatics undertake a research project within their area of specialization. The project is supervised by a member of the department and a written report must be submitted. The candidate may be examined orally on the report.
Includes: Experiential Learning Activity
Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907.
Prerequisite(s): fourth-year Honours standing in Geomatics, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

GEOM 4909 [1.0 credit]
Honours Research Thesis
Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.
Includes: Experiential Learning Activity
Precludes additional credit for GEOG 4904 / GEOM 4904 (no longer offered), GEOG 4906, GEOG 4909, GEOG 4909, ENST 4906 and ENST 4907.
Prerequisite(s): fourth-year Honours standing in B.A. Geomatics, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.
Hours to be arranged with faculty adviser.

• Minor in German

Minor in German (4.0 credits)
Open to all undergraduate degree students.
Requirements:
1. 3.0 credits in GERM 3.0
2. 1.0 credit in GERM at the 3000-level or higher 1.0
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:
1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

German (GERM) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

German (Minor)

This section presents the requirements for programs in:
GERM 1010 [0.5 credit]
First-Year German I
For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 1110.
Four hours a week.

GERM 1020 [0.5 credit]
First-Year German II
Continuation of first-year German. Oral skills, reading and writing. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 1110.
Prerequisite(s): grade of C or higher in GERM 1010, or permission of the School.
Four hours a week.

GERM 1110 [1.0 credit]
Intensive First-Year German
For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 1010 and GERM 1020.
Eight hours a week (one term).

GERM 2000 [0.5 credit]
Reading in German I
For students with no prior knowledge of German who would like to develop the skills to read a variety of German texts, including passages from scholarly journals, reports, online newspaper or magazine articles.
Includes: Experiential Learning Activity
Three hours a week.

GERM 2010 [0.5 credit]
Second-Year German I
Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 2110.
Prerequisite(s): grade of C or higher in GERM 1020, GERM 1110, or permission of the School.
Four hours a week.

GERM 2020 [0.5 credit]
Second-Year German II
Continuation of second-year German. Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 2110.
Prerequisite(s): grade of C or higher in GERM 2010, or permission of the School.
Four hours a week.

GERM 2110 [1.0 credit]
Intensive Second-Year German
Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 2010 and GERM 2020.
Prerequisite(s): grade of C or higher in GERM 1020, GERM 1110, or permission of the School.
Eight hours a week (one term).

GERM 3000 [0.5 credit]
Reading in German II
A continuation of Reading in German I. Further development of reading skills in German.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 2000 or permission of the School.
Three hours a week.

GERM 3110 [1.0 credit]
Intensive Third-Year German
Continuation of the study of German to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 2020, GERM 2110, or permission of the School.
Six hours a week (one term).

GERM 4110 [1.0 credit]
Intensive Fourth-Year German
Advanced spoken and written German with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 3110, or permission of the School.
Six hours a week (one term).

GERM 4215 [0.5 credit]
German for Specific Purposes
Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 4110, or permission of the School.
Three hours per week.

GERM 4380 [0.5 credit]
Topics in German-speaking Cultures
Selected topics in German-speaking cultures and societies. Development of advanced language skills.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 4110, or permission of the School.
Three hours per week.
GERM 4900 [1.0 credit]
Independent Study
Research in a topic in German language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in German, grade of C or higher in GERM 4110 or equivalent, or permission of the School.

GERM 4901 [0.5 credit]
Independent Study
Research in a topic in German language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in German, grade of C or higher in GERM 4110 or equivalent, or permission of the School.

Global and International Studies
This section presents the requirements for programs in:

• Specialization in Africa and Globalization B.G.In.S. Honours
• Specialization in Europe and Russia in the World B.G.In.S. Honours
• Specialization in French and Francophone Studies B.G.In.S. Honours
• Specialization in Global and Transnational History B.G.In.S. Honours
• Specialization in Global Development B.G.In.S. Honours
• Specialization in Global Genders and Sexualities B.G.In.S. Honours
• Specialization in Global Inequalities and Social Change B.G.In.S. Honours
• Specialization in Global Law and Social Justice B.G.In.S. Honours
• Specialization in Global Literatures B.G.In.S. Honours
• Specialization in Global Migration and Transnationalism B.G.In.S. Honours
• Specialization in Global Politics B.G.In.S. Honours
• Specialization in Global Religions: Identity and Community B.G.In.S. Honours
• Specialization in Globalization and the Environment B.G.In.S. Honours
• Specialization in Globalization, Culture and Power B.G.In.S. Honours
• Specialization in International Economic Policy B.G.In.S. Honours
• Specialization in Latin American and Caribbean Studies B.G.In.S. Honours

Program Requirements
International Experience Requirement
Prior to graduation, students in the Honours program must satisfy a requirement for international experience in ONE of the following ways:

1. **International exchange**: successful completion of at least 0.5 credit in approved courses through an international exchange agreement managed by the International Student Services Office, or

2. **Letter of Permission**: successful completion of at least 0.5 credit in approved courses by Letter of Permission, from an international or Canadian university offering a course taught outside Canada, or

3. **International placement**: successful completion of GINS 3900 [0.5] International Placement, or GINS 3901 [1.0] International Placement or GPOL 3100 [2.5] Internship in Global Politics, or an approved international placement offered through another unit, or

4. **Carleton course taught abroad**: successful completion of at least 0.5 credit in a Carleton course taught abroad, chosen from:
   - AFRI 3100 [0.5] African Studies Abroad: Selected Topics
   - ARTH 3701 [0.5] Art and Architecture on Site
   - ARTH 4701 [0.5] Art and Architecture on Site
   - CLCV 3400 [0.5] Greek and Roman Studies Abroad
   - EURR 4302 [0.5] EU Summer Study Abroad
   - GEOG 3030 [0.5] Regional Field Excursion
5. **Group project**: successful completion of GINS 3100 [0.5] Global and International Group Project, or

6. **Experiential Learning Abroad**: successful completion of GINS 3200 [0.5] Experiential Learning Abroad.

**Language Requirement**

Students in the BGInS programs must satisfy the language requirement. The language requirement may be satisfied in one of two ways:

1. **By course work**

   Students who lack second language skill upon entry, or who wish to learn a new language, can satisfy the language requirement by satisfactorily completing language instruction courses in a modern language other than English up to an intermediate level. In most cases, this means completing the equivalent of two years (2.0 credits) of university-level language study. Listed below are the specific Carleton language instruction courses which satisfy the BGInS language requirement. Courses taken at other institutions may also be used to meet the language requirement, as long as they are accepted by the Department of French or the School of Linguistics and Language Studies as being equivalent to, or at a higher level than, the courses specified below.

**Minimum Course Requirements for Languages**

<table>
<thead>
<tr>
<th>Language</th>
<th>Courses</th>
</tr>
</thead>
</table>
| **American Sign Language** | asla 2020 [0.5] Second-Year American Sign Language II  
|                   | or ASLA 2110 [1.0] Intensive Second-Year American Sign Language |
| **Arabic**        | ARAB 2110 [1.0] Intensive Second-Year Arabic |
| **French**        | FREN 1100 [1.0] French 3                     |
| **German**        | GERM 2020 [0.5] Second-Year German II        
|                   | or GERM 2110 [1.0] Intensive Second-Year German |
| **Italian**       | ITAL 2020 [0.5] Second-Year Italian II       
|                   | or ITAL 2110 [1.0] Intensive Second-Year Italian |
| **Japanese**      | JAPA 2110 [1.0] Intensive Second-Year Japanese |
| **Mandarin Chinese** | CHIN 2020 [0.5] Second-Year Mandarin Chinese II  
|                   | or CHIN 2110 [1.0] Intensive Second-Year Mandarin Chinese |
| **Portuguese**    | PORT 2110 [1.0] Intensive Second-Year Portuguese |
| **Russian**       | RUSS 2020 [0.5] Second-Year Russian II       |
| **Spanish**       | SPAN 2020 [0.5] Second-Year Spanish II       
|                   | or SPAN 2110 [1.0] Intensive Second-Year Spanish |
| **Other Languages** | LANG 2020 [0.5] Second-Year Language II     |

or LANG 2110 [1.0] Continuing Intensive Study of a Language  
or LANG 2900 [1.8] Supervised Autonomous Language Learning

2. **By demonstrating prior language proficiency**

   Students who already have intermediate or higher second language skills upon entry may be exempted from taking language courses. Students who wish to be exempted from taking language courses must apply for an exemption to the Program Director using the form available on the BGInS website. Each application will be treated on its merits, but the following general guidelines apply:

   - Secondary school language of instruction: Students whose secondary school transcripts show that their primary language of instruction in secondary school was a language other than English may be exempted from taking language courses.
   - French immersion: Students who have successfully completed Grade 12 French immersion or the equivalent at a Canadian high school may be exempted from taking language courses.
   - Proficient speakers: Students who do not qualify under either of the first two categories, but who nonetheless consider themselves proficient speakers of a language other than English, may be exempted from having to take language courses. For languages taught at Carleton, “proficiency” means a level at least equivalent to completion of one of the designated language courses listed above. For languages not taught at Carleton, availability of a test depends upon faculty resource availability.

   **Note**: For students enrolled in one of the geographically-defined regional Specializations or Streams, only certain languages relevant to that region of the world may be used to satisfy the language requirement. See the program requirements in each of the regional Specializations and Streams for further details.

**Specializations**

**Specialization in Africa and Globalization**

B.G.In.S. Honours (20.0 credits)

1. **4.5 credits in**: Core Courses 4.5

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
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<tbody>
<tr>
<td>GINS 1000</td>
<td>Global History</td>
</tr>
<tr>
<td>GINS 1010</td>
<td>International Law and Politics</td>
</tr>
<tr>
<td>GINS 1020</td>
<td>Ethnography, Globalization and Culture</td>
</tr>
<tr>
<td>GINS 2000</td>
<td>Ethics and Globalization</td>
</tr>
<tr>
<td>GINS 2010</td>
<td>Globalization and International Economic Issues</td>
</tr>
<tr>
<td>GINS 2020</td>
<td>Global Literatures</td>
</tr>
<tr>
<td>GINS 3010</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
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</table>

532 The Academic Year (Graduate and Undergraduate Studies)
<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GINS 4090</td>
<td>Honours Seminar in Global and International Studies</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td><strong>2.0 credit in: International Experience Requirement Preparation</strong></td>
<td></td>
</tr>
<tr>
<td>GINS 1300</td>
<td>International Experience Requirement Preparation</td>
<td>0.0</td>
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<tr>
<td></td>
<td><strong>3.75 credits in: the Specialization</strong></td>
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<tr>
<td>b. 1.0 credit from: African Regions</td>
<td></td>
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</tr>
<tr>
<td>AFRI 2002</td>
<td>The Horn of Africa</td>
<td>0.5</td>
</tr>
<tr>
<td>AFRI 2004</td>
<td>North Africa</td>
<td>0.5</td>
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<tr>
<td>AFRI 2005</td>
<td>West Africa</td>
<td>0.5</td>
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<tr>
<td>AFRI 2006</td>
<td>Southern Africa</td>
<td>0.5</td>
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<tr>
<td>c. 1.0 credit from: Intermediate African Studies</td>
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<tr>
<td>AFRI 3001</td>
<td>Globalization and Popular Culture in Africa</td>
<td>0.5</td>
</tr>
<tr>
<td>AFRI 3002</td>
<td>Regions in Africa: Cultures, Society, Politics</td>
<td>0.5</td>
</tr>
<tr>
<td>AFRI 3003</td>
<td>African Social and Political Thought</td>
<td>0.5</td>
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<tr>
<td>AFRI 3004</td>
<td>The African City</td>
<td>0.5</td>
</tr>
<tr>
<td>AFRI 3005</td>
<td>African Migrations and Diasporas</td>
<td>0.5</td>
</tr>
<tr>
<td>d. 0.5 credit from: African Experience</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>AFRI 3100</td>
<td>African Studies Abroad: Selected Topics</td>
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</tr>
<tr>
<td>AFRI 3900</td>
<td>Placement</td>
<td>0.5</td>
</tr>
<tr>
<td>or 0.5 credit on an approved exchange program at an African university or research institution</td>
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<tr>
<td>e. 0.5 credit from: History</td>
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<tr>
<td>HIST 2706</td>
<td>Ancient and Pre-Colonial Africa</td>
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<td>HIST 2707</td>
<td>Modern Africa</td>
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<tr>
<td>HIST 3717</td>
<td>Gender and Sexuality in Africa</td>
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<tr>
<td>HIST 3906</td>
<td>Topics in World History (topic on Africa)</td>
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<tr>
<td>PSCI 3100</td>
<td>Politics of Development in Africa</td>
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<tr>
<td>PSCI 3101</td>
<td>Politics of War in Africa</td>
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<td>g. 0.5 credit from Anthropology</td>
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<tr>
<td>ANTH 2620</td>
<td>Ethnography of Sub-Saharan Africa</td>
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<tr>
<td>ANTH 2660</td>
<td>Ethnography of North Africa</td>
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<td>h. 0.5 credit from: Literature and Culture</td>
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<tr>
<td>AFRI 3609</td>
<td>African Cinema</td>
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<td>ENGL 2926</td>
<td>African Literatures I</td>
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<td>ENGL 3940</td>
<td>Studies in Diaspora Lit.</td>
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<td>FREN 4212</td>
<td>Littératures francophones</td>
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<tr>
<td>MUSI 4105</td>
<td>Issues and Processes in African Music</td>
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<td>i. 0.5 credit from: African Diaspora</td>
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<td>ENGL 2957</td>
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<tr>
<td>ENGL 3940</td>
<td>Studies in Diaspora Lit.</td>
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<tr>
<td>ENGL 4975</td>
<td>Issues in Postcolonial Theory</td>
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<tr>
<td>HIST 2710</td>
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<td>AFRI 4000</td>
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<td>GINS 4908</td>
<td>[History of 'The African Child']</td>
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<tr>
<td>GINS 4950</td>
<td>Selected Topics in African Studies</td>
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<tr>
<td>ANTH 4620</td>
<td>Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research</td>
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<td>PSCI 4203</td>
<td>Southern Africa After Apartheid</td>
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<td>PSCI 4207</td>
<td>Globalization, Adjustment and Democracy in Africa</td>
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<td>B. Credits Not Included in the Major CGPA (8.0 credits)</td>
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<tr>
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<td>International Law and Politics</td>
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<td>Ethnography, Globalization and Culture</td>
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<td>Ethics and Globalization</td>
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<td>GINS 2010</td>
<td>Globalization and International Economic Issues</td>
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<td>GINS 2020</td>
<td>Global Literatures</td>
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<td>GINS 3010</td>
<td>Global and International Theory</td>
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<tr>
<td>GINS 3020</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
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<tr>
<td>GINS 4090</td>
<td>Honours Seminar in Global and International Studies</td>
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<tr>
<td>2. 0.0 credit in: International Experience Requirement Preparation</td>
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<tr>
<td>3. 7.5 credits in: the Specialization</td>
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<td>a. 0.5 credit in: Foundations</td>
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<tr>
<td>EURR 1001</td>
<td>Introduction to European and Russian Studies</td>
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<tr>
<td>b. 1.0 credit in: Core Politics, Society, and International Affairs</td>
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<tr>
<td>EURR 2001</td>
<td>Current Issues in European Politics and Society</td>
<td>0.5</td>
</tr>
<tr>
<td>EURR 2002</td>
<td>Europe and Russia in the World</td>
<td>0.5</td>
</tr>
<tr>
<td>c. 1.0 credit in: Core Literature and Culture</td>
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<td>EURR 3001</td>
<td>Literature and Culture in Europe</td>
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</tr>
<tr>
<td>EURR 3002</td>
<td>Literature and Culture in Russia and Eurasia</td>
<td>0.5</td>
</tr>
</tbody>
</table>
c. 1.0 credit from: Modern History category

d. 1.0 credit from: Politics and Economics category

e. 0.5 credit from: Language, Art, Culture category

f. 0.5 credit from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR not used to fulfill another requirement. No more than 0.5 credit from the Contexts and Methods for Regional Studies category.

g. 1.0 credit from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR 4908 (1.0) Honours Essay.

h. 1.5 credit from: EURUS 4000-level Honours Course category. At least 1.0 credit in EURR. May include EURR 4908 (1.0) Honours Essay.

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The BGINS Language requirement must be met with a regional language relevant to Europe and Russia other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

Total Credits 20.0

Approved Courses in European, Russian, and Eurasian Studies

This list includes categories of approved courses that fulfill specific program requirements for all undergraduate programs in the Institute of European, Russian, and Eurasian Studies (EURUS). Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

**Modern History**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 2207</td>
<td>Nineteenth-Century Europe</td>
</tr>
<tr>
<td>HIST 2502</td>
<td>Modern Britain</td>
</tr>
<tr>
<td>HIST 2508</td>
<td>France since 1889</td>
</tr>
<tr>
<td>HIST 2510</td>
<td>19th-Century Germany</td>
</tr>
<tr>
<td>HIST 2511</td>
<td>20th-Century Germany</td>
</tr>
<tr>
<td>HIST 2600</td>
<td>History of Russia</td>
</tr>
<tr>
<td>HIST 2802</td>
<td>War and Society in Modern Europe, 1789-1914</td>
</tr>
<tr>
<td>HIST 2803</td>
<td>War and Society in Modern Europe, 1914-1950</td>
</tr>
<tr>
<td>HIST 3113</td>
<td>Revolution and Society in France, 1789-1799</td>
</tr>
<tr>
<td>HIST 3115</td>
<td>Childhood and Youth in History</td>
</tr>
<tr>
<td>HIST 3177</td>
<td>Empire and Globalization</td>
</tr>
<tr>
<td>HIST 3204</td>
<td>Gender and Sexuality in Modern Europe</td>
</tr>
<tr>
<td>HIST 3714</td>
<td>Holocaust Encounters</td>
</tr>
<tr>
<td>HIST 3800</td>
<td>International History 1914-41</td>
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<tr>
<td>HIST 3801</td>
<td>International History 1941-90</td>
</tr>
<tr>
<td>HIST 3902</td>
<td>Topics in European History</td>
</tr>
</tbody>
</table>

**Politics and Economics**

<table>
<thead>
<tr>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ECON 3807</td>
<td>European Economic Integration</td>
</tr>
<tr>
<td>ECON 3808</td>
<td>The Economics of Transition</td>
</tr>
<tr>
<td>PSCI 3105</td>
<td>Imperialism</td>
</tr>
<tr>
<td>PSCI 3206</td>
<td>European Democracies</td>
</tr>
<tr>
<td>PSCI 3207</td>
<td>The Government and Politics of European Integration</td>
</tr>
<tr>
<td>PSCI 3208</td>
<td>Politics in Russia and Ukraine: Power and Contestation</td>
</tr>
<tr>
<td>PSCI 3209</td>
<td>Reconstruction and Transformation in Europe and Eurasia</td>
</tr>
<tr>
<td>PSCI 3608</td>
<td>Migration Governance</td>
</tr>
<tr>
<td>PSCI 3704</td>
<td>Government and Politics of Central and Eastern Europe</td>
</tr>
</tbody>
</table>

**Language, Art, Culture**

GERM, ITAL, PORT, RUSS, SPAN or other approved course in a regional language at the 3000- or 4000-level or courses from the list below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>ARTH 1100</td>
<td>Art and Society: Prehistory to the Renaissance</td>
</tr>
<tr>
<td>ARTH 1101</td>
<td>Art and Society: Renaissance to the Present</td>
</tr>
<tr>
<td>ARTH 2202</td>
<td>Medieval Architecture and Art</td>
</tr>
<tr>
<td>ARTH 2300</td>
<td>Italian Renaissance Art</td>
</tr>
<tr>
<td>ARTH 2310</td>
<td>Architecture of the Early Modern World [1400-1750]</td>
</tr>
<tr>
<td>ARTH 2404</td>
<td>Art of the 17th and 18th Centuries</td>
</tr>
<tr>
<td>ARTH 2502</td>
<td>Art of the 19th Century</td>
</tr>
<tr>
<td>ARTH 2510</td>
<td>Architecture of the 18th and 19th Centuries</td>
</tr>
<tr>
<td>ARTH 3710</td>
<td>Architecture and Empire</td>
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<tr>
<td>FILM 2606</td>
<td>History of World Cinema I</td>
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<tr>
<td>FILM 2607</td>
<td>History of World Cinema II</td>
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<tr>
<td>FREN 2100</td>
<td>French 4</td>
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<tr>
<td>FREN 2110</td>
<td>French 4: Writing</td>
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<tr>
<td>FREN 2202</td>
<td>Introduction aux études littéraires 1</td>
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<tr>
<td>FREN 3212</td>
<td>Des manuscrits aux belles-lettres : de la littérature médiévale à l'humanisme</td>
</tr>
<tr>
<td>FREN 3213</td>
<td>Du Baroque aux Lumières</td>
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<tr>
<td>FREN 3214</td>
<td>Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950</td>
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<td>FREN 3215</td>
<td>Les ères du soupçon : contemporanéités de la littérature</td>
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<tr>
<td>HIST 2102</td>
<td>Modern Thought and Culture: the Nineteenth Century</td>
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<tr>
<td>HIST 2103</td>
<td>Modern Thought and Culture: the Twentieth Century</td>
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<tr>
<td>HIST 3005</td>
<td>Medieval Aristocratic Life</td>
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<td>HIST 3006</td>
<td>Medieval Religious Life</td>
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<td>HIST 3007</td>
<td>Medieval Intellectual Life</td>
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<td>HIST 3105</td>
<td>Renaissance Europe</td>
</tr>
<tr>
<td>HIST 3123</td>
<td>The Enlightenment</td>
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<tr>
<td>HIST 3124</td>
<td>The Enlightenment and Its Aftermath</td>
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<tr>
<td>MUSI 1001</td>
<td>A History of Western Classical Music: Medieval to the Present</td>
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<tr>
<td>MUSI 2102</td>
<td>Music in an Age of Spectacle, Commerce, and Colonization</td>
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<td>MUSI 2103</td>
<td>Music in an Age of Order, Invention, and Revolution</td>
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<tr>
<td>MUSI 2107</td>
<td>Music in an Age of Turmoil, Innovation, and Pluralism</td>
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<tr>
<td>MUSI 3400</td>
<td>A History of Opera before 1800</td>
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<tr>
<td>MUSI 3401</td>
<td>A History of Opera from 1800 to 1945</td>
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<tr>
<td>PHIL 1610</td>
<td>Great Philosophical Ideas, Part 1</td>
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<tr>
<td>PHIL 1620</td>
<td>Great Philosophical Ideas, Part 2</td>
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PHIL 2005 [1.0] Ancient Philosophy: The Search for Wisdom
PHIL 2101 [0.5] History of Ethics
PHIL 2103 [0.5] Philosophy of Human Rights
PHIL 2202 [0.5] Topics in Marxist Philosophy
PHIL 3002 [0.5] 17th Century Philosophy
PHIL 3003 [0.5] 18th Century Philosophy
PHIL 3005 [0.5] 19th Century Philosophy
PHIL 3009 [0.5] Topics in European Philosophy
PHIL 3330 [0.5] Topics in History of Social and Political Philosophy
PHIL 3340 [0.5] Topics in Contemporary Social and Political Philosophy
PSCI 2301 [0.5] History of Political Thought I
PSCI 2302 [0.5] History of Political Thought II
PSCI 3308 [0.5] Modern Political Thought
PSCI 3312 [0.5] Enlightenment Political Thought
RELI 1710 [0.5] Judaism, Christianity, Islam
RELI 2110 [0.5] Judaism
RELI 2121 [0.5] Hebrew Bible
RELI 2230 [0.5] Global Christianity
RELI 2310 [0.5] Islam

Context and Methods for Regional Studies
COMS 2700 [0.5] Global Media and Communication
COMS 3109 [0.5] Communication, Culture and Identity
ECON 3600 [0.5] Introduction to International Economics
ECON 3601 [0.5] Introduction to International Trade
ECON 3602 [0.5] International Monetary Problems
ECON 3870 [0.5] Comparative Economic Systems
FYSM 1603 [1.0] Full-Year Seminar in European and Russian Studies
FYSM 1614 [0.5] One-Term Seminar in European and Russian Studies
GEOG 2023 [0.5] Cities, Inequality and Urban Change
GEOG 2200 [0.5] Global Connections
GEOG 2300 [0.5] Space, Place and Culture
GEOG 2500 [0.5] Climate Change: Social Science Perspectives
GEOG 3021 [0.5] Geographies of Culture and Identity
GEOG 3023 [0.5] Cities in a Global World
GEOG 3404 [0.5] Geographies of Economic Development
GINS 3930 [0.5] Carleton International Placement
GINS 3931 [1.0] Carleton International Placement
HIST 1001 [1.0] The Making of Europe
HIST 1002 [1.0] Europe in the 20th Century
HIST 2811 [0.5] Public History from Memory to Museums
HIST 3809 [0.5] Historical Representations
HIST 3810 [0.5] Historical Theory
HIST 3812 [0.5] Digital History
HIST 3813 [0.5] Problems in Global and Transnational Histories
IPAF 2000 [0.5] Quantitative Approaches to Policy Analysis
IPAF 4900 [0.5] Research Experience Course
LAW 2105 [0.5] Social Justice and Human Rights
LAW 2601 [0.5] Public International Law
LAW 3602 [0.5] International Human Rights
LAW 3604 [0.5] International Organizations
LAW 3207 [0.5] International Transactions
MGDS 2000 [0.5] Global Migration and Transnationalism
PSCI 1200 [0.5] World Politics
PSCI 2101 [0.5] Comparative Politics of the Global North
PSCI 2500 [0.5] Gender and Politics
PSCI 2601 [0.5] International Relations: Global Politics
PSCI 2602 [0.5] International Relations: Global Political Economy
PSCI 2701 [0.5] Introduction to Research Methods in Political Science
PSCI 2702 [0.5] Quantitative Research Methods in Political Science
PSCI 3107 [0.5] The Causes of War
PSCI 3307 [0.5] Politics of Human Rights
PSCI 3309 [0.5] Modern Ideologies
PSCI 3600 [0.5] International Institutions
PSCI 3703 [0.5] Governing in the Global Economy
SOCI 2000 [0.5] Foundations of Sociological Inquiry
SOCI 2001 [0.5] Introduction to Qualitative Research Methods
SOCI 2005 [1.0] Histories of Sociological Thought
SOCI 2020 [0.5] Race and Ethnicity
SOCI 2045 [0.5] Gender and Society
SOCI 2160 [0.5] War and Society
SOCI 2702 [0.5] Power and Social Change
WGST 2800 [0.5] Intersectional Identities
WGST 2801 [0.5] Activism, Feminisms, and Social Justice
WGST 3803 [0.5] Feminisms and Transnationalism

EURUS 4000-level Honours Courses
EURR 4002 [0.5] Post-Soviet States and Societies
EURR 4003 [0.5] Social and Political Perspectives in Europe
EURR 4008 [0.5] Nationalism and Ethnic Conflict in Eastern and Central Europe
EURR 4100 [0.5] Nation-Building in Central and Eastern Europe
EURR 4101 [0.5] The Balkans in Transition – 1918 to 1989
EURR 4102 [0.5] The Balkans since 1989
EURR 4103 [0.5] The Great Russian Novel
EURR 4104 [0.5] European Integration and European Security
EURR 4106 [0.5] Selected Topics in European Integration Studies
EURR 4107 [0.5] Russia’s Regional and Global Ambitions
EURR 4201 [0.5] Special Topics in European Studies
EURR 4202 [0.5] Special Topics in Russian and Eurasian Studies
EURR 4204 [0.5] Central Europe, Past and Present
Specialization in French and Francophone Studies
B.G.In.S. Honours (20.0 credits)

A. Credits included in the Major CGPA (12.0 credits)
1. 4.5 credits in: Core Courses 4.5
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   GINS 4090 [0.5] Honours Seminar in Global and International Studies
2. 0.0 credit in: International Experience Requirement Preparation
   GINS 1300 [0.0] International Experience Requirement Preparation
3. 7.5 credits in: the Specialization
   a. 3.0 credits in: Foundations 3.0
      FYSM 1408 [1.0] French on the World Stage
      FREN 2202 [0.5] Introduction aux études littéraires 1
      FREN 2203 [0.5] Introduction aux études littéraires 2
      FREN 2401 [1.0] Introduction à la linguistique française
   b. 0.5 credit in: Methods 0.5
      FREN 3050 [0.5] Compétences critiques
   c. 1.5 credits from: French and Francophone Studies at the 3000-level 1.5
      FREN 3213 [0.5] Du Baroque aux Lumières
      FREN 3214 [0.5] Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950
      FREN 3215 [0.5] Les êtres du soupçon : contemporanéités de la littérature
   d. 1.0 credit in: French and Francophone Studies - International Experience 1.0
      1.0 credit in approved courses at the 3000-level or above taken in French, on exchange or a letter of permission, at a French-language university abroad
   e. 1.5 credits from: French and Francophone Studies at the 4000-level 1.5
      FREN 4212 [0.5] Littératures francophones
      FREN 4213 [0.5] Littérature québécoise et canadienne d'expression française
      FREN 4214 [0.5] Genre et mouvement
      FREN 4215 [0.5] Problématiques contemporaines
      FREN 4300 [0.5] Experiential learning in French and Francophone studies
      FREN 4412 [0.5] Diversité du français
      FREN 4413 [0.5] Diachronie du français
      FREN 4414 [0.5] Analyse du français
      FREN 4415 [0.5] Variation du français

B. Credits Not Included in the Major CGPA (8.0 credits)
4. 8.0 credits in: Free Electives 8.0

C. Additional Requirements
5. The International Experience Requirement must be met through an international exchange or a letter of permission (see item 3.d).
6. To satisfy the Language Requirement, students must complete FREN 2100 [1.0] French 4, FREN 3701 [0.5] Francas oral and FREN 3702 [0.5] Francas ecrit, or their equivalent.

Total Credits 20.0

Specialization in Global and Transnational History
B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)
1. 4.5 credits in: Core Courses 4.5
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   GINS 4090 [0.5] Honours Seminar in Global and International Studies
2. 0.0 credit in: International Experience Requirement Preparation
3. 7.5 credits in: the Specialization
   a. 1.0 credit in: Foundations (1.0)
      HIST 1707
   b. 1.0 credit from: Regional History (1.0)
      HIST 2308
      HIST 2309
      HIST 2312
      HIST 2506
      HIST 2706
      HIST 2707
      HIST 2710
      HIST 2802
      HIST 2803
   c. 4.0 credits from: Themes in History (4.0)
      HIST 2000
      HIST 2204
      HIST 2206
      HIST 2809
      HIST 3001
      HIST 3106
      HIST 3109
      HIST 3111
      HIST 3115
      HIST 3210
      HIST 3213
      HIST 3214
      HIST 3216
      HIST 3217
      HIST 3310
      HIST 3304
      HIST 3306
      HIST 3500
      HIST 3510
      HIST 3511
      HIST 3704
      HIST 3710
      HIST 3714
      HIST 3715
      HIST 3717
      HIST 3800
      HIST 3801
      HIST 3809
      HIST 3810
      HIST 3811
      HIST 3820
      HIST 3905
      HIST 3906
      HIST 3907
      HIST 3908
   d. 0.5 credit in: Advanced Core (0.5)
      HIST 3813

4. 8.0 credits in free electives (8.0)

5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits (20.0)

Specialization in Global Development

B.G.In.S. Honours (20.0 credits)

A. Credits included in the Major CGPA (12.0 credits)

   1. 4.5 credits in: Core Courses (4.5)
      GINS 1000
      GINS 1010
      GINS 1020
      GINS 2000
      GINS 2010
      GINS 2020
      GINS 3010
      GINS 3020
      GINS 4090

   2. 0.0 credit in: International Experience Requirement Preparation
      GINS 1300

   3. 7.5 credits in: the Specialization
      a. 0.5 credit in: Foundations (0.5)
         GINS 1100
      b. 1.5 credits in: Anthropology (1.5)
         ANTH 1001
         or ANTH 1002
      c. 1.5 credits in: Economics (1.5)
         ECON 1001
         ECON 1002

And one of:

   ANTH 3010
   ANTH 3025
   ANTH 3027
   ANTH 3040
   ANTH 3045
   ANTH 3355

   c. 1.5 credits in: Economics (1.5)
      ECON 1001
      ECON 1002
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ECON 3508</td>
<td>Introduction to Economic Development</td>
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<tr>
<td>d. 1.5</td>
<td>credits in: Geography</td>
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<tr>
<td>GEOG 2200</td>
<td>Global Connections</td>
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<tr>
<td>GEOG 3404</td>
<td>Geographies of Economic Development</td>
</tr>
<tr>
<td>And one of:</td>
<td></td>
</tr>
<tr>
<td>GEOG 2023</td>
<td>Cities, Inequality and Urban Change</td>
</tr>
<tr>
<td>GEOG 3023</td>
<td>Cities in a Global World</td>
</tr>
<tr>
<td>GEOG 3209</td>
<td>Sustainability and Environment in the South</td>
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<td>e. 1.5</td>
<td>credits in: Political Science</td>
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<tr>
<td>PSCI 2102</td>
<td>Comparative Politics of the Global South</td>
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<td>And one of:</td>
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<tr>
<td>PSCI 3100</td>
<td>Politics of Development in Africa</td>
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<tr>
<td>PSCI 3204</td>
<td>Politics of Latin America</td>
</tr>
<tr>
<td>PSCI 3502</td>
<td>Gender and Politics: Global South</td>
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<tr>
<td>PSCI 3700</td>
<td>Government and Politics of South Asia</td>
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<td>f. 0.5</td>
<td>credit in: Research Methodologies</td>
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<tr>
<td>IPAF 2000</td>
<td>Quantitative Approaches to Policy Analysis</td>
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<td>g. 0.5</td>
<td>credits from: Advanced courses</td>
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<td>ANTH 4005</td>
<td>Health and Globalization</td>
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<td>ANTH 4109/5109</td>
<td>Ethnography, Gender and Globalization</td>
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<td>ANTH 4560</td>
<td>Economic Anthropology</td>
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<tr>
<td>ANTH 4610</td>
<td>Advanced Studies in Indigenous Peoples</td>
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<tr>
<td>ANTH 4620</td>
<td>Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research</td>
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<td>ANTH 4730</td>
<td>Colonialism and Post-Colonialism</td>
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<td>ANTH 4750</td>
<td>Advanced Studies in Globalization and Citizenship</td>
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<td>ECON 3509</td>
<td>Development Planning and Project Evaluation</td>
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<td>ECON 3510</td>
<td>African Economic Development</td>
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<td>ECON 4507</td>
<td>The Economics of Development</td>
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<td>ECON 4508</td>
<td>International Aspects of Economic Development</td>
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<td>ECON 4601</td>
<td>International Trade Theory and Policy</td>
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<tr>
<td>ECON 4602</td>
<td>International Monetary Theory and Policy</td>
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<tr>
<td>ECON 4800</td>
<td>Spatial Economics</td>
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<td>GEOG 4021</td>
<td>Seminar in Culture, Identity and Place</td>
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<tr>
<td>GEOG 4024</td>
<td>Seminar in Globalization</td>
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<tr>
<td>PSCI 4104</td>
<td>Development in the Global South - Theory and Practice (if not used towards (e) above)</td>
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<td>PSCI 4105</td>
<td>Selected Problems in Development in the Global South</td>
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<tr>
<td>PSCI 4207</td>
<td>Globalization, Adjustment and Democracy in Africa</td>
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<tr>
<td>PSCI 4500</td>
<td>Gender and Globalization</td>
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<tr>
<td>PSCI 4603</td>
<td>Analysis of International Political Economy</td>
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<tr>
<td>PSCI 4605</td>
<td>Gender in International Relations</td>
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<td>PSCI 4800</td>
<td>Advanced International Relations Theory</td>
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<tr>
<td>PSCI 4805</td>
<td>Political Economy of Global Money and Finance</td>
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<tr>
<td>PSCI 4808</td>
<td>Global Environmental Politics</td>
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Note: To meet the prerequisite requirements for the economics courses listed among the 4000-level Global Development electives above, students must have obtained a grade of C- or higher in one or both of ECON 2030 and ECON 2103 and, in the case of ECON 4800, a grade of C- or higher in ECON 2220 as well.

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Specialization in Global Genders and Sexualities B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses

GINS 1000 [0.5] Global History
GINS 1010 [0.5] International Law and Politics
GINS 1020 [0.5] Ethnography, Globalization and Culture
GINS 2000 [0.5] Ethics and Globalization
GINS 2010 [0.5] Globalization and International Economic Issues
GINS 2020 [0.5] Global Literatures
GINS 3010 [0.5] Global and International Theory
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: The Specialization

a. 1.5 credits in: Foundations

SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
WGST 1808 [1.0] Introduction to Feminist Social Transformation

b. 2.0 credits from: Theorizing Bodies and Borders

CRST 2001 [0.5] Introduction to Critical Race Studies
CRST 4001 [0.5] Advanced Critical Race Studies
SXST 2102 [0.5] Sexuality, Gender, and Security
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>SXST 3103 [0.5]</td>
<td>Sexuality and Disability</td>
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<tr>
<td>SXST 3104 [0.5]</td>
<td>Transnational Sexualities</td>
</tr>
<tr>
<td>SXST 3106 [0.5]</td>
<td>Queer(ing) Archives</td>
</tr>
<tr>
<td>WGST 2803 [0.5]</td>
<td>Body Matters: The Politics of Bodies</td>
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<tr>
<td>WGST 2811 [0.5]</td>
<td>Masculinities</td>
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<tr>
<td>WGST 3001 [0.5]</td>
<td>Theory and Research in Feminist Social Transformation</td>
</tr>
<tr>
<td>HUMR 2202 [0.5]</td>
<td>Power Relations and Human Rights</td>
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<tr>
<td>HUMR 2301 [0.5]</td>
<td>Human Rights and Sexualities</td>
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<tr>
<td>HUMR 3202 [0.5]</td>
<td>Human Rights and Resistance</td>
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<td>WGST 2801 [0.5]</td>
<td>Activism, Feminism, and Social Justice</td>
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<td>WGST 2812 [0.5]</td>
<td>Selected Topics in Women’s and Gender Studies</td>
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<td>WGST 3812 [0.5]</td>
<td>Selected Topics in Women’s and Gender Studies</td>
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<tr>
<td>WGST 3803 [0.5]</td>
<td>Feminisms and Transnationalism</td>
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<tr>
<td>WGST 3806 [0.5]</td>
<td>Girldhods</td>
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<td>WGST 3807 [0.5]</td>
<td>Gendered Violence</td>
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<td>HUMR 4302 [0.5]</td>
<td>Transgender Human Rights</td>
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<td>HUMR 4401 [0.5]</td>
<td>Gender, Citizenship and Social Justice in a Transnational World</td>
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<tr>
<td>SXST 4101 [0.5]</td>
<td>Interdisciplinary Studies of Sexuality</td>
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<td>SXST 4103 [0.5]</td>
<td>Politics of Kink</td>
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<td>WGST 4812 [0.5]</td>
<td>Selected Topics in Women’s and Gender Studies</td>
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<td>SOCI 3000</td>
<td>International Experience Requirement Preparation</td>
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<tr>
<td>GINS 1001 [0.5]</td>
<td>Introduction to Sociology I &amp; SOCIO 1002 [0.5]</td>
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<tr>
<td>SOCIO 2000 [0.5]</td>
<td>Foundations of Sociological Inquiry</td>
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<tr>
<td>SOCIO 2010 [0.5]</td>
<td>Critical Approaches to Economic Inequality</td>
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<tr>
<td>SOCIO 2020 [0.5]</td>
<td>Race and Ethnicity</td>
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<tr>
<td>SOCIO 2030 [0.5]</td>
<td>Work, Industry and Occupations</td>
</tr>
<tr>
<td>SOCIO 2035 [0.5]</td>
<td>Technology, Culture and Society</td>
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<td>SOCIO 2040 [0.5]</td>
<td>Food, Culture and Society</td>
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<tr>
<td>SOCIO 2045 [0.5]</td>
<td>Gender and Society</td>
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<tr>
<td>SOCIO 2060 [0.5]</td>
<td>Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives</td>
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<tr>
<td>SOCIO 2160 [0.5]</td>
<td>War and Society</td>
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<td>SOCIO 2170 [0.5]</td>
<td>Foundations in Social Justice</td>
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<td>SOCIO 2702 [0.5]</td>
<td>Power and Social Change</td>
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<td>SOCIO 2705 [0.5]</td>
<td>Popular Culture in the Digital Age</td>
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<tr>
<td>SOCIO 2810 [0.5]</td>
<td>Selected Topics in Sociology</td>
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<td>SOCIO 2820 [0.5]</td>
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<tr>
<td>SOCIO 3006 [0.5]</td>
<td>Thinking the Social: Theories and Approaches</td>
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<tr>
<td>SOCIO 3010 [0.5]</td>
<td>Power, Oppression and Resistance</td>
</tr>
<tr>
<td>SOCIO 3019 [0.5]</td>
<td>Sociology of International Migration</td>
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<tr>
<td>SOCIO 3020 [0.5]</td>
<td>Studies in Race and Ethnicity</td>
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<tr>
<td>SOCIO 3027 [0.5]</td>
<td>Globalization and Human Rights</td>
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<tr>
<td>SOCIO 3030 [0.5]</td>
<td>Studies in Work, Industry and Occupations: Authority and Expertise</td>
</tr>
<tr>
<td>SOCIO 3035 [0.5]</td>
<td>Science, Culture and Society: Social Studies of Science</td>
</tr>
<tr>
<td>SOCIO 3038 [0.5]</td>
<td>Studies in Urban Sociology</td>
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<tr>
<td>SOCIO 3040 [0.5]</td>
<td>Studies in the Sociology of Gender</td>
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<tr>
<td>SOCIO 3044 [0.5]</td>
<td>Sociology of Sex and Sexuality</td>
</tr>
<tr>
<td>SOCIO 3045 [0.5]</td>
<td>Children and Childhood in a Globalized World</td>
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<tr>
<td>SOCIO 3160 [0.5]</td>
<td>Political Violence</td>
</tr>
</tbody>
</table>

Specialization in Global Inequalities and Social Change

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. **4.5 credits in: Core Courses**
   - GINS 1000 [0.5] - Global History
   - GINS 1010 [0.5] - International Law and Politics
   - GINS 1020 [0.5] - Ethnography, Globalization and Culture
   - GINS 2000 [0.5] - Ethics and Globalization
   - GINS 2010 [0.5] - Globalization and International Economic Issues
   - GINS 2020 [0.5] - Global Literatures
   - GINS 3010 [0.5] - Global and International Theory
   - GINS 3020 [0.5] - Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] - Honours Seminar in Global and International Studies

2. **0.0 credit in: International Experience Requirement Preparation**

3. **7.5 credits in: the Specialization**

   a. **1.0 credit in: Foundations**
      - SOCIO 1001 [0.5] - Introduction to Sociology I & SOCIO 1002 [0.5] - Introduction to Sociology II
   
   b. **1.5 credits in: Research Methods**
      - SOCIO 2000 [0.5] - Foundations of Sociological Inquiry
      - Or:
      - SOCIO 2011 [0.5] - Introduction to Qualitative Research Methods
   
   c. **1.0 credit in: Theory**
      - SOCIO 2005 [1.0] - Histories of Sociological Thought
   
   d. **1.0 credit from: Global Inequalities and Social Change at the 2000-level**
      - SOCIO 2150 [0.5] - Critical Approaches to Economic Inequality
      - SOCIO 2150 [0.5] - Race and Ethnicity
      - SOCIO 2170 [0.5] - Work, Industry and Occupations
      - SOCIO 2205 [0.5] - Technology, Culture and Society
      - SOCIO 2800 [0.5] - Food, Culture and Society
      - SOCIO 2810 [0.5] - Gender and Society
      - SOCIO 2820 [0.5] - Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
   
   e. **1.5 credits from: Global Inequalities and Social Change at the 3000-level**
      - SOCIO 3006 [0.5] - Thinking the Social: Theories and Approaches
      - SOCIO 3010 [0.5] - Power, Oppression and Resistance
      - SOCIO 3019 [0.5] - Sociology of International Migration
      - SOCIO 3020 [0.5] - Studies in Race and Ethnicity
      - SOCIO 3027 [0.5] - Globalization and Human Rights
      - SOCIO 3030 [0.5] - Studies in Work, Industry and Occupations: Authority and Expertise
      - SOCIO 3035 [0.5] - Science, Culture and Society: Social Studies of Science
      - SOCIO 3038 [0.5] - Studies in Urban Sociology
      - SOCIO 3040 [0.5] - Studies in the Sociology of Gender
      - SOCIO 3044 [0.5] - Sociology of Sex and Sexuality
      - SOCIO 3045 [0.5] - Children and Childhood in a Globalized World
      - SOCIO 3160 [0.5] - Political Violence
Specialization in Global Law and Social Justice B.G.In.S. Honours (20.0 credits)

This Specialization is also available with a Mention: français option.

A. Credits Included in the Major CGPA (12.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>GINS 1000 [0.5]</td>
<td>Global History</td>
</tr>
<tr>
<td>GINS 1010 [0.5]</td>
<td>International Law and Politics</td>
</tr>
<tr>
<td>GINS 1020 [0.5]</td>
<td>Ethnography, Globalization and Culture</td>
</tr>
<tr>
<td>GINS 2000 [0.5]</td>
<td>Ethics and Globalization</td>
</tr>
<tr>
<td>GINS 2010 [0.5]</td>
<td>Globalization and International Economic Issues</td>
</tr>
<tr>
<td>GINS 2020 [0.5]</td>
<td>Global Literatures</td>
</tr>
<tr>
<td>GINS 3010 [0.5]</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
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</table>

2. 0.0 credit in: International Experience Requirement Preparation

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GINS 1300 [0.0]</td>
<td>International Experience Requirement Preparation</td>
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</table>

3. 7.5 credits in: the Specialization

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>LAWS 1001 [0.5]</td>
<td>Introduction to Legal Studies 1</td>
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<tr>
<td>LAWS 1002 [0.5]</td>
<td>Introduction to Legal Studies 2</td>
</tr>
<tr>
<td>LAWS 2908 [0.5]</td>
<td>Methodological Approaches in Legal Studies 1</td>
</tr>
<tr>
<td>LAWS 2105 [0.5]</td>
<td>Social Justice and Human Rights</td>
</tr>
<tr>
<td>LAWS 3601 [0.5]</td>
<td>International Human Rights</td>
</tr>
<tr>
<td>LAWS 3604 [0.5]</td>
<td>International Organizations</td>
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<tr>
<td>LAWS 3602 [0.5]</td>
<td>International Human Rights (if not used in f)</td>
</tr>
<tr>
<td>LAWS 3609 [0.5]</td>
<td>The Charter of Rights Topics</td>
</tr>
<tr>
<td>LAWS 3604 [0.5]</td>
<td>International Organizations (if not used in d)</td>
</tr>
<tr>
<td>LAWS 4101 [0.5]</td>
<td>Contemporary Justice Theories</td>
</tr>
<tr>
<td>LAWS 4102 [0.5]</td>
<td>Controversies in Rights Theory</td>
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<tr>
<td>LAWS 4105 [0.5]</td>
<td>Global Justice Theory (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4106 [0.5]</td>
<td>Law and Violence</td>
</tr>
<tr>
<td>LAWS 4200 [0.5]</td>
<td>International Economic Law (if not used in f)</td>
</tr>
</tbody>
</table>

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits: 20.0
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>LAWS 4601 [0.5]</td>
<td>Transnational Law and Human Rights (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4603 [0.5]</td>
<td>Transitional Justice (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4605 [0.5]</td>
<td>Topics in International Law</td>
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<tr>
<td>LAWS 4606 [0.5]</td>
<td>International Law of Armed Conflict (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4607 [0.5]</td>
<td>Immigration and Refugee Law (if not used in f)</td>
</tr>
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<td>LAWS 4610 [0.5]</td>
<td>Special Topics in Transnational Law and Human Rights</td>
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<tr>
<td>LAWS 4800 [0.5]</td>
<td>Environment and Social Justice</td>
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<tr>
<td>LAWS 4901 [0.5]</td>
<td>Tutorial in Law (topic in Global Law and Social Justice)</td>
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<td>LAWS 4902 [0.5]</td>
<td>Tutorial in Law (topic in Global Law and Social Justice)</td>
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<td>LAWS 4903 [0.5]</td>
<td>Advanced Legal Topics (topic in Global Law and Social Justice)</td>
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<td>LAWS 4904 [0.5]</td>
<td>Advanced Legal Topics (topic in Global Law and Social Justice)</td>
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<td>GINS 4908 [1.0]</td>
<td>Honours Research Essay (topic in Global Law and Social Justice)</td>
</tr>
<tr>
<td>HUMR 4201 [0.5]</td>
<td>Citizenship and Human Rights</td>
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<tr>
<td>HUMR 4401 [0.5]</td>
<td>Gender, Citizenship and Social Justice in a Transnational World</td>
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<tr>
<td>HUMR 4502 [0.5]</td>
<td>Global Indigenous Knowledges and Movements</td>
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<td>LAWS 4105 [0.5]</td>
<td>Global Justice Theory</td>
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<td>LAWS 4200 [0.5]</td>
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<td>LAWS 4601 [0.5]</td>
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<td>LAWS 4603 [0.5]</td>
<td>Transitional Justice</td>
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<tr>
<td>LAWS 4606 [0.5]</td>
<td>International Law of Armed Conflict</td>
</tr>
<tr>
<td>LAWS 4607 [0.5]</td>
<td>Immigration and Refugee Law</td>
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**B. Credits Not Included in the Major CGPA (8.0 credits)**

**A. Credits Included in the Major CGPA (12.0 credits)**

1. **4.5 credits in:** Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>GINS 1000 [0.5]</td>
<td>Global History</td>
</tr>
<tr>
<td>GINS 1010 [0.5]</td>
<td>International Law and Politics</td>
</tr>
<tr>
<td>GINS 1020 [0.5]</td>
<td>Ethnography, Globalization and Culture</td>
</tr>
<tr>
<td>GINS 2000 [0.5]</td>
<td>Ethics and Globalization</td>
</tr>
<tr>
<td>GINS 2010 [0.5]</td>
<td>Globalization and International Economic Issues</td>
</tr>
<tr>
<td>GINS 2020 [0.5]</td>
<td>Global Literatures</td>
</tr>
<tr>
<td>GINS 3010 [0.5]</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
<tr>
<td>GINS 4090 [0.5]</td>
<td>Honours Seminar in Global and International Studies</td>
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</table>

2. **0.0 credit in:** International Experience Requirement Preparation

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>GINS 1300 [0.0]</td>
<td>International Experience Requirement Preparation</td>
</tr>
</tbody>
</table>

3. **7.5 credits in:** the Specialization

a. **1.0 credit in:** Foundations

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENGL 1009 [0.5]</td>
<td>Literature in Global Context</td>
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<tr>
<td>ENGL 1010 [0.5]</td>
<td>Writing Essays about Literature</td>
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b. **1.0 credit from:** Methods

<table>
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<tr>
<th>Course Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENGL 2005 [0.5]</td>
<td>Theory and Criticism</td>
</tr>
<tr>
<td>ENGL 3605 [0.5]</td>
<td>Modern and Contemporary Literary Theory</td>
</tr>
<tr>
<td>ENGL 3965 [0.5]</td>
<td>Intro to Postcolonial Theory</td>
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c. **1.0 credit from:** Global Literatures at the 2000-level

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGL 2908 [0.5]</td>
<td>Celtic Literatures</td>
</tr>
<tr>
<td>ENGL 2926 [0.5]</td>
<td>African Literatures I</td>
</tr>
<tr>
<td>ENGL 2927 [0.5]</td>
<td>African Literatures II</td>
</tr>
<tr>
<td>ENGL 2936 [0.5]</td>
<td>South Asian Literatures I</td>
</tr>
<tr>
<td>ENGL 2937 [0.5]</td>
<td>South Asian Literatures II</td>
</tr>
<tr>
<td>ENGL 2956 [0.5]</td>
<td>Literatures of the Americas I</td>
</tr>
<tr>
<td>ENGL 2957 [0.5]</td>
<td>Literatures of the Americas II</td>
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d. **1.0 credit from:** Global Literatures at the 3000-level

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGL 3805 [0.5]</td>
<td>Literature and Culture in Russia and Eurasia</td>
</tr>
<tr>
<td>ENGL 3940 [0.5]</td>
<td>Studies in Diaspora Lit.</td>
</tr>
<tr>
<td>ENGL 3960 [0.5]</td>
<td>Studies in Indigenous Literature</td>
</tr>
<tr>
<td>ENGL 3972 [0.5]</td>
<td>Studies in Postcolonial Literature</td>
</tr>
</tbody>
</table>

e. **1.0 additional credit in Global Literatures courses, not already used in c. or d. above**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 2105 [0.5]</td>
<td>History of the English Language</td>
</tr>
<tr>
<td>ENGL 2700 [0.5]</td>
<td>American Literatures I</td>
</tr>
<tr>
<td>ENGL 2701 [0.5]</td>
<td>American Literatures II</td>
</tr>
<tr>
<td>ENGL 2802 [1.0]</td>
<td>Indigenous and Canadian Literatures</td>
</tr>
<tr>
<td>GINS 4908 [1.0]</td>
<td>Honours Research Essay (topic in Global Literatures)</td>
</tr>
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<td>GINS 4908 [1.0]</td>
<td>Honours Research Essay (topic in Global Literatures)</td>
</tr>
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</table>

f. **1.0 credit from:** Context for Global Literatures

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENGL 3955 [0.5]</td>
<td>Literature and Culture in Russia and Eurasia</td>
</tr>
<tr>
<td>ENGL 4002 [0.5]</td>
<td>Race, Ethnicity and Canadian Lit.</td>
</tr>
<tr>
<td>ENGL 4947 [0.5]</td>
<td>Issues in Diaspora Literature</td>
</tr>
<tr>
<td>ENGL 4960 [0.5]</td>
<td>Indigenous Literatures I</td>
</tr>
<tr>
<td>ENGL 4961 [0.5]</td>
<td>Indigenous Literatures II</td>
</tr>
<tr>
<td>ENGL 4975 [0.5]</td>
<td>Issues in Postcolonial Theory</td>
</tr>
</tbody>
</table>

**C. Additional Requirements**

5. The International Experience requirement must be met.
6. The Language requirement must be met.

**Total Credits** 20.0

**Specialization in Global Literatures**

**B. G. In. S. Honours (20.0 credits)**

A. **Credits Included in the Major CGPA (12.0 credits)**

1. **4.5 credits in:** Core Courses

<table>
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<td>GINS 1000 [0.5]</td>
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<td>GINS 1020 [0.5]</td>
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<td>GINS 2000 [0.5]</td>
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<td>GINS 2010 [0.5]</td>
<td>Globalization and International Economic Issues</td>
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<tr>
<td>GINS 2020 [0.5]</td>
<td>Global Literatures</td>
</tr>
<tr>
<td>GINS 3010 [0.5]</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
<tr>
<td>GINS 4090 [0.5]</td>
<td>Honours Seminar in Global and International Studies</td>
</tr>
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</table>

**B. Credits Not Included in the Major CGPA (8.0 credits)**

4. **8.0 credits in:** Free Electives

**C. Additional Requirements**

5. The International Experience requirement must be met.
6. The Language requirement must be met.

**Total Credits** 20.0

**Specialization in Global Media and Communication**

**B.G.In.S. Honours (20.0 credits)**

A. **Credits Included in the Major CGPA (12.0 credits)**

1. **4.5 credits in:** Core Courses

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<th>Course Code</th>
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<tr>
<td>GINS 1000 [0.5]</td>
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<tr>
<td>GINS 1010 [0.5]</td>
<td>International Law and Politics</td>
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<td>GINS 1020 [0.5]</td>
<td>Ethnography, Globalization and Culture</td>
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<tr>
<td>GINS 2000 [0.5]</td>
<td>Ethics and Globalization</td>
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<td>GINS 2010 [0.5]</td>
<td>Globalization and International Economic Issues</td>
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<tr>
<td>GINS 2020 [0.5]</td>
<td>Global Literatures</td>
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<tr>
<td>GINS 3010 [0.5]</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
<tr>
<td>GINS 4090 [0.5]</td>
<td>Honours Seminar in Global and International Studies</td>
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</table>
### B. Credits Not Included in the Major CGPA (8.0 credits)

4. **8.0 credits in:** free electives  

#### C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

### Total Credits

**20.0**

### Specialization in Global Migration and Transnationalism

#### B.G.In.S. Honours (20.0 credits)

### A. Credits Included in the Major CGPA (12.0 credits)

1. **4.5 credits in Core Courses**  
   
<table>
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<th>Title</th>
<th>Credits</th>
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<tr>
<td>GINS 1000</td>
<td>Global History</td>
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</tr>
<tr>
<td>GINS 1010</td>
<td>International Law and Politics</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 1020</td>
<td>Ethnography, Globalization and Culture</td>
<td>0.5</td>
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<tr>
<td>GINS 2000</td>
<td>Ethics and Globalization</td>
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<tr>
<td>GINS 2010</td>
<td>Globalization and International Economic Issues</td>
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<td>GINS 3010</td>
<td>Global and International Theory</td>
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<tr>
<td>GINS 3020</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
<td>0.5</td>
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<td>GINS 4090</td>
<td>Honours Seminar in Global and International Studies</td>
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2. **0.0 credit in:** International Experience Requirement Preparation  
   
<table>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GINS 1300</td>
<td>International Experience Requirement Preparation</td>
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</table>

3. **7.5 credits in the Specialization**  
   a. 1.0 credits in: Foundations  
      
      | Course Code | Title                                      | Credits |
      |-------------|--------------------------------------------|---------|
      | COMS 1001  | Foundations in Communication and Media Studies | 0.5 |
      | COMS 1002  | Current Issues in Communication and Media | 0.5     |
      | COMS 2700  | Global Media and Communication             | 0.5     |

d. **2.0 credits in:** Advanced Core (at least 1.0 credits at the 3000 level)  
   
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMS 3001</td>
<td>Quantitative Research in Communication</td>
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</tr>
<tr>
<td>COMS 3002</td>
<td>Qualitative Research in Communication</td>
<td>0.5</td>
</tr>
<tr>
<td>COMS 3400</td>
<td>Ethical Controversies in Media and Communication</td>
<td>0.5</td>
</tr>
<tr>
<td>COMS 3500</td>
<td>Current Issues in Communication and Media Theory</td>
<td>0.5</td>
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d. **3.0 credits from:** Advanced Core  

3.  **7.5 credits in the Specialization**  
   a. 1.0 credits in Foundations  
      
      | Course Code | Title                                      | Credits |
      |-------------|--------------------------------------------|---------|
      | ANTH 1001  | Introduction to Socio-Cultural Anthropology | 0.5 |
      | ANTH 1002  | Introduction to Issues in Anthropology    | 0.5     |
      | CDNS 1102  | Introduction to Canada and the World       | 0.5     |
      | ENGL 1009  | Literature in Global Context               | 0.5     |
      | ENGL 1010  | Writing Essays about Literature            | 0.5     |
      | FYSM 1408  | French on the World Stage                  | 1.0     |
      | GEOG 1020  | People, Places and Environments            | 0.5     |
      | HIST 1707  | World History                              | 1.0     |
      | PSCI 1200  | World Politics                             | 0.5     |
      | PSCI 1501  | Politics of Migration                      | 0.5     |
      | SOCI 1001  | Introduction to Sociology I                | 0.5     |
      | SOCI 1002  | Introduction to Sociology II               | 0.5     |

b. **0.5 credit in:** Specialization Core Course  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGDS 2000</td>
<td>Global Migration and Transnationalism</td>
<td>0.5</td>
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</tbody>
</table>

c. **3.5 credits from Global Migration and Transnationalism Thematic Categories**  

   Must include 0.5 credit from each category:  
   1) Transnationalism in the Arts, Literature, and Music  
   2) Historical, Cultural, and Regional Contexts  
   3) Citizenship, Identity, and Rights  
   4) International Migration, Globalization, and Politics  

   At least 1.0 credit must be at the 3000-level. Only 0.5 credit at the 1000-level.

<table>
<thead>
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<tbody>
<tr>
<td>GINS 4000</td>
<td>Honours Research Essay</td>
<td>1.0</td>
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B. Credits Not Included in the Major CGPA (8.0 credits)
## Categories

1. Transnationalism in the Arts, Literature, and Music
2. Historical, Cultural, and Regional Contexts
3. Citizenship, Identity, and Rights
4. International Migration, Globalization, and Politics

### Approved Courses in Global Migration and Transnationalism

#### 1) Transnationalism in the Arts, Literature, and Music
- **AFRI 3609** [0.5]非洲移動とディアスポラ
- **ARTH 2003** [0.5] 二十世紀加拿大及後現代文化
- **ARTH 2005** [0.5] 二十世紀土著文化
- **ARTH 2006** [0.5] 二十世紀土著文化

#### 2) Historical, Cultural, and Regional Contexts
- **AFRI 1001** [0.5] Introduction to African Studies I
- **AFRI 1002** [0.5] Introduction to African Studies II
- **AFRI 3005** [0.5] African Migrations and Diasporas
- **ANTH 2610** [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research

#### 3) Citizenship, Identity, and Rights
- **CDNS 3600** [0.5] Cultural Politics and Identities in Canada
- **EURR 1001** [0.5] Introduction to European and Russian Studies
- **EURR 2001** [0.5] Current Issues in European Politics and Society

#### 4) International Migration, Globalization, and Politics
- **HIST 2308** [0.5] Colonial Latin America
- **HIST 2309** [0.5] Modern Latin America
- **HIST 2312** [0.5] History of the Indian Ocean World
- **HIST 2706** [0.5] Ancient and Pre-Colonial Africa
- **HIST 2707** [0.5] Modern Africa
- **HIST 2710** [0.5] Introduction to Caribbean History
- **HIST 3111** [0.5] History of Humanitarian Aid
- **HIST 3209** [0.5] Canadian Urban History
- **HIST 3406** [0.5] African-American Women
- **HIST 3413** [0.5] The United States and Its Borderlands
- **HIST 3500** [0.5] Migration and Diaspora in Canada

### Notes:
1. Please see the list of Approved Courses in Global Migration and Transnationalism in this calendar for courses that fulfill the above thematic category and 4000-level Honours requirements.
2. Students are advised that some courses and 4000-level Honours requirements for the BGlnS Migration and Transnationalism Specialization. Students are advised that some courses may have specific prerequisites. Students are encouraged to consult the course calendar when planning their schedules to be aware of those prerequisites and to fulfill them before registering.
3. Some upper-level courses on this list may have specific prerequisites. Students are encouraged to consult the course calendar when planning their schedules to be aware of those prerequisites and to fulfill them before registering. Prerequisites that do not count towards the Major CGPA may be counted once.

### B. Credits Not Included in the Major CGPA (8.0 credits)

1. 8.0 credits in: Free Electives

### C. Additional Requirements

1. The Language requirement must be met.
2. The International Experience requirements must be met.
3. Total Credits 20.0

---

**AFRI 3005 [0.5]** African Migrations and Diasporas
**ECON 3370 [0.5]** The Economics of Migration
**ENGL 3940 [0.5]** Studies in Diaspora Lit.
**HIST 3500 [0.5]** Sociology of International Migration
**HIST 3608 [0.5]** Migration Governance
### 3) Citizenship, Identity, and Rights

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<tr>
<td>HIST 3507</td>
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<td>Indigenous Peoples of Canada</td>
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<td>HIST 3511</td>
<td>Themes in Indigenous History</td>
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<td>Themes in Caribbean History</td>
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<td>HIST 3712</td>
<td>Mexico: Aztecs to NarcoS</td>
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<td>HIST 3714</td>
<td>Holocaust Encounters</td>
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<td>HIST 3715</td>
<td>Themes in South Asian History</td>
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<td>Problems in Global and Transnational Histories</td>
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<td>LACS 1001</td>
<td>Introduction to Latin American and Caribbean Studies I</td>
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### 4) International Migration, Globalization, and Politics

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<td>ECON 3370</td>
<td>The Economics of Migration</td>
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<td>GEOG 2200</td>
<td>Global Connections</td>
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<td>GEOG 2300</td>
<td>Space, Place and Culture</td>
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<td>GEOG 3021</td>
<td>Geographies of Culture and Identity</td>
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<tr>
<td>GEOG 3024</td>
<td>Understanding Globalization</td>
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<td>GEOG 3700</td>
<td>Population Geography</td>
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<td>HIST 3217</td>
<td>Empire and Globalization</td>
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<td>PSCI 3102</td>
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<td>Government and Politics in the Middle East</td>
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<td>Sociology of International Migration</td>
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<td>SOCI 3805</td>
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#### Approved 4000-level Honours Courses in Global Migration and Transnationalism

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<td>History of 'The African Child'</td>
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<td>AFRI 4050</td>
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<td>ANTH 4006</td>
<td>Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology</td>
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<td>ANTH 4020</td>
<td>Advanced Studies in Race and Ethnicity</td>
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<td>ANTH 4109</td>
<td>Ethnography, Gender and Globalization</td>
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<td>ANTH 4200</td>
<td>War, Security and Citizenship</td>
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<td>ANTH 4730</td>
<td>Colonialism and Post-Colonialism</td>
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<td>Advanced Studies in Globalization and Citizenship</td>
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<td>ARTH 4003</td>
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<td>CDNS 4300</td>
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<td>Cultural Landscape and Cultural Identity in Canada</td>
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<td>Gender, Citizenship and Social Justice in a Transnational World</td>
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<td>Practice and Policy in Immigration</td>
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**Specialization in Global Politics**

B.G.In.S. Honours (20.0 Credits)

**A. Credits Included in the Major CGPA (12.0 credits)**

1. **4.5 credits in:** Core Courses 4.5
   - GINS 1000 | Global History
   - GINS 1010 | International Law and Politics
   - GINS 1020 | Ethnography, Globalization and Culture
   - GINS 2000 | Ethics and Globalization
   - GINS 2010 | Globalization and International Economic Issues
   - GINS 2020 | Global Literatures
   - GINS 3010 | Global and International Theory
   - GINS 3020 | Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 | Honours Seminar in Global and International Studies

2. **0.0 credit in:** International Experience Requirement Preparation
   - GINS 1300 | International Experience Requirement Preparation

3. **7.5 credits in:** the Specialization 7.5
   a. **1.5 credits in:** Core Courses
      - GPOL 1500 | Debates in Global Politics
      - GPOL 2500 | Debates in Comparative Politics
      - GPOL 3000 | Themes in Global and Comparative Politics
   b. **0.5 credit in:** Global Political Economy
c. 0.5 credit in Political Science at the 2000 level

PSCI 2002 [0.5] Canadian Politics and Civil Society
PSCI 2003 [0.5] Canadian Political Institutions
PSCI 2101 [0.5] Comparative Politics of the Global North
PSCI 2102 [0.5] Comparative Politics of the Global South
PSCI 2200 [0.5] Introduction to U.S. Politics
PSCI 2401 [0.5] Public Affairs Analysis
PSCI 2500 [0.5] Gender and Politics
d. 1.0 credit in: Research Methodologies
PSCI 2701 [0.5] Introduction to Research Methods in Political Science
PSCI 2702 [0.5] Quantitative Research Methods in Political Science
e. 2.5 credits in: Global Politics Internship, or 2.5 credits from Global Politics Electives
GPOL 3100 [2.5] Internship in Global Politics

Or

2.5 credits from: Global Politics Electives
EURR 2001 [0.5] Current Issues in European Politics and Society
EURR 2002 [0.5] Europe and Russia in the World
PSCI 3100 [0.5] Politics of Development in Africa
PSCI 3101 [0.5] Politics of War in Africa
PSCI 3102 [0.5] Politics of Development of China
PSCI 3103 [0.5] State, Society and Economy in Northeast Asia
PSCI 3105 [0.5] Imperialism
PSCI 3107 [0.5] The Causes of War
PSCI 3108 [0.5] Politics of Popular Culture
PSCI 3109 [0.5] The Politics of Law and Morality
PSCI 3200 [0.5] U.S. Constitutional Politics
PSCI 3203 [0.5] Government and Politics in the Middle East
PSCI 3204 [0.5] Politics of Latin America
PSCI 3205 [0.5] Mexican Politics
PSCI 3206 [0.5] European Democracies
PSCI 3207 [0.5] The Government and Politics of European Integration
PSCI 3208 [0.5] Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5] Reconstruction and Transformation in Europe and Eurasia
PSCI 3302 [0.5] Comparative Political Thought
PSCI 3307 [0.5] Politics of Human Rights
PSCI 3405 [0.5] Comparative Public Policy Analysis
PSCI 3406 [0.5] Public Affairs and Media Strategies
PSCI 3407 [0.5] Public Opinion and Public Policy
PSCI 3502 [0.5] Gender and Politics: Global South
PSCI 3600 [0.5] International Institutions
PSCI 3601 [0.5] Theories of International Politics
PSCI 3603 [0.5] Strategic Thought and International Security
PSCI 3606 [0.5] Canadian Foreign Policy
PSCI 3607 [0.5] North American Security and Defence Policy

f. 1.5 credits from: Honours Seminars and Honours Research Essay
PSCI 3700 [0.5] Government and Politics of South Asia
PSCI 3702 [0.5] Israeli-Palestinian Relations
PSCI 3703 [0.5] Governing in the Global Economy
PSCI 3704 [0.5] Government and Politics of Central and Eastern Europe
PSCI 3801 [0.5] Environmental Politics
PSCI 3802 [0.5] Globalization and Human Rights
PSCI 3805 [0.5] Politics of Race

EURR 4002 [0.5] Post-Soviet States and Societies
EURR 4003 [0.5] Social and Political Perspectives in Europe
EURR 4008 [0.5] Nationalism and Ethnic Conflict in Eastern and Central Europe
EURR 4100 [0.5] Nation-Building in Central and Eastern Europe
EURR 4101 [0.5] The Balkans in Transition – 1918 to 1989
EURR 4104 [0.5] European Integration and European Security
EURR 4106 [0.5] Selected Topics in European Integration Studies
EURR 4107 [0.5] Russia’s Regional and Global Ambitions
EURR 4201 [0.5] Special Topics in European Studies
EURR 4202 [0.5] Special Topics in Russian and Eurasian Studies
EURR 4204 [0.5] Central Europe, Past and Present
EURR 4305 [0.5] Imperial Russia and the Russian Revolution
EURR 4306 [0.5] The Soviet Union: Power and Culture
GINS 4908 [1.0] Honours Research Essay (topic in Global Politics)
PSCI 4008 [0.5] National Security and Intelligence in the Modern State
PSCI 4103 [0.5] The Modern State
PSCI 4104 [0.5] Development in the Global South - Theory and Practice
PSCI 4105 [0.5] Selected Problems in Development in the Global South
PSCI 4203 [0.5] Southern Africa After Apartheid
PSCI 4204 [0.5] Elections
PSCI 4206 [0.5] Indigenous Politics of North America
PSCI 4207 [0.5] Globalization, Adjustment and Democracy in Africa
PSCI 4209 [0.5] Westminster Democracies: Parliaments, Parties and Elections
PSCI 4303 [0.5] Governmentality and Politics
PSCI 4400 [0.5] Socio-Technical Change and Public Policy Design
PSCI 4403 [0.5] Reproductive Rights Policy in North America
PSCI 4407 [0.5] Public Policy: Content and Creation
PSCI 4500 [0.5] Gender and Globalization
PSCI 4501 [0.5] Politics of Identity in Europe and the Russian Area
B.G.In.S. Honours (20.0 credits)

**Community**

Specialization in Global Religions: Identity and Community

1. 4.5 credits in Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in:

**Total Credits** 20.0

3. 7.5 credits in: the Specialization
   
   a. 1.5 credits in Global Religious Studies Core
   - RELI 1741 [0.5] Global Religions: Identity and Community
   - RELI 2741 [0.5] Big Questions in Religious Studies
   - RELI 3741 [0.5] Classical Approaches to Religion

   b. 1.0 credit from Foundations in Judaism, Christianity, and Islam (no more than 0.5 credit at the 1000 level)
   - RELI 1710 [0.5] Judaism, Christianity, Islam
   - RELI 2110 [0.5] Judaism
   - RELI 2121 [0.5] Hebrew Bible
   - RELI 2200 [0.5] Christianity
   - RELI 2220 [0.5] Early Christianity
   - RELI 2230 [0.5] Global Christianity
   - RELI 2310 [0.5] Islam
   - RELI 2330 [0.5] The Qur’an
   - RELI 2350 [0.5] Classical Islamic Thought
   - RELI 2355 [0.5] Islamic Ethics
   - RELI 2735 [0.5] Greek Religion
   - RELI 2737 [0.5] Roman Religion

   c. 1.0 credit from Foundations in Asian or Indigenous Religions (no more than 0.5 credit at the 1000 level)
   - RELI 1712 [0.5] Religions of South and East Asia
   - RELI 2410 [0.5] Buddhism
   - RELI 2510 [0.5] Hinduism
   - RELI 2720 [0.5] Indigenous Religions of Canada
   - RELI 2750 [0.5] Sikhism
   - RELI 2800 [0.5] Indigenous Traditions

   d. 1.0 credit in Advanced Traditions and Contexts
   - RELI 3140 [0.5] Holocaust Encounters
   - RELI 3220 [0.5] Reformation Europe
   - RELI 3230 [0.5] Jesus of Nazareth
   - RELI 3231 [0.5] Paul of Tarsus
   - RELI 3232 [0.5] Christian Discipline
   - RELI 3250 [0.5] Evangelical Christianity in Social-Historical Perspective

   e. 1.5 credits from Comparative and Global Religion (at least 0.5 credit at the third-year level)
   - RELI 2535 [0.5] Religion and Gender
   - RELI 2711 [0.5] Love and Its Myths
   - RELI 2712 [0.5] Religious Diversity of Canada
   - RELI 2713 [0.5] Mystical and Contemplative Traditions
   - RELI 2732 [0.5] Death and Afterlife
   - RELI 2736 [0.5] Religion and Society

5. The International Experience requirement must be met.
6. The Language requirement must be met.
B.G.In.S. Honours (20.0 credits)

Specialization in Globalization and the Environment

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in:
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation
   - GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization
   a. 1.5 credits in: Foundations
      - GEOG 1010 [0.5] Global Environmental Systems
      - GEOG 1020/ENST 2500 [0.5] Places and Environments
      - GEOG 2200 [0.5] Global Connections
   b. 1.5 credits from: Globalization
      - GEOG 2023 [0.5] Cities, Inequality and Urban Change
      - GEOG 2300 [0.5] Space, Place and Culture
      - GEOG 3023 [0.5] Cities in a Global World
      - GEOG 3024 [0.5] Understanding Globalization
      - GEOG 3025 [0.5] Geographies of Selected Regions
      - GEOG 3030 [0.5] Regional Field Excursion
   c. 2.0 credits from: Global Environment
   - ANTH 3355 [0.5] Anthropology and the Environment
   - GEOG 2500/ENST 2500 [0.5] Change: Social Science Perspectives
   - GEOG 3022/ENST 3000 [0.5] Environmental and Natural Resources
   - GEOG 3206 [0.5] Health, Environment, and Society
   - GEOG 3209 [0.5] Sustainability and Environment in the South
   - HUMR 3503 [0.5] Global Environmental Justice
   - PSCI 3801 [0.5] Environmental Politics
   - TSES 3002 [0.5] Energy and Sustainability
   d. 1.0 credit in: Research Methodologies
      - GEOG 4005 [0.5] Directed Studies in Geography
      - GEOG 4022 [0.5] Seminar in People, Resources and Environmental Change
      - GEOG 4023 [0.5] Seminar in Special Topics on the City
      - GEOG 4024 [0.5] Seminar in Globalization
      - PSCI 4808 [0.5] Global Environmental Politics

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits 20.0

Specialization in Globalization, Culture and Power

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation
   - GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization
   a. 1.5 credits in: Foundations
      - GEOG 1010 [0.5] Global Environmental Systems
      - GEOG 1020/ENST 2500 [0.5] Places and Environments
      - GEOG 2200 [0.5] Global Connections
   b. 1.5 credits from: Globalization
      - GEOG 2023 [0.5] Cities, Inequality and Urban Change
      - GEOG 2300 [0.5] Space, Place and Culture
      - GEOG 3023 [0.5] Cities in a Global World
      - GEOG 3024 [0.5] Understanding Globalization
      - GEOG 3025 [0.5] Geographies of Selected Regions
      - GEOG 3030 [0.5] Regional Field Excursion
   c. 2.0 credits from: Global Environment
   - ANTH 3355 [0.5] Anthropology and the Environment
   - GEOG 2500/ENST 2500 [0.5] Change: Social Science Perspectives
   - GEOG 3022/ENST 3000 [0.5] Environmental and Natural Resources
   - GEOG 3206 [0.5] Health, Environment, and Society
   - GEOG 3209 [0.5] Sustainability and Environment in the South
   - HUMR 3503 [0.5] Global Environmental Justice
   - PSCI 3801 [0.5] Environmental Politics
   - TSES 3002 [0.5] Energy and Sustainability
   d. 1.0 credit in: Research Methodologies
      - GEOG 4005 [0.5] Directed Studies in Geography
      - GEOG 4022 [0.5] Seminar in People, Resources and Environmental Change
      - GEOG 4023 [0.5] Seminar in Special Topics on the City
      - GEOG 4024 [0.5] Seminar in Globalization
      - PSCI 4808 [0.5] Global Environmental Politics

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits 20.0
3. **7.5 credits in:** the Specialization  

   a. 2.0 credits in: Foundations  
   ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology  
   or ANTH 1002 [0.5] Introduction to Issues in Anthropology  
   ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology  
   ANTH 3005 [0.5] Ethnographic Research Methods  
   b. 1.0 credit from: Culture and Globalization  
   ANTH 2850 [0.5] Development and Underdevelopment  
   ANTH 3010 [0.5] Language, Culture, and Globalization  
   ANTH 3027 [0.5] Studies in Globalization and Human Rights  
   ANTH 3040 [0.5] The Global Middle Class  
   ANTH 3045 [0.5] Children and Childhood in a Globalized World  
   GEOG 2300 [0.5] Space, Place and Culture  
   GEOG 3021 [0.5] Geographies of Culture and Identity  
   c. 1.0 credit from: Ethnography  
   ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research  
   ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa  
   ANTH 2630 [0.5] Studies in Asian Societies: Current Issues in Anthropological Research  
   ANTH 2635 [0.5] Tradition and Modernity in the Pacific  
   ANTH 2640 [0.5] Andean Ethnography  
   ANTH 2645 [0.5] The Postcolonial Middle East  
   ANTH 2650 [0.5] Ethnography of Mesoamerica  
   ANTH 2660 [0.5] Ethnography of North Africa  
   ANTH 2670 [0.5] Ethnography of Brazil  
   ANTH 2680 [0.5] Anthropology of "Mainstream" North America  
   ANTH 2690 [0.5] Ethnography of a Selected Area  
   d. 2.0 credits from: Topical Explorations in Anthropology  
   ANTH 2020 [0.5] Race and Ethnicity  
   ANTH 2040 [0.5] Anthropology and Gender  
   ANTH 2060 [0.5] Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives  
   ANTH 2080 [0.5] Humans/Animals: the More-than-Human in Social Research  
   ANTH 2510 [0.5] Theories of Human Nature  
   ANTH 3007 [0.5] History of Anthropological Theory  
   ANTH 3008 [0.5] Contemporary Theories in Anthropology  
   ANTH 3020 [0.5] Studies in Race and Ethnicity  
   ANTH 3025 [0.5] Anthropology and Human Rights  
   ANTH 3310 [0.5] Studies in Medical Anthropology  
   ANTH 3355 [0.5] Anthropology and the Environment  
   ANTH 3550 [0.5] Studies in Visual Anthropology  
   ANTH 3570 [0.5] Studies in Art, Culture and Society  
   ANTH 3580 [0.5] Anthropology of Material Culture and Museums  
   ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples  
   ANTH 3800 [0.5] Studies in Applied and Participatory Anthropology  
   ANTH 4007 [0.5] Advanced Studies in Anthropological Theory and Methods  
   ANTH 4020 [0.5] Advanced Studies in Race and Ethnicity  
   ANTH 4215 [0.5] Selected Topics in Anthropology  
   ANTH 4225 [0.5] Selected Topics in Anthropology  
   ANTH 4500 [0.5] Advanced Studies in Culture and Symbols  
   ANTH 4550 [0.5] Advanced Studies in Visual Anthropology  
   ANTH 4570 [0.5] Political Anthropology  
   ANTH 4610 [0.5] Advanced Studies in Indigenous Peoples  
   ANTH 4620 [0.5] Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research  
   e. 1.5 credits from Core Honours Seminars  
   ANTH 4005 [0.5] Health and Globalization  
   ANTH 4006 [0.5] Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology  
   ANTH 4109 [0.5] Ethnography, Gender and Globalization  
   ANTH 4355 [0.5] Anthropology of Natural Resources  
   ANTH 4560 [0.5] Economic Anthropology  
   ANTH 4590 [1.0] Capstone Seminar in Globalization, Culture, and Power  
   ANTH 4730 [0.5] Colonialism and Post-Colonialism  
   ANTH 4750 [0.5] Advanced Studies in Globalization and Citizenship  

B. Credits Not Included in the Major CGPA (8.0 credits)  

4. 8.0 Credits in: Free Electives  

C. Additional Requirements  

5. The International Experience requirement must be met.  
6. The Language requirement must be met.  

**Total Credits**  

**20.0**  

**Specialization in International Economic Policy**  

**B.G.In.S. Honours (20.0 credits)**  

**A. Credits Included in the Major CGPA (12.0 credits)**  

1. **4.5 credits in:** Core Courses  
   GINS 1000 [0.5] Global History  
   GINS 1010 [0.5] International Law and Politics  
   GINS 1020 [0.5] Ethnography, Globalization and Culture  
   GINS 2000 [0.5] Ethics and Globalization  
   GINS 2010 [0.5] Globalization and International Economic Issues  
   GINS 2020 [0.5] Global Literatures  
   GINS 3010 [0.5] Global and International Theory  
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change  
   GINS 4090 [0.5] Honours Seminar in Global and International Studies  

2. **0.0 credit in:** International Experience Requirement Preparation
GINS 1300 [0.0]  International Experience Requirement Preparation

3.  7.5 credits in: the Specialization
a.  1.0 credit in: Foundations  1.0
   ECON 1001 [0.5]  Introduction to Microeconomics & ECON 1002 [0.5]  Introduction to Macroeconomics or FYSM 1003 [1.0]  Introduction to Economics
b.  0.5 credit in: Microeconomics  0.5
   ECON 2001 [0.5]  Intermediate Microeconomics for Non-Mathematical Majors or ECON 2009 [0.5]  Managerial Economics or ECON 2020 [0.5]  Intermediate Microeconomics I: Producers and Market Structure
c.  0.5 credit in: Macroeconomics  0.5
   ECON 2101 [0.5]  Intermediate Macroeconomics for Non-Mathematical Majors or ECON 2102 [0.5]  Intermediate Macroeconomics I
d.  0.5 credit in: Research Methodologies  0.5
   IPAF 2000 [0.5]  Quantitative Approaches to Policy Analysis or ECON 2210 [0.5]  Introductory Statistics for Economics
e.  2.0 credits in: International and Public Economics  2.0
   ECON 3403 [0.5]  Introduction to Public Economics: Expenditures ECON 3405 [0.5]  Introduction to Public Economics: Taxation ECON 3601 [0.5]  Introduction to International Trade ECON 3602 [0.5]  International Monetary Problems f.  3.0 credits from: International Economic Policy  3.0
   ECON 3370 [0.5]  The Economics of Migration ECON 3508 [0.5]  Introduction to Economic Development ECON 3509 [0.5]  Development Planning and Project Evaluation ECON 3510 [0.5]  African Economic Development ECON 3803 [0.5]  The Economics of Natural Resources ECON 3804 [0.5]  Environmental Economics ECON 3807 [0.5]  European Economic Integration ECON 3808 [0.5]  The Economics of Transition ECON 3860 [0.5]  Agricultural Economics ECON 3870 [0.5]  Comparative Economic Systems

Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.

4.  8.0 credits in: Free Electives  8.0

5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits  20.0

<table>
<thead>
<tr>
<th>Specialization in Latin American and Caribbean Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B.G.In.S. Honours (20.0 credits)</strong></td>
</tr>
<tr>
<td><strong>A. Credits Included in Major CGPA (12.0 credits)</strong></td>
</tr>
<tr>
<td>1.  4.5 credits in: Core Courses  4.5</td>
</tr>
<tr>
<td>GINS 1000 [0.5]  Global History</td>
</tr>
<tr>
<td>GINS 1010 [0.5]  International Law and Politics</td>
</tr>
<tr>
<td>GINS 1020 [0.5]  Ethnography, Globalization and Culture</td>
</tr>
<tr>
<td>GINS 2000 [0.5]  Ethics and Globalization</td>
</tr>
<tr>
<td>GINS 2010 [0.5]  Globalization and International Economic Issues</td>
</tr>
<tr>
<td>GINS 2020 [0.5]  Global Literatures</td>
</tr>
<tr>
<td>GINS 3010 [0.5]  Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]  Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
<tr>
<td>GINS 4090 [0.5]  Honours Seminar in Global and International Studies</td>
</tr>
<tr>
<td>2.  0.0 credit in: International Experience Requirement Preparation</td>
</tr>
<tr>
<td>GINS 1300 [0.0]  International Experience Requirement Preparation</td>
</tr>
<tr>
<td>3.  7.5 credits in: the Specialization  7.5</td>
</tr>
<tr>
<td>LACS 1001 [0.5]  Introduction to Latin American and Caribbean Studies I</td>
</tr>
<tr>
<td>LACS 1002 [0.5]  Introduction to Latin American and Caribbean Studies II</td>
</tr>
<tr>
<td>a.  1.0 credit in: Foundations</td>
</tr>
<tr>
<td>LACS 1001 [0.5]  Introduction to Latin American and Caribbean Studies I</td>
</tr>
<tr>
<td>LACS 1002 [0.5]  Introduction to Latin American and Caribbean Studies II</td>
</tr>
<tr>
<td>b.  1.0 credit from: History</td>
</tr>
<tr>
<td>HIST 2308 [0.5]  Colonial Latin America</td>
</tr>
<tr>
<td>HIST 2309 [0.5]  Modern Latin America</td>
</tr>
<tr>
<td>HIST 2710 [0.5]  Introduction to Caribbean History</td>
</tr>
<tr>
<td>HIST 4704 [0.5]  Caribbean and Latin American History</td>
</tr>
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<td>c.  0.5 credit from: Politics</td>
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<tr>
<td>PSCI 3204 [0.5]  Politics of Latin America</td>
</tr>
<tr>
<td>PSCI 3205 [0.5]  Mexican Politics</td>
</tr>
<tr>
<td>d.  3.0 credits from: Courses with LACS Content</td>
</tr>
<tr>
<td>ANTH 2640 [0.5]  Andean Ethnography</td>
</tr>
<tr>
<td>ANTH 2650 [0.5]  Ethnography of Mesoamerica</td>
</tr>
<tr>
<td>ANTH 4730 [0.5]  Colonialism and Post-Colonialism</td>
</tr>
<tr>
<td>ENGL 2956 [0.5]  Literatures of the Americas I</td>
</tr>
<tr>
<td>ENGL 2957 [0.5]  Literatures of the Americas II</td>
</tr>
<tr>
<td>GEOG 3023 [0.5]  Cities in a Global World</td>
</tr>
<tr>
<td>GEOG 3025 [0.5]  Geographies of Selected Regions</td>
</tr>
<tr>
<td>GEOG 3030 [0.5]  Regional Field Excursion</td>
</tr>
<tr>
<td>GINS 3900 [0.5]  International Placement</td>
</tr>
<tr>
<td>GINS 4900 [0.5]  Tutorial in Global and International Studies</td>
</tr>
<tr>
<td>GINS 4908 [1.0]  Honours Research Essay</td>
</tr>
<tr>
<td>HIST 3704 [0.5]  Aztecs</td>
</tr>
<tr>
<td>HIST 3710 [0.5]  Themes in Caribbean History</td>
</tr>
<tr>
<td>HIST 3712 [0.5]  Mexico: Aztecs to Narcos</td>
</tr>
</tbody>
</table>

550 The Academic Year (Graduate and Undergraduate Studies)
### Specialization in Teaching English in Global Contexts

#### B.G.In.S. Honours (20.0 credits)

**A. Credits Included in the Major CGPA (12.0 credits)**

1. **4.5 credits in:**
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. **0.0 credit in:** International Experience Requirement Preparation
   - GINS 1300 [0.0] International Experience Requirement Preparation

3. **7.5 credits in:** the Specialization
   - a. **1.0 credit in:** Foundations
     - ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   - b. **1.5 credits in:** Language Analysis
     - ALDS 2201 [0.5] Analysis of Oral Language Use
     - ALDS 2202 [0.5] Analysis of Written Language Use
     - ALDS 2203 [0.5] Linguistic Theory and Second-Language Learning
   - c. **2.5 credits from:** Language Teaching Electives
     - ALDS 2704 [0.5] Bilingualism
     - ALDS 2705 [0.5] Language and Power
ALDS 3201 [0.5] Cross-Cultural Communication
ALDS 3202 [0.5] Sociolinguistics
ALDS 3405 [0.5] Second Language Writing
ALDS 3701 [0.5] Corpus Linguistics
ALDS 4201 [0.5] Language Testing
ALDS 4306 [0.5] Teaching English as a Second Language: Methodology II
ALDS 4308 [0.5] English for Specific Purposes
ALDS 4709 [0.5] Systemic-Functional Linguistics
d. 1.5 credits in: Language Acquisition 1.5
ALDS 3205 [0.5] English as a Global Language
ALDS 4602 [0.5] Second Language Acquisition
ALDS 4801 [0.5] Major Structures of English
e. 1.0 credits in: Language Teaching 1.0
ALDS 4209 [0.5] Teaching English as a Foreign Language: Methodology for Global Contexts
ALDS 4305 [0.5] Teaching English Language: Methodology I
B. Credits Not Included in the Major CGPA (8.0 credits)
4. 8.0 credits in: free electives 8.0
C. Additional Requirements
5. The International Experience requirement must be met.
6. The Language requirement must be met.
Total Credits 20.0

Streams

Stream in Africa and Globalization
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in: Core Courses 4.0
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from: the Stream 4.0
   Note: Language Requirement -- Students choosing the Africa and Globalisation Stream must fulfill their language requirement with a language relevant to Africa other than English. The Program Director will maintain a list of those languages suitable for this requirement.
   a. Foundations
      AFRI 1001 [0.5] Introduction to African Studies I
      AFRI 1002 [0.5] Introduction to African Studies II
   b. African Regions
      AFRI 2002 [0.5] The Horn of Africa
      AFRI 2003 [0.5] The Great Lakes Region of Africa
      AFRI 2004 [0.5] North Africa
      AFRI 2005 [0.5] West Africa
      AFRI 2006 [0.5] Southern Africa
c. Intermediate African Studies
AFRI 3001 [0.5] Globalization and Popular Culture in Africa
AFRI 3002 [0.5] Regions in Africa: Cultures, Society, Politics
AFRI 3003 [0.5] African Social and Political Thought
AFRI 3004 [0.5] The African City
AFRI 3005 [0.5] African Migrations and Diasporas
d. African Experience
   AFRI 3100 [0.5] African Studies Abroad: Selected Topics
   AFRI 3900 [0.5] Placement
   HI 3706 [0.5] Ancient and Pre-Colonial Africa
   HI 3707 [0.5] Modern Africa
   HI 3717 [0.5] Gender and Sexuality in Africa
   HI 3906 [0.5] Topics in World History (African topic)
e. History
   HI 2706 [0.5] Introduction to Jazz History
   HI 2710 [0.5] Introduction to African History
   HI 3706 [0.5] Ancient and Pre-Colonial Africa
   HI 3707 [0.5] Modern Africa
   HI 3717 [0.5] Gender and Sexuality in Africa
   HI 3906 [0.5] Topics in World History (African topic)
f. Politics
   PSCI 3100 [0.5] Politics of Development in Africa
   PSCI 3101 [0.5] Politics of War in Africa
g. Anthropology
   ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa
   ANTH 2660 [0.5] Ethnography of North Africa
h. Literature and Culture
   AFRI 3609 [0.5] African Cinema
   ENGL 2926 [0.5] African Literatures I
   ENGL 2927 [0.5] African Literatures II
   FREN 4212 [0.5] Littératures francophones
   MUSI 4105 [0.5] Issues and Processes in African Music
i. African Diaspora
   ENGL 2957 [0.5] Literature of the Americas II
   ENGL 3940 [0.5] Studies in Diaspora Lit.
   HIST 2710 [0.5] Introduction to Caribbean History
   HIST 3406 [0.5] African-American Women
   HIST 3710 [0.5] Themes in Caribbean History
   MUSI 2005 [0.5] Introduction to Jazz History
B. Credits Not Included in the Major CGPA (7.0 credits)
3. 7.0 credits in free electives 7.0
C. Additional Requirements
4. The language requirement must be met.

Total Credits 15.0

Stream in Europe and Russia in the World
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits):
1. 4.0 credits in: Core Courses 4.0
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from: the Stream  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI 3207</td>
<td>The Government and Politics of European Integration</td>
</tr>
<tr>
<td>PSCI 3208</td>
<td>Politics in Russia and Ukraine: Power and Contestation</td>
</tr>
<tr>
<td>PSCI 3209</td>
<td>Reconstruction and Transformation in Europe and Eurasia</td>
</tr>
<tr>
<td>PSCI 3608</td>
<td>Migration Governance</td>
</tr>
<tr>
<td>PSCI 3704</td>
<td>Government and Politics of Central and Eastern Europe</td>
</tr>
</tbody>
</table>

3. 7.0 credits in: Free Electives  

4. The BGINS Language requirement must be met in a regional language relevant to Europe and Russia other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

Total Credits  

<table>
<thead>
<tr>
<th>Credits</th>
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<tbody>
<tr>
<td>15.0</td>
</tr>
</tbody>
</table>

Approved Courses in European, Russian, and Eurasian Studies

This list includes categories of approved courses that fulfill specific program requirements for all undergraduate programs in the Institute of European, Russian, and Eurasian Studies (EURUS). Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

Modern History

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HIST 2207</td>
<td>Nineteenth-Century Europe</td>
</tr>
<tr>
<td>HIST 2502</td>
<td>Modern Britain</td>
</tr>
<tr>
<td>HIST 2508</td>
<td>France since 1889</td>
</tr>
<tr>
<td>HIST 2510</td>
<td>19th-Century Germany</td>
</tr>
<tr>
<td>HIST 2511</td>
<td>20th-Century Germany</td>
</tr>
<tr>
<td>HIST 2600</td>
<td>History of Russia</td>
</tr>
<tr>
<td>HIST 2802</td>
<td>War and Society in Modern Europe, 1789-1914</td>
</tr>
<tr>
<td>HIST 2803</td>
<td>War and Society in Modern Europe, 1914-1950</td>
</tr>
<tr>
<td>HIST 3113</td>
<td>Revolution and Society in France, 1789-1799</td>
</tr>
<tr>
<td>HIST 3115</td>
<td>Childhood and Youth in History</td>
</tr>
<tr>
<td>HIST 3217</td>
<td>Empire and Globalization</td>
</tr>
<tr>
<td>HIST 3604</td>
<td>Gender and Sexuality in Modern Europe</td>
</tr>
<tr>
<td>HIST 3714</td>
<td>Holocaust Encounters</td>
</tr>
<tr>
<td>HIST 3800</td>
<td>International History 1914-41</td>
</tr>
<tr>
<td>HIST 3801</td>
<td>International History 1941-90</td>
</tr>
<tr>
<td>HIST 3902</td>
<td>Topics in European History</td>
</tr>
</tbody>
</table>

Politics and Economics

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ECON 3807</td>
<td>European Economic Integration</td>
</tr>
<tr>
<td>ECON 3808</td>
<td>The Economics of Transition</td>
</tr>
<tr>
<td>PSCI 3105</td>
<td>Imperialism</td>
</tr>
<tr>
<td>PSCI 3206</td>
<td>European Democracies</td>
</tr>
</tbody>
</table>

Language, Art, Culture

GERM, ITAL, PORT, RUSS, SPAN or other approved course in a regional language at the 3000- or 4000-level or courses from the list below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTH 1100</td>
<td>Art and Society: Prehistory to the Renaissance</td>
</tr>
<tr>
<td>ARTH 1101</td>
<td>Art and Society: Renaissance to the Present</td>
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**EURUS 4000-level Honours Courses**

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**Stream in French and Francophone Studies**

**B.G.In.S. (15.0 credits)**

**A. Credits included in the Major CGPA (8.0 credits)**

1. **4.0 credits in: Core Courses**
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits from: the Stream**
   a. **3.0 credits in: Foundations**
      - FYSM 1408 [1.0] French on the World Stage
      - FREN 2202 [0.5] Introduction aux études littéraires 1
      - FREN 2203 [0.5] Introduction aux études littéraires 2
      - FREN 2401 [1.0] Introduction à la linguistique française
   b. **1.0 credit in: French and Francophone Studies at the 3000-level**
      - FREN 3213 [0.5] Histoire du français
      - FREN 3214 [0.5] Les éires du soupçons: contemporanéités de la littérature

**B. Credits Not Included in the Major CGPA (7.0 credits)**

3. **7.0 credits in: Free Electives**

**C. Additional Requirements**

4. To satisfy the Language Requirement, students must complete FREN 2100 [1.0] French 4, or its equivalent.

**Total Credits**

15.0

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**Stream in Global and Transnational History**

**B.G.In.S. (15.0 credits)**

**A. Credits Included in the Major CGPA (8.0 credits)**

1. **4.0 credits in: Core Courses**
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits from: the Stream**
   a. **Foundations**
      - HIST 1707 [1.0] World History
   b. **Regional History**
      - HIST 2308 [0.5] Colonial Latin America
      - HIST 2309 [0.5] Modern Latin America
      - HIST 2312 [0.5] History of the Indian Ocean World
      - HIST 2506 [0.5] Introduction to Women’s and Gender History
      - HIST 2706 [0.5] Ancient and Pre-Colonial Africa
      - HIST 2707 [0.5] Modern Africa
      - HIST 2710 [0.5] Introduction to Colonial Africa
      - HIST 2802 [0.5] War and Society in Modern Europe, 1789-1914
      - HIST 2803 [0.5] War and Society in Modern Europe, 1914-1950
   c. **Themes in History**
      - HIST 2000 [1.0] Medieval Europe
      - HIST 2204 [0.5] Early Modern Europe 1350-1650
      - HIST 2206 [0.5] Early Modern Europe 1600-1800
      - HIST 2809 [0.5] The Historian’s Craft
      - HIST 3001 [0.5] History at the Movies
      - HIST 3106 [0.5] Social History of Sexuality
      - HIST 3109 [0.5] Social History of Alcohol
      - HIST 3111 [0.5] History of Humanitarian Aid
      - HIST 3115 [0.5] Childhood and Youth in History
      - HIST 3120 [0.5] History of the Body
      - HIST 3213 [0.5] The Enlightenment
      - HIST 3214 [0.5] The Enlightenment and Its Aftermath
      - HIST 3216 [0.5] The Scientific Revolution
      - HIST 3217 [0.5] Empire and Globalization
Stream in Global Development
B.G.In.S. (15.0 credits)

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   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from: the Stream
   a. Foundations
      GINS 1100 [0.5] Global Development
   b. Anthropology
      ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
      or ANTH 1002 [0.5] Introduction to Issues in Anthropology
      ANTH 2850 [0.5] Development and Underdevelopment
      ANTH 3010 [0.5] Language, Culture, and Globalization
      ANTH 3025 [0.5] Anthropology and Human Rights
   c. Economics
   d. Geography
   e. Research Methodologies
   f. Political Science

B. Credits Not Included in the Major CGPA (7.0 credits):
3. 7.0 credits in free electives 7.0
C. Additional Requirements
4. The Language requirement must be met.

Total Credits 15.0

Stream in Global Genders and Sexualities
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in: Core Courses
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from: the Stream
   a. Foundations
      GINS 1100 [0.5] Global Development
   b. Anthropology
      ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
      or ANTH 1002 [0.5] Introduction to Issues in Anthropology
      ANTH 2850 [0.5] Development and Underdevelopment
      ANTH 3010 [0.5] Language, Culture, and Globalization
      ANTH 3025 [0.5] Anthropology and Human Rights
   c. Economics
   d. Geography
   e. Research Methodologies
   f. Biological Science
   g. Psychological Science
   h. Human and Social Science
   i. Comparative Literature
   j. Visual Studies

B. Credits Not Included in the Major CGPA (7.0 credits):
3. 7.0 credits in free electives 7.0
C. Additional Requirements
4. The Language requirements must be met.

Total Credits 15.0
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<td>Selected Topics in Women's and Gender Studies</td>
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**Stream in Global Inequalities and Social Change**

**B.G.In.S. (15.0 credits)**

**A. Credits Included in the Major CGPA (8.0 credits)**

1. **4.0 credits in: Core Courses**
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits in: the Stream**
   - **1.0 credit in: Foundations**
     - SOCI 1001 [0.5] Introduction to Sociology I
     - SOCI 1002 [0.5] Introduction to Sociology II
   - **Or**
     - SOCI 1003 [1.0] Introduction to Sociological Perspectives
   - **1.0 credit in: Research Methods**
     - SOCI 2000 [0.5] Foundations of Sociological Inquiry
     - 0.5 credit from:

**B. Credits Not Included in the Major CGPA (7.0 credits)**

3. **7.0 credits in free electives** 7.0

**C. Additional Requirements**

4. The Language Requirement must be met.

**Total Credits** 15.0
Stream in Global Law and Social Justice
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in: Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream
   a. Foundations
      - ENGL 1009 [0.5] Literature in Global Context
      - ENGL 1010 [0.5] Writing Essays about Literature
   b. Methods
      - ENGL 2908 [0.5] Methodological Approaches in Legal Studies 1
   c. Second Year Core Courses
      - HUMR 2001 [0.5] Human Rights: Theories and Foundations
      - LAWS 2105 [0.5] Social Justice and Human Rights
      - LAWS 2601 [0.5] Public International Law
   d. Third Year Core Courses
      - LAWS 3602 [0.5] International Human Rights
      - LAWS 3604 [0.5] International Organizations
      - HUMR 3002 [0.5] Right to the City
      - HUMR 3301 [0.5] Racialization, Racism and Human Rights
      - HUMR 3302 [0.5] Culture, Religion, and Women's Human Rights
      - HUMR 3401 [0.5] Histories of Persecution and Genocide
      - HUMR 3501 [0.5] Social, Economic and Cultural Rights
      - HUMR 3503 [0.5] Global Environmental Justice
      - HUMR 3504 [0.5] Public Health and Human Rights
      - LAWS 3207 [0.5] International Transactions
      - LAWS 3208 [0.5] International Trade Regulation
      - LAWS 3503 [0.5] Equality and Discrimination
      - LAWS 3504 [0.5] Law and Aboriginal Peoples
      - LAWS 3509 [0.5] The Charter of Rights Topics
   d. Global Literatures at the 2000-level
      - ENGL 2908 [0.5] Methodological Approaches in Legal Studies 1
      - ENGL 2926 [0.5] African Literatures I
      - ENGL 2927 [0.5] African Literatures II
      - ENGL 2936 [0.5] South Asian Literatures I
      - ENGL 2937 [0.5] South Asian Literatures II
      - ENGL 2956 [0.5] Literature of the Americas I
      - ENGL 2957 [0.5] Literature of the Americas II
   e. Context for Global Literatures
      - ENGL 3805 [0.5] Literature and Culture in Russia and Eurasia
      - ENGL 3940 [0.5] Studies in Diaspora Lit.
      - ENGL 3972 [0.5] Studies in Postcolonial Literature
      - ENGL 3965 [0.5] Intro to Postcolonial Theory

B. Credits Not Included in the Major CGPA (7.0 credits):
3. 7.0 credits in: Free Electives

C. Additional Requirements
4. The language requirement must be met.

Total Credits 15.0

Stream in Global Media and Communication
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in: Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory

Total Credits 15.0
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<tr>
<td>GINS 3020 [0.5]</td>
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**2. 4.0 credits from:** the Stream 4.0

a. **Foundations**
- COMS 1001 [0.5] Foundations in Communication and Media Studies
- COMS 1002 [0.5] Current Issues in Communication and Media
- COMS 2700 [0.5] Global Media and Communication

b. **Introductory Theory and Methods**
- COMS 2003 [0.5] Theoretical Foundations in Communication and Media Studies
- COMS 2004 [0.5] Introduction to Communication Research

c. **Advanced Theory and Methods**
- COMS 3001 [0.5] Quantitative Research in Communication
- COMS 3002 [0.5] Qualitative Research in Communication
- COMS 3500 [0.5] Current Issues in Communication and Media Theory

d. **Advanced Core**
- COMS 3108 [0.5] Media Industries and the Network Society
- COMS 3109 [0.5] Communication, Culture and Identity
- COMS 3311 [0.5] Media and Communication in Regional Contexts

c. **2.5 credits from Global Migration and Transnationalism Thematic Categories**
   1) Transnationalism in the Arts, Literature, and Music
   2) Historical, Cultural, and Regional Contexts
   3) Citizenship, Identity, and Rights
   4) International Migration, Globalization, and Politics

须包括0.5学分在至少三个的四个主题类别。至少0.5学分必须在3000级。

**B. Credits Not Included in the Major CGPA (7.0 credits)**

3. 7.0 credits in: free electives 7.0

**C. Additional Requirements**

4. The Language requirement must be met.

| Total Credits | 15.0 |

## Approved Courses in Global Migration and Transnationalism

This list contains approved courses in Global Migration and Transnationalism that fulfill the four thematic and 4000-level Honours requirements for the BGlnS Global Migration and Transnationalism Stream and Specialization. Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

### Global Migration and Transnationalism Thematic Categories

1) Transnationalism in the Arts, Literature, and Music
2) Historical, Cultural, and Regional Contexts
3) Citizenship, Identity, and Rights
4) International Migration, Globalization, and Politics

### Approved Courses in Global Migration and Transnationalism

1) Transnationalism in the Arts, Literature, and Music
   - AFRI 3609 [0.5] African Cinema
   - ARTH 2003 [0.5] Canadian Twentieth-Century and Contemporary Art
   - ARTH 2005 [0.5] Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
   - ARTH 2006 [0.5] Arts of the First Peoples: The Southwest, the West Coast and the Arctic
   - ARTH 2007 [0.5] Asian Art
   - ARTH 2008 [0.5] Inuit Art
   - ARTH 2107 [0.5] Islamic Architecture and Art
   - ARTH 2108 [0.5] Art Worlds
   - ARTH 3007 [0.5] Art Worlds
   - ARTH 2107 [0.5] Islamic Architecture and Art
   - ARTH 2108 [0.5] Art Worlds
   - ARTH 3007 [0.5] Modern Asian Art

2) Historical, Cultural, and Regional Contexts
   - HIST 1707 [1.0] World History
   - PSCI 1200 [0.5] World Politics
   - PSCI 1501 [0.5] Politics of Migration
   - SOCI 1001 [0.5] Introduction to Sociology I
   - SOCI 1002 [0.5] Introduction to Sociology II
   - a. 0.5 credit in Stream Core Course
   - MGDS 2000 [0.5] Global Migration and Transnationalism

3) Citizenship, Identity, and Rights

4) International Migration, Globalization, and Politics

须包括0.5学分在至少三个的四个主题类别。至少0.5学分必须在3000级。
2) Historical, Cultural, and Regional Contexts

- HIST 2308 [0.5] Contemporary Chinese Art and Art History
- ENGL 2920 [0.5] Topics in Decolonization and Migration I
- ENGL 2926 [0.5] African Literatures I
- ENGL 2927 [0.5] African Literatures II
- ENGL 2936 [0.5] South Asian Literatures I
- ENGL 2937 [0.5] South Asian Literatures II
- ENGL 2956 [0.5] Literatures of the Americas I
- ENGL 2957 [0.5] Literatures of the Americas II
- ENGL 3603 [0.5] 20th- and 21st-century Fiction
- ENGL 3702 [0.5] American Culture
- ENGL 3930 [0.5] Topics in Decolonization and Migration II
- ENGL 3940 [0.5] Studies in Diaspora Lit.
- ENGL 3960 [0.5] Studies in Indigenous Literature
- ENGL 3965 [0.5] Intro to Postcolonial Theory
- ENGL 3972 [0.5] Studies in Postcolonial Literature
- EURR 3001 [0.5] Literature and Culture in Europe
- EURR 3002 [0.5] Literature and Culture in Russia and Eurasia
- FREN 3215 [0.5] Les éres du soupçon : contemporanités de la littérature
- MUSI 2005 [0.5] Introduction to Jazz History
- MUSI 2008 [0.5] Music of the World's Peoples
- MUSI 3106 [0.5] Popular Musics of the World

- CDNS 3600 [0.5] Cultural Politics and Identities in Canada
- EURR 1001 [0.5] Introduction to European and Russian Studies
- EURR 2001 [0.5] Current Issues in European Politics and Society
- EURR 2002 [0.5] Europe and Russia in the World
- HIST 2304 [1.0] Social and Cultural History of Canada
- HIST 2308 [0.5] Colonial Latin America
- HIST 2309 [0.5] Modern Latin America
- HIST 2312 [0.5] History of the Indian Ocean World
- HIST 2707 [0.5] Modern Africa
- HIST 2710 [0.5] Introduction to Caribbean History
- HIST 3111 [0.5] History of Humanitarian Aid
- HIST 3209 [0.5] Canadian Urban History
- HIST 3406 [0.5] African-American Women
- HIST 3413 [0.5] The United States and Its Borderlands
- HIST 3500 [0.5] Migration and Diaspora in Canada
- HIST 3507 [0.5] An Immigrant's Guide to Canada
- HIST 3510 [0.5] Indigenous Peoples of Canada
- HIST 3511 [0.5] Themes in Indigenous History
- HIST 3710 [0.5] Themes in Caribbean History
- HIST 3712 [0.5] Mexico: Aztecs to Narcos
- HIST 3714 [0.5] Holocaust Encounters
- HIST 3715 [0.5] Themes in South Asian History
- HIST 3813 [0.5] Problems in Global and Transnational Histories
- LACS 1001 [0.5] Introduction to Latin American and Caribbean Studies I
- LACS 1002 [0.5] Introduction to Latin American and Caribbean Studies II
- RELI 1712 [0.5] Religions of South and East Asia
- RELI 2110 [0.5] Judaism
- RELI 2310 [0.5] Islam
- RELI 2355 [0.5] Islamic Ethics
- RELI 2410 [0.5] Buddhism
- RELI 2510 [0.5] Hinduism
- RELI 2720 [0.5] Indigenous Religions of Canada
- RELI 2750 [0.5] Sikhsim
- RELI 3330 [0.5] Sufism
- RELI 3422 [0.5] Buddhism Beyond India
- RELI 3522 [0.5] Modern Hinduism
- SAST 1001 [0.5] Introduction to South Asian Studies I
- SAST 1002 [0.5] Introduction to South Asian Studies II

3) Citizenship, Identity, and Rights

- ANTH 2020 [0.5] Race and Ethnicity
- ANTH 3010 [0.5] Language, Culture, and Globalization
- ANTH 3020 [0.5] Studies in Race and Ethnicity
- ANTH 3025 [0.5] Anthropology and Human Rights
- ANTH 3027 [0.5] Studies in Globalization and Human Rights
- ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples
- BUSI 2702 [0.5] Introduction to International Management
- BUSI 3700 [0.5] Cross-cultural Communication
- COMS 3109 [0.5] Communication, Culture and Identity
- ECON 3380 [0.5] The Economics of Gender and Ethnicity
- INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters
- INDG 2011 [0.5] Contemporary Indigenous Studies
- INDG 2020 [0.5] Decolonizing Gender, Sex, and Sexuality
- INDG 3001 [0.5] Indigenous Governance
- INDG 3011 [0.5] Indigenous Rights, Resistance, and Resurgence
- HUMR 3301 [0.5] Racialization, Racism and Human Rights
- HUMR 3302 [0.5] Culture, Religion, and Women's Human Rights
- HUMR 3401 [0.5] Histories of Persecution and Genocide
- LAWS 2105 [0.5] Social Justice and Human Rights
- LAWS 2502 [0.5] Law, State and Citizen
- LAWS 3503 [0.5] Equality and Discrimination
- LAWS 3504 [0.5] Law and Aboriginal Peoples
- LAWS 3602 [0.5] International Human Rights
### International Migration, Globalization, and Politics

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### Approved 4000-level Honours Courses in Global Migration and Transnationalism

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<td>Issues in Latin American and Caribbean Studies</td>
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Stream in Global Politics

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0
   a. Core Courses
      - GPOL 1500 [0.5] Debates in Global Politics
      - GPOL 2500 [0.5] Debates in Comparative Politics
      - GPOL 3000 [0.5] Themes in Global and Comparative Politics
   b. Global Political Economy
      - PSCI 2602 [0.5] International Relations: Global Political Economy
   c. Political Science at the 2000 level
      - PSCI 2002 [0.5] Canadian Politics and Civil Society
      - PSCI 2003 [0.5] Canadian Political Institutions
      - PSCI 2101 [0.5] Comparative Politics of the Global North
      - PSCI 2102 [0.5] Comparative Politics of the Global South
      - PSCI 2200 [0.5] Introduction to U.S. Politics

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in: Free Electives 7.0
   a. Additional Requirements

   - PSCI 2401 [0.5] Public Affairs Analysis
   - PSCI 2500 [0.5] Gender and Politics
   - PSCI 2701 [0.5] Introduction to Research Methods in Political Science
   - PSCI 2702 [0.5] Quantitative Research Methods in Political Science
   - EURR 2001 [0.5] Current Issues in European Politics and Society
   - EURR 2002 [0.5] Europe and Russia in the World
   - PSCI 3100 [0.5] Politics of Development in Africa
   - PSCI 3101 [0.5] Politics of War in Africa
   - PSCI 3102 [0.5] Politics of Development of China
   - PSCI 3103 [0.5] State, Society and Economy in Northeast Asia
   - PSCI 3105 [0.5] Imperialism
   - PSCI 3107 [0.5] The Causes of War
   - PSCI 3108 [0.5] Politics of Popular Culture
   - PSCI 3109 [0.5] The Politics of Law and Morality
   - PSCI 3200 [0.5] U.S. Constitutional Politics
   - PSCI 3203 [0.5] Government and Politics in the Middle East
   - PSCI 3204 [0.5] Politics of Latin America
   - PSCI 3205 [0.5] Mexican Politics
   - PSCI 3206 [0.5] European Democracies
   - PSCI 3207 [0.5] The Government and Politics of European Integration
   - PSCI 3208 [0.5] Politics in Russia and Ukraine: Power and Contestation
   - PSCI 3209 [0.5] Reconstruction and Transformation in Europe and Eurasia
   - PSCI 3302 [0.5] Comparative Political Thought
   - PSCI 3307 [0.5] Politics of Human Rights
   - PSCI 3405 [0.5] Comparative Public Policy Analysis
   - PSCI 3406 [0.5] Public Affairs and Media Strategies
   - PSCI 3407 [0.5] Public Opinion and Public Policy
   - PSCI 3502 [0.5] Gender and Politics: Global South
   - PSCI 3600 [0.5] International Institutions
   - PSCI 3601 [0.5] Theories of International Politics
   - PSCI 3603 [0.5] Strategic Thought and International Security
   - PSCI 3606 [0.5] Canadian Foreign Policy
   - PSCI 3607 [0.5] North American Security and Defence Policy
   - PSCI 3700 [0.5] Government and Politics of South Asia
   - PSCI 3702 [0.5] Israeli-Palestinian Relations
   - PSCI 3703 [0.5] Governing in the Global Economy
   - PSCI 3704 [0.5] Government and Politics of Central and Eastern Europe
   - PSCI 3801 [0.5] Environmental Politics
   - PSCI 3802 [0.5] Globalization and Human Rights
   - PSCI 3805 [0.5] Politics of Race
4. The Language Requirement must be met.

**Total Credits** 15.0

### Stream in Global Religions: Identity and Community

**B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. **4.0 credits in: Core Courses** 4.0
   - **GINS 1000 [0.5]** Global History
   - **GINS 1010 [0.5]** International Law and Politics
   - **GINS 1020 [0.5]** Ethnography, Globalization and Culture
   - **GINS 2000 [0.5]** Ethics and Globalization
   - **GINS 2010 [0.5]** Globalization and International Economic Issues
   - **GINS 2020 [0.5]** Global Literatures
   - **GINS 3010 [0.5]** Global and International Theory
   - **GINS 3020 [0.5]** Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits from: the Stream** 4.0
   - a. Global Religious Studies Core
     - **RELI 1741 [0.5]** Global Religions: Identity and Community
     - **RELI 2741 [0.5]** Big Questions in Religious Studies
     - **RELI 3741 [0.5]** Classical Approaches to Religion
   - b. Foundations in Judaism, Christianity, and Islam
     - **RELI 1710 [0.5]** Judaism, Christianity, Islam
     - **RELI 2110 [0.5]** Judaism
     - **RELI 2121 [0.5]** Hebrew Bible
     - **RELI 2220 [0.5]** Christianity
     - **RELI 2220 [0.5]** Early Christianity
     - **RELI 2230 [0.5]** Global Christianity
     - **RELI 2310 [0.5]** Islam
     - **RELI 2330 [0.5]** The Qur’an
     - **RELI 2350 [0.5]** Classical Islamic Thought
     - **RELI 2355 [0.5]** Islamic Ethics
     - **RELI 2735 [0.5]** Greek Religion
     - **RELI 2737 [0.5]** Roman Religion
   - c. Foundations in Asian or Indigenous Religions
     - **RELI 1712 [0.5]** Religions of South and East Asia
     - **RELI 2410 [0.5]** Buddhism
     - **RELI 2510 [0.5]** Hinduism
     - **RELI 2515 [0.5]** Religion and Aesthetics in India
     - **RELI 2750 [0.5]** Sikhism
     - **RELI 2720 [0.5]** Indigenous Religions of Canada
     - **RELI 2800 [0.5]** Indigenous Traditions
   - d. Advanced Traditions and Contexts
     - **RELI 3101 [0.5]** Special Topics in Religions and the Body
     - **RELI 3140 [0.5]** Holocaust Encounters
     - **RELI 3220 [0.5]** Reformation Europe
     - **RELI 3230 [0.5]** Jesus of Nazareth
     - **RELI 3231 [0.5]** Paul of Tarsus
     - **RELI 3232 [0.5]** Christian Discipline
     - **RELI 3250 [0.5]** Evangelical Christianity in Social-Historical Perspective
     - **RELI 3330 [0.5]** Sufism
     - **RELI 3340 [0.5]** The Life and Image of Muhammad

   B. Credits Not Included in the Major CGPA (7.0 credits)

3. **7.0 credits in free electives** 7.0

C. Additional Requirements

4. The Language requirement must be met.

**Total Credits** 15.0

### Stream in Globalization and the Environment

**B.G. In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. **4.0 credits in: Core Courses** 4.0
   - **GINS 1000 [0.5]** Global History
   - **GINS 1010 [0.5]** International Law and Politics
   - **GINS 1020 [0.5]** Ethnography, Globalization and Culture
   - **GINS 2000 [0.5]** Ethics and Globalization
   - **GINS 2010 [0.5]** Globalization and International Economic Issues
   - **GINS 2020 [0.5]** Global Literatures
   - **GINS 3010 [0.5]** Global and International Theory
   - **GINS 3020 [0.5]** Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits from: the Stream** 4.0
   - a. Foundations
     - **GEOG 1010 [0.5]** Global Environmental Systems
     - **GEOG 2020 [0.5]** Global Connections
   - b. Globalization
     - **GEOG 2023 [0.5]** Cities, Inequality and Urban Change
     - **GEOG 2030 [0.5]** Space, Place and Culture
     - **GEOG 3023 [0.5]** Cities in a Global World
     - **GEOG 3024 [0.5]** Understanding Globalization
     - **GEOG 3205 [0.5]** Geographies of Selected Regions
   - c. Global Environment
     - **GEOG 3404 [0.5]** Geographies of Economic Development

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Stream in Globalization, Culture and Power

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits):

1. 4.0 credits in: Core Courses 4.0
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0
   a. Foundations
      - ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
      - ANTH 1002 [0.5] Introduction to Issues in Anthropology
      - ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology
      - ANTH 3005 [0.5] Ethnographic Research Methods
   b. Culture and Globalization
      - ANTH 2850 [0.5] Development and Underdevelopment
      - ANTH 3010 [0.5] Language, Culture, and Globalization
      - ANTH 3027 [0.5] Studies in Globalization and Human Rights
      - ANTH 3040 [0.5] The Global Middle Class
      - ANTH 3045 [0.5] Children and Childhood in a Globalized World
      - GEOG 2300 [0.5] Space, Place and Culture
      - GEOG 3021 [0.5] Geographies of Culture and Identity
   c. Ethnography
      - ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
      - ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa
      - ANTH 2630 [0.5] Studies in Asian Societies: Current Issues in Anthropological Research
      - ANTH 2635 [0.5] Tradition and Modernity in the Pacific
      - ANTH 2640 [0.5] Andean Ethnography
      - ANTH 2645 [0.5] The Postcolonial Middle East
      - ANTH 2650 [0.5] Ethnography of Mesoamerica
      - ANTH 2660 [0.5] Ethnography of North Africa
      - ANTH 2670 [0.5] Ethnography of Brazil
      - ANTH 2680 [0.5] Anthropology of "Mainstream" North America
      - ANTH 2690 [0.5] Ethnography of a Selected Area
   d. Topical Explorations in Anthropology
      - ANTH 2020 [0.5] Race and Ethnicity
      - ANTH 2040 [0.5] Anthropology and Gender
      - ANTH 2060 [0.5] Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
      - ANTH 2080 [0.5] Humans/Animals: the More-than-Human in Social Research
   e. Anthropology and the Environment
      - ANTH 2510 [0.5] Theories of Human Nature
      - ANTH 3007 [0.5] History of Anthropological Theory
      - ANTH 3008 [0.5] Contemporary Theories in Anthropology
      - ANTH 3020 [0.5] Studies in Race and Ethnicity
      - ANTH 3025 [0.5] Anthropology and Human Rights
      - ANTH 3310 [0.5] Studies in Medical Anthropology
      - ANTH 3355 [0.5] Anthropology and the Environment
      - ANTH 3350 [0.5] Studies in Visual Anthropology
      - ANTH 3370 [0.5] Studies in Art, Culture and Society
      - ANTH 3380 [0.5] Anthropology of Material Culture and Museums
      - ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples
      - ANTH 3800 [0.5] Studies in Applied and Participatory Anthropology

B. Credits Not Included in the Major CGPA (7.0 credits):

3. 7.0 credits in: Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Stream in International Economic Policy

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits):

1. 4.0 credits in: Core Courses 4.0
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
2. 4.0 credits from: the Stream 4.0

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 1001 [0.5]</td>
<td>Introduction to Microeconomics &amp; ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics</td>
</tr>
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b. Microeconomics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ECON 2001 [0.5]</td>
<td>Intermediate Microeconomics for Non-Mathematical Majors or ECON 2009 [0.5] Managerial Economics or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure</td>
</tr>
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</table>

c. Macroeconomics

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ECON 2101 [0.5]</td>
<td>Intermediate Macroeconomics for Non-Mathematical Majors or ECON 2102 [0.5] Intermediate Macroeconomics I</td>
</tr>
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d. Research Methodologies

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>IPAF 2000 [0.5]</td>
<td>Quantitative Approaches to Policy Analysis or ECON 2210 [0.5] Introduction to Statistics for Economics</td>
</tr>
</tbody>
</table>

e. International Economic Policy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ECON 3403 [0.5]</td>
<td>Introduction to Public Economics: Expenditures</td>
</tr>
<tr>
<td>ECON 3405 [0.5]</td>
<td>Introduction to Public Economics: Taxation</td>
</tr>
<tr>
<td>ECON 3508 [0.5]</td>
<td>Introduction to Economic Development</td>
</tr>
<tr>
<td>ECON 3509 [0.5]</td>
<td>Development Planning and Project Evaluation</td>
</tr>
<tr>
<td>ECON 3510 [0.5]</td>
<td>African Economic Development</td>
</tr>
<tr>
<td>ECON 3601 [0.5]</td>
<td>Introduction to International Trade</td>
</tr>
<tr>
<td>ECON 3602 [0.5]</td>
<td>International Monetary Problems</td>
</tr>
<tr>
<td>ECON 3803 [0.5]</td>
<td>The Economics of Natural Resources</td>
</tr>
<tr>
<td>ECON 3804 [0.5]</td>
<td>Environmental Economics</td>
</tr>
<tr>
<td>ECON 3807 [0.5]</td>
<td>European Economic Integration</td>
</tr>
<tr>
<td>ECON 3808 [0.5]</td>
<td>The Economics of Transition</td>
</tr>
<tr>
<td>ECON 3860 [0.5]</td>
<td>Agricultural Economics</td>
</tr>
<tr>
<td>ECON 3870 [0.5]</td>
<td>Comparative Economic Systems</td>
</tr>
</tbody>
</table>

Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in: Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Stream in Latin American and Caribbean Studies B.G.In.S. (15.0 credits)

Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>GINS 1000 [0.5]</td>
<td>Global History</td>
</tr>
<tr>
<td>GINS 1010 [0.5]</td>
<td>International Law and Politics</td>
</tr>
</tbody>
</table>

GINS 1020 [0.5] Ethnography, Globalization and Culture

GINS 2000 [0.5] Ethics and Globalization

GINS 2010 [0.5] Globalization and International Economic Issues

GINS 2020 [0.5] Global Literatures

GINS 3010 [0.5] Global and International Theory

GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

Note: Language Requirement - Students choosing the Latin America and Caribbean Studies Stream must fulfill their language requirement with a language relevant to Latin America and the Caribbean other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

a. Foundations

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>LACS 1001 [0.5]</td>
<td>Introduction to Latin American and Caribbean Studies I</td>
</tr>
<tr>
<td>LACS 1002 [0.5]</td>
<td>Introduction to Latin American and Caribbean Studies II</td>
</tr>
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b. History

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HIST 2308 [0.5]</td>
<td>Colonial Latin America</td>
</tr>
<tr>
<td>HIST 2309 [0.5]</td>
<td>Modern Latin America</td>
</tr>
<tr>
<td>HIST 2710 [0.5]</td>
<td>Introduction to Caribbean History</td>
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</table>

c. Politics

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>PSCI 3204 [0.5]</td>
<td>Politics of Latin America</td>
</tr>
<tr>
<td>PSCI 3205 [0.5]</td>
<td>Mexican Politics</td>
</tr>
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</table>

d. Courses with LACS Content

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 2640 [0.5]</td>
<td>Andean Ethnography</td>
</tr>
<tr>
<td>ANTH 2650 [0.5]</td>
<td>Ethnography of Mesoamerica</td>
</tr>
<tr>
<td>ENGL 2956 [0.5]</td>
<td>Literatures of the Americas I</td>
</tr>
<tr>
<td>ENGL 2957 [0.5]</td>
<td>Literatures of the Americas II</td>
</tr>
<tr>
<td>GEOG 3023 [0.5]</td>
<td>Cities in a Global World</td>
</tr>
<tr>
<td>GEOG 3025 [0.5]</td>
<td>Geographies of Selected Regions</td>
</tr>
<tr>
<td>GEOG 3030 [0.5]</td>
<td>Regional Field Excursion</td>
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<tr>
<td>GINS 3900 [0.5]</td>
<td>International Placement</td>
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<tr>
<td>HIST 3704 [0.5]</td>
<td>Aztecs</td>
</tr>
<tr>
<td>HIST 3710 [0.5]</td>
<td>Themes in Caribbean History</td>
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<tr>
<td>HIST 3712 [0.5]</td>
<td>Mexico: Aztecs to Narco</td>
</tr>
<tr>
<td>HIST 3713 [0.5]</td>
<td>Gender and Sexuality in Latin America</td>
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e. Context

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ANTH 2020 [0.5]</td>
<td>Race and Ethnicity</td>
</tr>
<tr>
<td>ANTH 2040 [0.5]</td>
<td>Anthropology and Gender</td>
</tr>
<tr>
<td>ANTH 2670 [0.5]</td>
<td>Ethnography of Brazil</td>
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<tr>
<td>ANTH 2850 [0.5]</td>
<td>Development and Underdevelopment</td>
</tr>
<tr>
<td>ANTH 3020 [0.5]</td>
<td>Studies in Race and Ethnicity</td>
</tr>
<tr>
<td>ANTH 3027 [0.5]</td>
<td>Studies in Globalization and Human Rights</td>
</tr>
<tr>
<td>ANTH 3600 [0.5]</td>
<td>Studies in Anthropology and Indigenous Peoples</td>
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<tr>
<td>ECON 3508 [0.5]</td>
<td>Introduction to Economic Development</td>
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<td>ENGL 3965 [0.5]</td>
<td>Intro to Postcolonial Theory</td>
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<td>ENGL 3972 [0.5]</td>
<td>Studies in Postcolonial Literature</td>
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<tr>
<td>GEOG 2200 [0.5]</td>
<td>Global Connections</td>
</tr>
<tr>
<td>GEOG 2300 [0.5]</td>
<td>Space, Place and Culture</td>
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</table>
**Stream in Teaching English in Global Contexts**  
**B.G.In.S. (15.0 credits)**

### A. Credits Included in the Major CGPS (8.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GINS 1000</td>
<td>Global History</td>
<td>[0.5]</td>
</tr>
<tr>
<td>GINS 1010</td>
<td>International Law and Politics</td>
<td>[0.5]</td>
</tr>
<tr>
<td>GINS 1020</td>
<td>Ethnography, Globalization and Culture</td>
<td>[0.5]</td>
</tr>
<tr>
<td>GINS 2000</td>
<td>Ethics and Globalization</td>
<td>[0.5]</td>
</tr>
<tr>
<td>GINS 2010</td>
<td>Globalization and International Economic Issues</td>
<td>[0.5]</td>
</tr>
<tr>
<td>GINS 2020</td>
<td>Global Literatures</td>
<td>[0.5]</td>
</tr>
<tr>
<td>GINS 3010</td>
<td>Global and International Theory</td>
<td>[0.5]</td>
</tr>
<tr>
<td>GINS 3020</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
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#### 2. 4.0 credits from: the Stream

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ALDS 1001</td>
<td>Language Matters: Introduction to ALDS</td>
</tr>
<tr>
<td>LING 1001</td>
<td>Introduction to Linguistics I</td>
</tr>
<tr>
<td>ALDS 2201</td>
<td>Analysis of Oral Language Use</td>
</tr>
<tr>
<td>ALDS 2202</td>
<td>Analysis of Written Language Use</td>
</tr>
<tr>
<td>ALDS 2203</td>
<td>Linguistic Theory and Second-Language Learning</td>
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</table>

### B. Credits Not Included in the Major CGPA (7.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ALDS 2201</td>
<td>Analysis of Oral Language Use</td>
<td>[0.5]</td>
</tr>
<tr>
<td>ALDS 2202</td>
<td>Analysis of Written Language Use</td>
<td>[0.5]</td>
</tr>
<tr>
<td>ALDS 2203</td>
<td>Linguistic Theory and Second-Language Learning</td>
<td>[0.5]</td>
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<tr>
<td>ALDS 3201</td>
<td>Cross-Cultural Communication</td>
<td>[0.5]</td>
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<tr>
<td>ALDS 3205</td>
<td>English as a Global Language</td>
<td>[0.5]</td>
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<tr>
<td>ALDS 4602</td>
<td>Second Language Acquisition</td>
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</tr>
<tr>
<td>ALDS 4801</td>
<td>Major Structures of English</td>
<td>[0.5]</td>
</tr>
</tbody>
</table>

#### 3. 7.0 credits in: free electives  
7.0

### C. Additional Requirements

4. The Language requirement must be met.

**Total Credits**  
15.0

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**B.G.In.S. Regulations**

The regulations presented in this section apply to all Bachelor of Global and International Studies programs.

In addition to the program requirements and requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.G.In.S degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit of FYSM and can only register in a FYSM while they have first-year standing in their B.G.In.S program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Change of Specialization or Stream Within the B.G.In.S Degree**

Students may change specialization or stream, or change from/to specialization or stream within the B.G.In.S. during the first or subsequent years of study if upon entry to the new specialization or stream they would be in good academic standing.

**Minors**

Students may apply to the Registrar's Office to be admitted to a minor during their first or subsequent years of study. Acceptance into a minor is subject to any specific requirements of the intended minor as published in the relevant Calendar entry. B.G.In.S. Honours students may take a maximum of one minor. B.G.In.S. students may take a maximum of two minors.

**Co-operative Education**

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.
Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment.

Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:
1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**Bachelor of Global and International Studies: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Global and International Studies Honours program;
2. Obtained and maintained an overall CGPA of 9.5 or higher in the first two years of academic study;
3. Have obtained third-year standing;
4. Prior to the first work term, have successfully completed GINS 3010 and GINS 3020

Students in B.G.In.S must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Report Course:** GINS 3999

<table>
<thead>
<tr>
<th>Work/Study Pattern:</th>
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<tbody>
<tr>
<td>Year 1</td>
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<tr>
<td>Term</td>
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<td>Fall</td>
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<td>Winter</td>
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<tr>
<td>Summer</td>
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</tbody>
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**Legend**

- S: Study
- W: Work
- O: Optional

* indicates recommended work study pattern
** student finds own employer for this work-term.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as **recommended** are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degrees**

- Bachelor of Global and International Studies (Honours)
- Bachelor of Global and International Studies

**Admission Requirements**

**First Year**

**B.G.In.S. (Honours)**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais) and a FIF4U course for students applying to the Specialization in French and Francophone Studies. For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section English Language Requirements in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade
average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

B. G.In.S.
Access to the B.G.In.S. degree is limited to B.G.In.S. (Honours) students who apply to transfer.

Advanced Standing

B.G.In.S. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Global and International Studies (GINS) Courses

GINS 1000 [0.5 credit]
Global History
Introduction to political, social, cultural, economic and military developments in global and international history. Prerequisite(s): Enrolment in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 1010 [0.5 credit]
International Law and Politics
Introduction to the evolution of the international system, including the rise of the state, sovereignty, and the challenge of international cooperation. The role of international law in addressing global issues such as human rights, security and trade. Prerequisite(s): Enrolment in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 1020 [0.5 credit]
Ethnography, Globalization and Culture
Introduction to the intersection of globalization processes with social and cultural diversity as examined through ethnography and ethnographic methods. Topics may include cultural survival, growing economic inequality, ecological vulnerabilities, health practices, human rights, and shifting racialized, gendered, religious, ethnic, and national identities. Prerequisite(s): Enrolment in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 1100 [0.5 credit]
Global Development
Introduction to key questions and issues in development studies, taught from an inter-disciplinary perspective. Lectures two hours a week, tutorials one hour a week.

GINS 1300 [0.0 credit]
International Experience Requirement Preparation
This mandatory course introduces BGInS students to the International Experience Requirement (IER) and to the various policies and procedures associated with it. Graded SAT/UNS. Prerequisite(s): first-year standing in BGInS. Online course.

GINS 2000 [0.5 credit]
Ethics and Globalization
Introduction to global ethical issues, focusing on alternative lines of ethical argument. Topics may include poverty and unequal development, climate change, war and terrorism, reparations for colonialism and slavery, international relief services, ill effects of globalization, trafficking and forced labour, democracy and global governance. Prerequisite(s): Second-year standing in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 2010 [0.5 credit]
Globalization and International Economic Issues
An introduction to the world economy, international trade and finance, and economic development. Social and economic implications for both rich and poor countries of lowered barriers to the international flows of goods, services, capital, labour, and information in the age of globalization. Prerequisite(s): Second-year standing in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 2020 [0.5 credit]
Global Literatures
A study of the global dynamics of the contemporary literary imagination and literary production; literature as cultural practice; the politics of literary circulation; the politics of language and translation. Prerequisite(s): Second-year standing in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 3010 [0.5 credit]
Global and International Theory
Advanced analysis of global and international theories from a variety of perspectives, including realism, liberalism, postmodernism, constructivism, post-structuralism, literary and critical approaches. Prerequisite(s): Third-year standing in B.G.In.S. Lectures three hours a week.

GINS 3020 [0.5 credit]
Places, Boundaries, Movements and Global Environmental Change
Examination of the relationship between individual places and global social and environmental processes. The changing nature of regions, states and political boundaries in the context of political and economic globalization and international migration. Social science perspectives on climate change vulnerability, adaptation and mitigation. Prerequisite(s): Third-year standing in B.G.In.S. Lectures three hours a week.
GINS 3100 [0.5 credit]
Global and International Group Project
Student teams work on a project related to global and international studies. Lectures are devoted to discussing group project-related issues and student presentations. A project proposal, a series of project reports and oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lecture one hour per week, tutorials two hours per week.

GINS 3200 [0.5 credit]
Experiential Learning Abroad
An experiential learning opportunity combining volunteer work abroad with classroom instruction on the Carleton campus. Through experiential engagement outside Canada, together with critical reflection, students will learn about the challenges and rewards of global engagement.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lecture two hours a week plus a three week experiential learning trip abroad.

GINS 3300 [0.5 credit]
Global and International Studies Abroad: Selected Topics
Based at a partner university around the world, and taught by a Carleton faculty member, the course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in global and international studies. Topic and location will change annually.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and approval by the BGInS Program Director.
Three week intensive course.

GINS 3900 [0.5 credit]
International Placement
Placement for six weeks with a global and international focus.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in B.G. In. S.

GINS 3901 [1.0 credit]
International Placement
Placement for twelve weeks with a global and international focus.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in B.G. In. S.

GINS 3930 [0.5 credit]
Carleton International Placement
Placement for six weeks with a global and international focus for students outside of the BGInS Program.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3701, IPAF 3900 (no longer offered).
Prerequisite(s): Third-year standing and minimum CGPA of 9.0.
Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3931 [1.0 credit]
Carleton International Placement
Placement for twelve weeks with a global and international focus for students outside of the BGInS Program.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3702, IPAF 3901 (no longer offered).
Prerequisite(s): Third-year standing and minimum CGPA of 9.0.
Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

GINS 4090 [0.5 credit]
Honours Seminar in Global and International Studies
Examination of key debates in global and international studies from a variety of disciplinary and interdisciplinary perspectives. Integration of knowledge from different areas of emphasis in global studies. A major research paper is required that undertakes to focus theoretical insight on practical concerns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in B.G. In. S.
Seminar three hours a week.

GINS 4900 [0.5 credit]
Tutorial in Global and International Studies
A tutorial on selected topics in which seminars are not available.
Prerequisite(s): fourth-year Honours standing in B.G. In. S. and permission of the Program Director.

GINS 4908 [1.0 credit]
Honours Research Essay
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. B.G. In. S. regulations apply.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in B.G. In. S. with a CGPA of 9.00 or higher, or permission of the Program Director.
Global Development (B.G.In.S. Specialization and Stream)

This section presents the requirements for programs in:
- Specialization in Global Development B.G.In.S. Honours
- Stream in Global Development B.G.In.S.

Program Requirements
Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Development B.G.In.S. Honours (20.0 credits)

A. Credits included in the Major CGPA (12.0 credits)

1. **4.5 credits in:** Core Courses

   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. **0.0 credit in:** International Experience Requirement Preparation

   - GINS 1300 [0.0] International Experience Requirement Preparation

3. **7.5 credits in:** the Specialization

   - a. 0.5 credit in: Foundations
     - GINS 1100 [0.5] Global Development
   - b. 1.5 credits in: Anthropology
     - ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
     - ANTH 1002 [0.5] Introduction to Issues in Anthropology
     - ANTH 2850 [0.5] Development and Underdevelopment
   - And one of:
     - ANTH 3010 [0.5] Language, Culture, and Globalization
     - ANTH 3025 [0.5] Anthropology and Human Rights
     - ANTH 3027 [0.5] Studies in Globalization and Human Rights
     - ANTH 3040 [0.5] The Global Middle Class
     - ANTH 3045 [0.5] Children and Childhood in a Globalized World
     - ANTH 3355 [0.5] Anthropology and the Environment
   - c. 1.5 credits in: Economics
     - ECON 1001 [0.5] Introduction to Microeconomics (or FYSM 1003 in place of ECON 1001 and ECON 1002)
     - ECON 1002 [0.5] Introduction to Macroeconomics (or FYSM 1003 in place of ECON 1001 and ECON 1002)
     - ECON 3508 [0.5] Introduction to Economic Development
   - d. 1.5 credits in: Geography
     - GEOG 2200 [0.5] Global Connections
     - GEOG 3404 [0.5] Geographies of Economic Development
     - And one of:
       - GEOG 2023 [0.5] Cities, Inequality and Urban Change
       - GEOG 3023 [0.5] Cities in a Global World
       - GEOG 3209 [0.5] Sustainability and Environment in the South
   - e. 1.5 credits in: Political Science
     - PSCI 2102 [0.5] Comparative Politics of the Global South
     - And one of:
       - PSCI 3100 [0.5] Politics of Development in Africa
       - PSCI 3204 [0.5] Politics of Latin America
       - PSCI 3502 [0.5] Gender and Politics: Global South
       - PSCI 3700 [0.5] Government and Politics of South Asia
     - And one of:
       - PSCI 4104 [0.5] Development in the Global South - Theory and Practice
       - PSCI 4105 [0.5] Selected Problems in Development in the Global South
   - f. 0.5 credit in: Research Methodologies
     - IPAF 2000 [0.5] Quantitative Approaches to Policy Analysis
   - g. 0.5 credits from: Advanced courses
     - ANTH 4005 [0.5] Health and Globalization
     - ANTH 4109/5109 [0.5] Ethnography, Gender and Globalization
     - ANTH 4560 [0.5] Economic Anthropology
     - ANTH 4610 [0.5] Advanced Studies in Indigenous Peoples
     - ANTH 4620 [0.5] Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
     - ANTH 4730 [0.5] Colonialism and Post-Colonialism
     - ANTH 4750 [0.5] Advanced Studies in Globalization and Citizenship
     - ECON 3509 [0.5] Development Planning and Project Evaluation
     - ECON 3510 [0.5] African Economic Development
     - ECON 4507 [0.5] The Economics of Development
     - ECON 4508 [0.5] International Aspects of Economic Development
     - ECON 4601 [0.5] International Trade Theory and Policy
     - ECON 4602 [0.5] International Monetary Theory and Policy
     - ECON 4800 [0.5] Spatial Economics
Global and International Studies (GINS) Courses

GINS 1000 [0.5 credit]
Global History
Introduction to political, social, cultural, economic and military developments in global and international history. Prerequisite(s): Enrollment in B.G.In.S.
Lectures two hours a week, tutorials one hour a week.

GINS 1010 [0.5 credit]
International Law and Politics
Introduction to the evolution of the international system, including the rise of the state, sovereignty, and the challenge of international cooperation. The role of international law in addressing global issues such as human rights, security and trade. Prerequisite(s): Enrollment in B.G.In.S.
Lectures two hours a week, tutorials one hour a week.
GINS 1020 [0.5 credit]  
*Ethnography, Globalization and Culture*  
Introduction to the intersection of globalization processes with social and cultural diversity as examined through ethnography and ethnographic methods. Topics may include cultural survival, growing economic inequality, ecological vulnerabilities, health practices, human rights, and shifting racialized, gendered, religious, ethnic, and national identities.  
Prerequisite(s): Enrolment in B.G.In.S.  
Lectures two hours a week, tutorials one hour a week.

GINS 1100 [0.5 credit]  
*Global Development*  
Introduction to key questions and issues in development studies, taught from an inter-disciplinary perspective.  
Lectures two hours a week, tutorials one hour a week.

GINS 1300 [0.0 credit]  
*International Experience Requirement Preparation*  
This mandatory course introduces BGInS students to the International Experience Requirement (IER) and to the various policies and procedures associated with it. Graded SAT/UNS.  
Prerequisite(s): first-year standing in BGInS.  
Online course.

GINS 2000 [0.5 credit]  
*Ethics and Globalization*  
Introduction to global ethical issues, focusing on alternative lines of ethical argument. Topics may include poverty and unequal development, climate change, war and terrorism, reparations for colonialism and slavery, international relief services, ill effects of globalization, trafficking and forced labour, democracy and global governance.  
Prerequisite(s): Second-year standing in B.G.In.S.  
Lectures two hours a week, tutorials one hour a week.

GINS 2010 [0.5 credit]  
*Globalization and International Economic Issues*  
An introduction to the world economy, international trade and finance, and economic development. Social and economic implications for both rich and poor countries of lowered barriers to the international flows of goods, services, capital, labour, and information in the age of globalization.  
Prerequisite(s): Second-year standing in B.G.In.S.  
Lectures two hours a week, tutorials one hour a week.

GINS 2020 [0.5 credit]  
*Global Literatures*  
A study of the global dynamics of the contemporary literary imagination and literary production; literature as cultural practice; the politics of literary circulation; the politics of language and translation.  
Prerequisite(s): second-year standing in B.G.In.S.  
Lectures two hours a week, tutorials one hour a week.

GINS 3010 [0.5 credit]  
*Global and International Theory*  
Advanced analysis of global and international theories from a variety of perspectives, including realism, liberalism, postmodernism, constructivism, post-structuralism, literary and critical approaches.  
Prerequisite(s): third-year standing in B.G.In.S.  
Lectures three hours a week.

GINS 3020 [0.5 credit]  
*Places, Boundaries, Movements and Global Environmental Change*  
Examination of the relationship between individual places and global social and environmental processes. The changing nature of regions, states and political boundaries in the context of political and economic globalization and international migration. Social science perspectives on climate change vulnerability, adaptation and mitigation.  
Prerequisite(s): third-year standing in B.G.In.S.  
Lectures three hours a week.

GINS 3100 [0.5 credit]  
*Global and International Group Project*  
Student teams work on a project related to global and international studies. Lectures are devoted to discussing group project-related issues and student presentations. A project proposal, a series of project reports and oral presentations, and a comprehensive final report are required.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing.  
Lecture one hour per week, tutorials two hours per week.

GINS 3200 [0.5 credit]  
*Experiential Learning Abroad*  
An experiential learning opportunity combining volunteer work abroad with classroom instruction on the Carleton campus. Through experiential engagement outside Canada, together with critical reflection, students will learn about the challenges and rewards of global engagement.  
Includes: Experiential Learning Activity  
Prerequisite(s): third year standing.  
Lecture two hours a week plus a three week experiential learning trip abroad.

GINS 3300 [0.5 credit]  
*Global and International Studies Abroad: Selected Topics*  
Based at a partner university around the world, and taught by a Carleton faculty member, the course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in global and international studies. Topic and location will change annually.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing and approval by the BGInS Program Director.  
Three week intensive course.
GINS 3900 [0.5 credit]
International Placement
Placement for six weeks with a global and international focus.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in B.G.In.S.

GINS 3901 [1.0 credit]
International Placement
Placement for twelve weeks with a global and international focus.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in B.G.In.S.

GINS 3930 [0.5 credit]
Carleton International Placement
Placement for six weeks with a global and international focus for students outside of the BGInS Program.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3701, IPAF 3900 (no longer offered).
Prerequisite(s): Third-year standing and minimum CGPA of 9.0.
Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3931 [1.0 credit]
Carleton International Placement
Placement for twelve weeks with a global and international focus for students outside of the BGInS Program.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3702, IPAF 3901 (no longer offered).
Prerequisite(s): Third-year standing and minimum CGPA of 9.0.
Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

GINS 4090 [0.5 credit]
Honours Seminar in Global and International Studies
Examination of key debates in global and international studies from a variety of disciplinary and interdisciplinary perspectives. Integration of knowledge from different areas of emphasis in global studies. A major research paper is required that undertakes to focus theoretical insight on practical concerns.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year Honours standing in B.G.In.S. Seminar three hours a week.

GINS 4900 [0.5 credit]
Tutorial in Global and International Studies
A tutorial on selected topics in which seminars are not available.
Prerequisite(s): Fourth-year Honours standing in B.G.In.S. and permission of the Program Director.

GINS 4908 [1.0 credit]
Honours Research Essay
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. B.G.In.S. regulations apply.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year Honours standing in B.G.In.S. with a CGPA of 9.00 or higher, or permission of the Program Director.

Global Migration and Transnationalism (B.G.In.S. Specialization and Stream)

This section presents the requirements for programs in:
- Specialization in Global Migration and Transnationalism B.G.In.S. Honours
- Stream in Global Migration and Transnationalism B.G.In.S.

Program Requirements
Bachelor of Global and International Studies (B.G.In.S.)
Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Migration and Transnationalism
B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in International Experience Requirement Preparation
   - GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in the Specialization
   - a. 1.0 credits in Foundations
     - ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
     - ANTH 1002 [0.5] Introduction to Issues in Anthropology
     - CDNS 1102 [0.5] Introduction to Canada and the World
ENGL 1009 [0.5] Literature in Global Context
ENGL 1010 [0.5] Writing Essays about Literature
FYSM 1408 [1.0] French on the World Stage
GEOG 1020 [0.5] People, Places and Environments
HIST 1707 [1.0] World History
PSCI 1200 [0.5] World Politics
PSCI 1501 [0.5] Politics of Migration
SOCI 1001 [0.5] Introduction to Sociology I
SOCI 1002 [0.5] Introduction to Sociology II
b. 0.5 credit in Specialization Core Course
MGDS 2000 [0.5] Global Migration and Transnationalism
c. 3.5 credits from Global Migration and Transnationalism Thematic Categories
Must include 0.5 credit from each category:
1) Transnationalism in the Arts, Literature, and Music
2) Historical, Cultural, and Regional Contexts
3) Citizenship, Identity, and Rights
4) International Migration, Globalization, and Politics
At least 1.0 credit must be at the 3000-level. Only 0.5 credit at the 1000-level.
d. 1.0 credits from: Advanced Approaches in Global Migration and Transnationalism
AFRI 3005 [0.5] African Migrations and Diasporas
ECON 3370 [0.5] The Economics of Migration
ENGL 3940 [0.5] Advanced Approaches in Global Migration and Transnationalism
HIST 3507 [0.5] An Immigrant’s Guide to Canada
PSCI 3608 [0.5] Migration Governance
SOCI 3019 [0.5] Sociology of International Migration
e. 1.5 credits from Approved 4000-level Honours Requirements
Courses in Global Migration and Transnationalism
Notes:
1) Please see the list of Approved Courses in Global Migration and Transnationalism in this calendar for courses that fulfill the above thematic category and 4000-level Honours requirements.
2) Courses in the Specialization that potentially fulfill more than one specialization requirement can only be counted once.
3) Some upper-level courses on this list may have specific prerequisites. Students are encouraged to consult the course calendar when planning their schedules to be aware of those prerequisites and to fulfill them before registering. Prerequisites that do not count towards the Major CGPA may be counted towards free electives.

B. Credits Not Included in the Major CGPA (8.0 credits)
4. 8.0 credits in: Free Electives 8.0
C. Additional Requirements
5. The International Experience requirements must be met.
6. The Language requirement must be met.
Total Credits 20.0

Stream in Global Migration and Transnationalism B.G.In.S. (15.0 credits)
A. Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in Core Courses 4.0
GINS 1000 [0.5] Global History

GINS 1010 [0.5] International Law and Politics
GINS 1020 [0.5] Ethnography, Globalization and Culture
GINS 2000 [0.5] Ethics and Globalization
GINS 2010 [0.5] Globalization and International Economic Issues
GINS 2020 [0.5] Global Literatures
GINS 3010 [0.5] Global and International Theory
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits in the Stream 4.0
a. 1.0 credit from Foundations
ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
ANTH 1002 [0.5] Introduction to Issues in Anthropology
CDNS 1102 [0.5] Introduction to Canada and the World
ENGL 1009 [0.5] Literature in Global Context
ENGL 1010 [0.5] Writing Essays about Literature
FYSM 1408 [1.0] French on the World Stage
GEOG 1020 [0.5] People, Places and Environments
HIST 1707 [1.0] World History
PSCI 1200 [0.5] World Politics
PSCI 1501 [0.5] Politics of Migration
SOCI 1001 [0.5] Introduction to Sociology I
SOCI 1002 [0.5] Introduction to Sociology II
b. 0.5 credit in Stream Core Course
MGDS 2000 [0.5] Global Migration and Transnationalism
c. 2.5 credits from Global Migration and Transnationalism Thematic Categories
1) Transnationalism in the Arts, Literature, and Music
2) Historical, Cultural, and Regional Contexts
3) Citizenship, Identity, and Rights
4) International Migration, Globalization, and Politics
Must include 0.5 credit in at least three of the four categories. Only 0.5 credit at the 1000 level. At least 1.0 credit must be at the 3000 level.

B. Credits Not Included in the Major CGPA (7.0 credits)
3. 7.0 credits in Free Electives 7.0
C. Additional Requirements
4. The Language requirement must be met.

Total Credits 15.0

Approved Courses in Global Migration and Transnationalism

This list contains approved courses in Global Migration and Transnationalism that fulfill the four thematic and 4000-level Honours requirements for the BGInS Global Migration and Transnationalism Stream and Specialization. Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

Global Migration and Transnationalism Thematic Categories
1) Transnationalism in the Arts, Literature, and Music
2) Historical, Cultural, and Regional Contexts
### 3) Citizenship, Identity, and Rights

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 2304</td>
<td>Social and Cultural History of Canada</td>
</tr>
<tr>
<td>HIST 2308</td>
<td>Colonial Latin America</td>
</tr>
<tr>
<td>HIST 2309</td>
<td>Modern Latin America</td>
</tr>
<tr>
<td>HIST 2312</td>
<td>History of the Indian Ocean World</td>
</tr>
<tr>
<td>HIST 2706</td>
<td>Ancient and Pre-Colonial Africa</td>
</tr>
<tr>
<td>HIST 2707</td>
<td>Modern Africa</td>
</tr>
<tr>
<td>HIST 2710</td>
<td>Introduction to Caribbean History</td>
</tr>
<tr>
<td>HIST 3111</td>
<td>History of Humanitarian Aid</td>
</tr>
<tr>
<td>HIST 3209</td>
<td>Canadian Urban History</td>
</tr>
<tr>
<td>HIST 3406</td>
<td>African-American Women</td>
</tr>
<tr>
<td>HIST 3413</td>
<td>The United States and Its Borderlands</td>
</tr>
<tr>
<td>HIST 3500</td>
<td>Migration and Diaspora in Canada</td>
</tr>
<tr>
<td>HIST 3507</td>
<td>An Immigrant’s Guide to Canada</td>
</tr>
<tr>
<td>HIST 3510</td>
<td>Indigenous Peoples of Canada</td>
</tr>
<tr>
<td>HIST 3511</td>
<td>Themes in Indigenous History</td>
</tr>
<tr>
<td>HIST 3710</td>
<td>Themes in Caribbean History</td>
</tr>
<tr>
<td>HIST 3712</td>
<td>Mexico: Aztecs to Narcos</td>
</tr>
<tr>
<td>HIST 3714</td>
<td>Holocaust Encounters</td>
</tr>
<tr>
<td>HIST 3715</td>
<td>Themes in South Asian History</td>
</tr>
<tr>
<td>HIST 3813</td>
<td>Problems in Global and Transnational Histories</td>
</tr>
<tr>
<td>LACS 1001</td>
<td>Introduction to Latin American and Caribbean Studies I</td>
</tr>
<tr>
<td>LACS 1002</td>
<td>Introduction to Latin American and Caribbean Studies II</td>
</tr>
<tr>
<td>RELI 1712</td>
<td>Religions of South and East Asia</td>
</tr>
<tr>
<td>RELI 2110</td>
<td>Judaism</td>
</tr>
<tr>
<td>RELI 2310</td>
<td>Islam</td>
</tr>
<tr>
<td>RELI 2355</td>
<td>Islamic Ethics</td>
</tr>
<tr>
<td>RELI 2410</td>
<td>Buddhism</td>
</tr>
<tr>
<td>RELI 2510</td>
<td>Hinduism</td>
</tr>
<tr>
<td>RELI 2720</td>
<td>Indigenous Religions of Canada</td>
</tr>
<tr>
<td>RELI 2750</td>
<td>Sikhism</td>
</tr>
<tr>
<td>RELI 3330</td>
<td>Sufism</td>
</tr>
<tr>
<td>RELI 3422</td>
<td>Buddhism Beyond India</td>
</tr>
<tr>
<td>RELI 3522</td>
<td>Modern Hinduism</td>
</tr>
<tr>
<td>SAST 1001</td>
<td>Introduction to South Asian Studies I</td>
</tr>
<tr>
<td>SAST 1002</td>
<td>Introduction to South Asian Studies II</td>
</tr>
</tbody>
</table>

### 4) International Migration, Globalization, and Politics

#### 1) Transnationalism in the Arts, Literature, and Music

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFR 3609</td>
<td>African Cinema</td>
</tr>
<tr>
<td>ARTH 2003</td>
<td>Canadian Twentieth-Century and Contemporary Art</td>
</tr>
<tr>
<td>ARTH 2005</td>
<td>Arts of the First Peoples: The Woodlands, the Plains, and the Subarctic</td>
</tr>
<tr>
<td>ARTH 2006</td>
<td>Arts of the First Peoples: The Southwest, the West Coast and the Arctic</td>
</tr>
<tr>
<td>ARTH 2007</td>
<td>Asian Art</td>
</tr>
<tr>
<td>ARTH 2008</td>
<td>Inuit Art</td>
</tr>
<tr>
<td>ARTH 2107</td>
<td>Islamic Architecture and Art</td>
</tr>
<tr>
<td>ARTH 2108</td>
<td>Art Worlds</td>
</tr>
<tr>
<td>ARTH 3007</td>
<td>Modern Asian Art</td>
</tr>
<tr>
<td>ARTH 3008</td>
<td>Contemporary Chinese Art and Art History</td>
</tr>
<tr>
<td>ENGL 2920</td>
<td>Topics in Decolonization and Migration I</td>
</tr>
<tr>
<td>ENGL 2926</td>
<td>African Literatures I</td>
</tr>
<tr>
<td>ENGL 2927</td>
<td>African Literatures II</td>
</tr>
<tr>
<td>ENGL 2936</td>
<td>South Asian Literatures I</td>
</tr>
<tr>
<td>ENGL 2937</td>
<td>South Asian Literatures II</td>
</tr>
<tr>
<td>ENGL 2956</td>
<td>Languages of the Americas I</td>
</tr>
<tr>
<td>ENGL 2957</td>
<td>Languages of the Americas II</td>
</tr>
<tr>
<td>ENGL 3603</td>
<td>20th- and 21st-century Fiction</td>
</tr>
<tr>
<td>ENGL 3702</td>
<td>American Culture</td>
</tr>
<tr>
<td>ENGL 3930</td>
<td>Topics in Decolonization and Migration II</td>
</tr>
<tr>
<td>ENGL 3940</td>
<td>Studies in Diaspora Lit.</td>
</tr>
<tr>
<td>ENGL 3960</td>
<td>Studies in Indigenous Literature</td>
</tr>
<tr>
<td>ENGL 3965</td>
<td>Intro to Postcolonial Theory</td>
</tr>
<tr>
<td>ENGL 3972</td>
<td>Studies in Postcolonial Literature</td>
</tr>
<tr>
<td>EURLR 3001</td>
<td>Literature and Culture in Europe</td>
</tr>
<tr>
<td>EURLR 3002</td>
<td>Literature and Culture in Russia and Eurasia</td>
</tr>
<tr>
<td>FREN 3215</td>
<td>Les êres du soupçon: contemporanéités de la littérature</td>
</tr>
<tr>
<td>MUSI 2005</td>
<td>Introduction to Jazz History</td>
</tr>
<tr>
<td>MUSI 2008</td>
<td>Music of the World’s Peoples</td>
</tr>
<tr>
<td>MUSI 3106</td>
<td>Popular Musics of the World</td>
</tr>
</tbody>
</table>

#### 2) Historical, Cultural, and Regional Contexts

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>AFR 1001</td>
<td>Introduction to African Studies I</td>
</tr>
<tr>
<td>AFR 1002</td>
<td>Introduction to African Studies II</td>
</tr>
<tr>
<td>AFR 3005</td>
<td>African Migrations and Diasporas</td>
</tr>
<tr>
<td>CDNS 3600</td>
<td>Cultural Politics and Identities in Canada</td>
</tr>
<tr>
<td>EURLR 1001</td>
<td>Introduction to European and Russian Studies</td>
</tr>
<tr>
<td>EURLR 2001</td>
<td>Current Issues in European Politics and Society</td>
</tr>
<tr>
<td>EURLR 2002</td>
<td>Europe and Russia in the World</td>
</tr>
</tbody>
</table>

### 5) Transnationalism

Approved Courses in Global Migration and Transnationalism

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURR 2001</td>
<td></td>
</tr>
</tbody>
</table>
4) International Migration, Globalization, and Politics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>PSCI 3203</td>
<td>Government and Politics in the Middle East</td>
</tr>
<tr>
<td>PSCI 3608</td>
<td>Migration Governance</td>
</tr>
<tr>
<td>PSCI 3700</td>
<td>Government and Politics of South Asia</td>
</tr>
<tr>
<td>SOCI 3019</td>
<td>Sociology of International Migration</td>
</tr>
<tr>
<td>SOCI 3805</td>
<td>Studies in Population</td>
</tr>
</tbody>
</table>

**Approved 4000-level Honours Courses in Global Migration and Transnationalism**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFRI 4000</td>
<td>Advanced Topics in African Studies</td>
</tr>
<tr>
<td>AFRI 4003</td>
<td>History of 'The African Child'</td>
</tr>
<tr>
<td>AFRI 4050</td>
<td>Selected Topics in African Studies</td>
</tr>
<tr>
<td>ANTH 4006</td>
<td>Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology</td>
</tr>
<tr>
<td>ANTH 4020</td>
<td>Advanced Studies in Race and Ethnicity</td>
</tr>
<tr>
<td>ANTH 4109</td>
<td>Ethnography, Gender and Globalization</td>
</tr>
<tr>
<td>ANTH 4200</td>
<td>War, Security and Citizenship</td>
</tr>
<tr>
<td>ANTH 4730</td>
<td>Colonialism and Post-Colonialism</td>
</tr>
<tr>
<td>ANTH 4750</td>
<td>Advanced Studies in Globalization and Citizenship</td>
</tr>
<tr>
<td>ARTH 4003</td>
<td>Topics in Contemporary Chinese Art</td>
</tr>
<tr>
<td>ARTH 4005</td>
<td>Topics in Contemporary Indigenous Art</td>
</tr>
<tr>
<td>ARTH 4007</td>
<td>Topics in Asian Art</td>
</tr>
<tr>
<td>ARTH 4008</td>
<td>Transnational Theory</td>
</tr>
<tr>
<td>BUSI 4706</td>
<td>International Human Resource Management</td>
</tr>
<tr>
<td>CDNS 4300</td>
<td>Contested Spaces and Communities</td>
</tr>
<tr>
<td>CDNS 4400</td>
<td>Cultural Landscape and Cultural Identity in Canada</td>
</tr>
<tr>
<td>CDNS 4500</td>
<td>Canada and the World</td>
</tr>
<tr>
<td>COMS 4316</td>
<td>Indigenous Media in Global Contexts</td>
</tr>
<tr>
<td>COMS 4603</td>
<td>Diaspora and Communication</td>
</tr>
<tr>
<td>COMS 4605</td>
<td>Media, Race and Ethnicity</td>
</tr>
<tr>
<td>ENGL 4609</td>
<td>Global Stages and Theories</td>
</tr>
<tr>
<td>ENGL 4802</td>
<td>Race, Ethnicity and Canadian Lit.</td>
</tr>
<tr>
<td>ENGL 4947</td>
<td>Issues in Diaspora Literature</td>
</tr>
<tr>
<td>ENGL 4960</td>
<td>Indigenous Literatures I</td>
</tr>
<tr>
<td>ENGL 4961</td>
<td>Indigenous Literatures II</td>
</tr>
<tr>
<td>ENGL 4975</td>
<td>Issues in Postcolonial Theory</td>
</tr>
<tr>
<td>ENGL 4976</td>
<td>Issues in Postcolonial Literature</td>
</tr>
<tr>
<td>EURR 4207</td>
<td>Politics of Central Eurasia</td>
</tr>
<tr>
<td>EURR 4209</td>
<td>Politics of the Caucasus and Caspian Basin</td>
</tr>
<tr>
<td>EURR 4304</td>
<td>Europe and International Migration</td>
</tr>
<tr>
<td>FREN 4412</td>
<td>Diversité du français</td>
</tr>
<tr>
<td>GEOG 4021</td>
<td>Seminar in Culture, Identity and Place</td>
</tr>
<tr>
<td>GEOG 4023</td>
<td>Seminar in Special Topics on the City</td>
</tr>
<tr>
<td>GEOG 4024</td>
<td>Seminar in Globalization</td>
</tr>
<tr>
<td>GINS 4908</td>
<td>Honours Research Essay</td>
</tr>
<tr>
<td>HIST 4700</td>
<td>Seminar in World History</td>
</tr>
</tbody>
</table>
Migration and Diaspora Studies (MGDS) Courses

MGDS 2000 [0.5 credit]
Global Migration and Transnationalism
Introduction to the social, cultural, economic and political implications of the movement of people with a multidisciplinary and multiscale approach to topics such as migration and immigration, diaspora identities, global culture, and transnationalism.
Prerequisite(s): second-year standing.
Lecture and discussion three hours a week.

MGDS 4900 [0.5 credit]
Special Topics in Migration and Diaspora Studies
Advanced topics in Migration and Diaspora Studies. Topics vary from term to term.
Prerequisite(s): Fourth-year standing or permission of the department.
Also offered at the graduate level, with different requirements, as MGDS 5900, for which additional credit is precluded.
Seminar three hours a week.

Greek and Roman Studies
This section presents the requirements for programs in:
- Greek and Roman Studies B.A. Honours
- Greek and Roman Studies B.A. Combined Honours
- Greek and Roman Studies B.A.
- Minor In Archaeology
- Minor in Greek and Roman Studies

Program Requirements

Greek and Roman Studies
B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)
1. 1.0 credit in GREK or LATN
2. 3.0 credits in 2000-level CLCV, GREK, or LATN
3. 2.0 credits in 3000-level or higher in CLCV, GREK or LATN
4. 1.0 credit in 4000-level CLCV, GREK, or LATN
5. 3.0 credits in electives in Greek and Roman Studies (CLCV, GREK, LATN, FYSM 1106)

B. Credits Not Included in the Major CGPA (10.0 credits)
6. 8.0 credits in electives not in Greek and Roman Studies (CLCV, GREK, LATN)
7. 2.0 credits in free electives.

Total Credits
20.0

Greek and Roman Studies
B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)
1. 1.0 credit in GREK or LATN
2. 2.0 credits from 2000-level CLCV, GREK, LATN
3. 2.0 credits from 3000-level or higher CLCV, GREK, LATN
4. 1.0 credit in 4000-level CLCV, GREK or LATN
5. 1.0 credit in electives in Greek and Roman Studies (CLCV, GREK, LATN, FYSM 1106)

Total Credits
20.0
### Minor in Archaeology (4.0 credits)

This minor is available to all undergraduate degree students.

**Requirements:**

1. 1.0 credit in:
   - ARCY 1008 [0.5] Introduction to Archaeology I
   - ARCY 1009 [0.5] Introduction to Archaeology II
   
2. 1.0 credit in ARCY or approved electives at the 2000 level
3. 1.0 credit in ARCY or approved electives at the 3000 level
4. 1.0 credit in ARCY or approved electives at any level

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits**

4.0

### Approved Archaeology Electives

Other courses may be substituted for those specified below, when material on archaeology is central to the course. Such substitutions must be individually approved by the Greek and Roman Studies Program Coordinator.

**Note:** "R" designates that the course is repeatable.

<table>
<thead>
<tr>
<th>Anthropology</th>
<th>Art History</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology</td>
<td>ARTH 1100 [0.5] Art and Society: Prehistory to the Renaissance</td>
</tr>
<tr>
<td>ANTH 3580 [0.5] Anthropology of Material Culture and Museums</td>
<td>ARTH 1101 [0.5] Art and Society: Renaissance to the Present</td>
</tr>
</tbody>
</table>

| ARTH 1200 [0.5] History and Theory of Architecture: Prehistory to 1500 |
| ARTH 1201 [0.5] History and Theory of Architecture: 1500 to Present |

| B. Additional Requirements (13.0 credits) | 13.0 |
| 6. The requirements for the other discipline must be satisfied | |
| 7. Sufficient free electives to make 20.0 credits total for the degree. | |

**Total Credits**

20.0

### Greek and Roman Studies

#### B.A. (15.0 credits)

**A. Credits Included in the Major CGPA (6.0 credits)**

1. 3.0 credits in 2000-level CLCV, GREK, or LATN
2. 2.0 credits in 3000-level CLCV, GREK, or LATN
3. 1.0 credit in electives in Greek and Roman Studies (CLCV, GREK, LATN, FYSM 1106)

**B. Credits Not Included in the Major CGPA (9.0 credits)**

4. 6.0 credits in electives not in Greek and Roman Studies (CLCV, GREK, LATN)
5. 3.0 credits in free electives

**Total Credits**

15.0

### Minor in Greek and Roman Studies (4.0 credits)

This minor is available to all undergraduate degree students.

**Requirements:**

1. 1.0 credit in:
   - CLCV 1008 [0.5] Introduction to Greek and Roman Studies
   - Or CLCV 1009 [0.5] Introduction to Greek and Roman Studies

2. 2.0 credits in 2000-level CLCV, GREK, or LATN
3. 2.0 credits in 3000-level CLCV, GREK, or LATN

**Total Credits**

4.0

### Approved Archaeology Electives

Other courses may be substituted for those specified below, when material on archaeology is central to the course. Such substitutions must be individually approved by the Greek and Roman Studies Program Coordinator.

**Note:** "R" designates that the course is repeatable.

<table>
<thead>
<tr>
<th>Anthropology</th>
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<tbody>
<tr>
<td>ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology</td>
<td>ARTH 1100 [0.5] Art and Society: Prehistory to the Renaissance</td>
</tr>
<tr>
<td>ANTH 3580 [0.5] Anthropology of Material Culture and Museums</td>
<td>ARTH 1101 [0.5] Art and Society: Renaissance to the Present</td>
</tr>
</tbody>
</table>

| ARTH 1200 [0.5] History and Theory of Architecture: Prehistory to 1500 |
| ARTH 1201 [0.5] History and Theory of Architecture: 1500 to Present |

| B. Additional Requirements (13.0 credits) | 13.0 |
| 6. The requirements for the other discipline must be satisfied | |
| 7. Sufficient free electives to make 20.0 credits total for the degree. | |

**Total Credits**

20.0

### Greek and Roman Studies Programs

Open to all undergraduate degree students not in the Greek and Roman Studies programs.
Requirements

1. 1.0 credit from CLCV, GREK or LATN at the 2000-level or above 1.0
2. 1.0 credit from CLCV, GREK or LATN at the 3000-level or above 1.0
3. 2.0 credits from any level of CLCV, GREK, or LATN (may include FYSM 1106 [1.0]) 2.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design


Subject codes: AERO, ARCC, ARCH, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences


Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.
Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take care to meet all the requirements for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for further information regarding study on Exchange or Letter of Permission.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements
Degrees
• Bachelor of Arts (B.A.)(Honours)
• Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar. The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing
B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.
The Academic Year (Graduate and Undergraduate Studies)

Classical Civilization (CLCV) Courses

CLCV 1002 [0.5 credit]
Survey of Greek Civilization
Introduction to the study of Greek antiquity and the discipline of Classics and its methodologies. Greek culture and society are set in their historical contexts and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period. Precludes additional credit for CLCV 1000, and CLCV 1109. Lecture three hours a week.

CLCV 1003 [0.5 credit]
Survey of Roman Civilization
Introduction to the study of Roman antiquity and the discipline of Classics and its methodologies. The culture and society are set in their historical context and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period. Precludes additional credit for CLCV 1000 and CLCV 1109. Lecture three hours a week.

CLCV 1004 [0.5 credit]
Elementary Language Tutorial I
Elementary study of an ancient language. Prerequisite(s): Permission of the unit. Tutorial two hours a week plus out-of-class requirements.

CLCV 1005 [0.5 credit]
Elementary Language Tutorial II
Elementary study of an ancient language. Prerequisite(s): Permission of the department. Tutorial two hours a week plus out-of-class requirements.

CLCV 1008 [0.5 credit]
Introduction to Archaeology I
Introduction to the history, theory and practice of field archaeology. Excavations from all time periods and global regions will be discussed. Focus will be placed on excavation methods and technology, including dating, that enhance understanding of sites both on land and underwater. Also listed as ARCY 1008. Precludes additional credit for CLCV 2300 (no longer offered). Lecture three hours a week.

CLCV 1009 [0.5 credit]
Introduction to Archaeology II
Continues the examination of various aspects of field archaeology begun in CLCV 1008. This course places greater focus on recent approaches to the interpretation of remains. These include environmental, cognitive and bioarchaeological approaches. Also listed as ARCY 1009. Precludes additional credit for CLCV 2300 (no longer offered). Lecture three hours a week.

CLCV 2004 [0.5 credit]
Intermediate Language Tutorial I
Intermediate study of an ancient language. Prerequisite(s): permission of the unit. Tutorial two hours a week plus out-of-class requirements.

CLCV 2005 [0.5 credit]
Intermediate Language Tutorial II
Intermediate study of an ancient language. Prerequisite(s): permission of the unit. Tutorial two hours a week plus out-of-class requirements.

CLCV 2008 [0.5 credit]
Greek and Roman Epic
An examination of the genre of epic in Greco-Roman antiquity, including a close reading of translations of Homer and Vergil. Also listed as ENGL 2012. Precludes additional credit for CLCV 2009 and ENGL 2009 (no longer offered). Prerequisite(s): second year standing or permission of the unit. Lecture three hours a week.

CLCV 2010 [0.5 credit]
Greek and Roman Drama
An examination of the genres of tragedy and comedy in Greco-Roman antiquity. Also listed as ENGL 2605. Precludes additional credit for CLCV 2009 or ENGL 2009 (no longer offered). Prerequisite(s): second year standing or permission of the unit. Lecture three hours a week.

CLCV 2100 [0.5 credit]
Scientific and Medical Terminology
Examination of Ancient Greek and Latin roots of technical terms found in the sciences, engineering, and medicine. Lecture three hours a week.

CLCV 2103 [0.5 credit]
Greek Religion
A study of religion in ancient Greece. Also listed as RELI 2735. Precludes additional credit for CLCV 2102 and RELI 2734. Lecture three hours a week.

CLCV 2104 [0.5 credit]
Roman Religion
A study of religion in ancient Rome. Also listed as RELI 2737. Precludes additional credit for CLCV 2102 and RELI 2734. Lecture three hours a week.
CLCV 2105 [1.0 credit]
Greek Philosophy and the Western Tradition
The Greek tradition from its pre-Socratic beginnings to Hellenistic and Roman philosophy (Cynicism, Epicureanism, Stoicism, Scepticism); focus on Socrates, Plato and Aristotle. Its conservation and reappropriation in the Middle Ages and Renaissance. Also listed as PHIL 2005. Precludes additional credit for PHIL 2006, CLCV 2006, PHIL 2007, CLCV 2007 (no longer offered).

CLCV 2303 [0.5 credit]
Greek Art and Archaeology
The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts. Also listed as ARTH 2102. Precludes additional credit for CLCV 2302 (no longer offered) and ARTH 2100 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2304 [0.5 credit]
Roman Art and Archaeology
The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied. Also listed as ARTH 2105. Precludes additional credit for CLCV 2302 and ARTH 2100. Prerequisite(s): second-year standing or permission of the unit.

CLCV 2305 [1.0 credit]
Ancient Science and Technology
The development and application of ancient science and technology in the fields of ancient engineering, machinery, metallurgy, transport, building, agriculture and Hippocratic medicine; the social position of craftsmen and artisans, the attitude of intellectuals to science and manual labour, the effects of slavery. Also listed as TSES 2305. Prerequisite(s): second-year standing or permission of the Department. This course is suitable for students with no previous knowledge of Greece or Rome. Lecture three hours a week.

CLCV 2500 [0.5 credit]
Classical Mythology
A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth. Also listed as ENGL 2500. Precludes additional credit for CLCV 2000 and ENGL 2007 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2902 [0.5 credit]
History of Ancient Greece I
The history of ancient Greece from the Bronze Age through the Archaic period. Also listed as HIST 2902. Precludes additional credit for CLCV 2900 and HIST 2900. Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2903 [0.5 credit]
History of Ancient Greece II
The history of ancient Greece from the classical period to Alexander. Also listed as HIST 2903. Precludes additional credit for CLCV 2900 and HIST 2900. Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2904 [0.5 credit]
History of Ancient Rome I
The history of ancient Rome from early Rome to the end of the Republic. Also listed as HIST 2904. Precludes additional credit for CLCV 2901 and HIST 2901. Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2905 [0.5 credit]
History of Ancient Rome II
The history of ancient Rome from the end of the Republic to the coming of Islam. Also listed as HIST 2905. Precludes additional credit for CLCV 2901 (no longer offered) and HIST 2901 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2906 [0.5 credit]
Studies in Classical Civilization
A study of a selected topic in ancient history, literature, languages, culture, archaeology and/or technology. Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course. Lecture three hours a week.

CLCV 3000 [0.5 credit]
Topics in Ancient History
A study of a selected topic in ancient history. Also listed as HIST 3000. Prerequisite(s): third-year standing or permission of the unit. Permission of the unit is required to repeat this course. Lecture three hours a week.
CLCV 3001 [0.5 credit]  
Early Greek Philosophy  
A study of the pre-Socratic philosophers and of the Sophists and Socrates.  
Also listed as PHIL 3001.  
Prerequisite(s): CLCV 2105 or PHIL 2005 or permission of the Philosophy department.  
Lectures three hours a week.

CLCV 3003 [0.5 credit]  
Topics in Classical Civilization  
A study of a selected topic in classical civilization.  
Prerequisite(s): third-year standing or permission of the unit. Permission of the unit is required to repeat this course.  
Lecture three hours a week.

CLCV 3010 [0.5 credit]  
The Later Roman Empire  
The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire.  
Also listed as HIST 3010.  
Precludes additional credit for CLCV 3002 and HIST 3002.  
Prerequisite(s): a 2000-level CLCV course.  
Lecture three hours a week.

CLCV 3011 [0.5 credit]  
Topics in Ancient Philosophy  
A study of philosophers, texts, problems and issues in ancient philosophy, generally with a focus on Plato and Aristotle.  
Also listed as PHIL 3000.  
Prerequisite(s): 0.5 credit in PHIL and second-year standing, or permission of the Philosophy department.  
Lectures three hours a week.

CLCV 3201 [0.5 credit]  
Studies in Greek History  
Study of a period or theme in Greek History.  
Also listed as HIST 3009.  
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) or permission of the unit. Permission of the unit is required to repeat this course.  
Lecture three hours a week.

CLCV 3202 [0.5 credit]  
Studies in Roman History  
Study of a period or theme in Roman History.  
Also listed as HIST 3101.  
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) or permission of the unit. Permission of the unit is required to repeat this course.  
Lecture three hours a week.

CLCV 3215 [0.5 credit]  
Ancient Greek Science  
The history of Greek physical science from the Presocratics to Ptolemy. (Field a or e).  
Also listed as HIST 3215.  
Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).  
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.  
Lecture three hours a week.

CLCV 3301 [0.5 credit]  
Field Work I: Greek and Roman World  
Students will participate for a minimum of three weeks on an archaeological field project (i.e., excavation or survey) relevant to the Greek and Roman world. They will learn archaeological documentation and the analysis, recording, and processing of finds.  
Includes: Experiential Learning Activity  
Also listed as ARCY 3301.  
Prerequisite(s): CLCV 1008 and CLCV 1009 or CLCV 2300 and permission of the unit. Permission of the unit is required to repeat this course.

CLCV 3306 [0.5 credit]  
Studies in Greek Art  
A study of a period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year.  
Also listed as ARTH 3102, RELI 3732.  
Precludes additional credit for RELI 3731 and ARTH 3101 (no longer offered) and RELI 3306 (if taken summer 2005, summer 2006, summer 2007).  
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.  
Lecture three hours a week.

CLCV 3307 [0.5 credit]  
Studies in Roman Art  
A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.  
Also listed as ARTH 3105, RELI 3733.  
Precludes additional credit for RELI 3731 and ARTH 3101 (no longer offered) and RELI 3306 (if taken summer 2005, summer 2006, summer 2007).  
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.  
Lecture three hours a week.

CLCV 3400 [0.5 credit]  
Greek and Roman Studies Abroad  
This course combines academic study in Canada with first hand examination of museum collections and sites of the ancient world, normally in Greece and Italy. Course content varies from year to year.  
Includes: Experiential Learning Activity  
Prerequisite(s): 1.0 credit in Greek and Roman Studies, any level (CLCV, GREK, or LATN. Permission of the unit is required to repeat this course.  
Hours to be arranged.
CLCV 3701 [0.5 credit]
Studies in Greek Literature
A study of an author or topic in Greek literature. Contents of this course vary from year to year. Also listed as ENGL 3008.
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

CLCV 3702 [0.5 credit]
Studies in Roman Literature
A study of an author or topic in Roman literature. Also listed as ENGL 3009.
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

CLCV 4000 [0.5 credit]
Field Work II: Greek and Roman World
Students participate for a minimum of three weeks in a position of responsibility (for example, as a trench supervisor or lab assistant) on an archaeological field project relevant to the Greek and Roman world.
Includes: Experiential Learning Activity
Also listed as ARCY 4000.
Prerequisite(s): CLCV 3300 and permission of the unit. Permission of the unit is required to repeat this course.
Field work

CLCV 4210 [0.5 credit]
Topics in Ancient History
Intended for Honours students in History and Classics who should normally be in the third and fourth-years.
Includes: Experiential Learning Activity
Also listed as HIST 4210.
Prerequisite(s): CLCV 2902 (HIST 2902), CLCV 2903(HIST 2903) or CLCV 2904 (HIST 2904), CLCV 2905 (HIST 2905) or CLCV 3201 or CLCV 3202 or permission of the unit.
Tutorials three hours a week.

CLCV 4800 [0.5 credit]
Seminar in Greek and Roman Studies
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Greek and Roman Studies B.A. program, or permission of the department.
Seminar three hours a week.

CLCV 4801 [0.5 credit]
Seminar in Greek and Roman Studies
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Greek and Roman Studies B.A. program, or permission of the department.
Seminar three hours a week.

CLCV 4900 [0.5 credit]
Directed Readings and Research
These courses consist of supervised readings and research projects in a specific area of Classical Civilization to be chosen in consultation with the Honours Supervisor.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing and permission of the unit.

Greek (GREK) Courses
GREK 1005 [0.5 credit]
Introduction to Greek I
A course for beginners in ancient Greek, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Greek.
Includes: Experiential Learning Activity
Lectures and tutorials four hours a week.

GREK 1006 [0.5 credit]
Introduction to Greek II
A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.
Includes: Experiential Learning Activity
Prerequisite(s): GREK 1005 or equivalent.
Lectures and tutorials four hours a week.

GREK 2200 [0.5 credit]
Intermediate Greek I
Further study of the language; introduction to the reading of ancient Greek authors.
Includes: Experiential Learning Activity
Precludes additional credit for GREK 2001.
Prerequisite(s): GREK 1006 or equivalent.
Tutorials three hours a week.

GREK 2201 [0.5 credit]
Intermediate Greek II
Continued study of the language; reading of selected prose and poetry by ancient Greek authors; development of translation skills.
Precludes additional credit for GREK 2001.
Prerequisite(s): GREK 2200 or equivalent.
Tutorials three hours a week.

GREK 3900 [0.5 credit]
Advanced Greek I
Reading and critical discussion of selections from ancient Greek.
Prerequisite(s): GREK 2200, GREK 2201 or equivalent.
Tutorials three hours a week.

GREK 3901 [0.5 credit]
Advanced Greek II
Reading and critical discussion of selections from ancient Greek.
Prerequisite(s): GREK 2200, GREK 2201 or equivalent.
Tutorials three hours a week.
GREK 4900 [0.5 credit]
Directed Study

GREK 4901 [0.5 credit]
Directed Study

Latin (LATN) Courses

LATN 1005 [0.5 credit]
Introduction to Latin I
A course for beginners in Latin, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Latin.
Includes: Experiential Learning Activity
Lectures and practice periods four hours a week.

LATN 1006 [0.5 credit]
Introduction to Latin II
A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.
Includes: Experiential Learning Activity
Prerequisite(s): LATN 1005 or equivalent.
Lectures and practice periods four hours a week.

LATN 2200 [0.5 credit]
Intermediate Latin I
Further study of the language; introduction to the reading of Latin authors.
Includes: Experiential Learning Activity
Precludes additional credit for LATN 2001.
Prerequisite(s): LATN 2200 or equivalent.
Tutorials three hours a week.

LATN 2201 [0.5 credit]
Intermediate Latin II
Continued study of the language; reading of selected prose and poetry by Latin authors; development of translation skills.
Precludes additional credit for LATN 2001.
Prerequisite(s): LATN 2200 or equivalent.
Tutorials three hours a week.

LATN 3900 [0.5 credit]
Advanced Latin I
Reading and critical discussion of selections from Latin poetry.
Prerequisite(s): LATN 2200, LATN 2201 or equivalent.
Tutorials three hours a week.

LATN 3901 [0.5 credit]
Advanced Latin II
Reading and critical discussion of selections from Latin prose.
Prerequisite(s): LATN 2200, LATN 2201 or equivalent.
Tutorials three hours a week.

LATN 4900 [0.5 credit]
Directed Study

LATN 4901 [0.5 credit]
Directed Study

Health Sciences

This section presents the requirements for programs in:
- Health Sciences with Concentration B.H.Sc. Honours
- Concentration in Biomedical Sciences
- Concentration in Disability and Chronic Illness
- Concentration in Environment and Health
- Concentration in Global Health
- Concentration in Health Throughout the Lifespan
- Health Sciences B.H.Sc.
- Journalism with Concentration in Health Sciences B.J. Honours
- Minor in Health Sciences

Program Requirements

Students in the B.H.Sc. Honours program choose to follow one of five concentrations. The selection must take place at admission.

Health Sciences with Concentration
B.H.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA 10.5 credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>HLTH 1000 [0.5]</td>
<td></td>
<td>Fundamentals of Health</td>
</tr>
<tr>
<td>HLTH 1002 [0.5]</td>
<td></td>
<td>Health Science Communication</td>
</tr>
<tr>
<td>HLTH 2001 [0.5]</td>
<td></td>
<td>Health Research Methods and Skills</td>
</tr>
<tr>
<td>HLTH 2002 [0.5]</td>
<td></td>
<td>Molecular and Cellular Pathology</td>
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<td>HLTH 2003 [0.5]</td>
<td></td>
<td>Social Determinants of Health</td>
</tr>
<tr>
<td>HLTH 3101 [0.5]</td>
<td></td>
<td>Global Health</td>
</tr>
<tr>
<td>HLTH 3201 [0.5]</td>
<td></td>
<td>Epidemiology</td>
</tr>
<tr>
<td>HLTH 3302 [0.5]</td>
<td></td>
<td>Immunity and Immune-Related Disorders</td>
</tr>
<tr>
<td>HLTH 3404 [0.5]</td>
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<td>Psychosocial and Biological Interactions in Health</td>
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2. 1.5 credits in:

a) Project/Field Placement pathway

0.5 credit from:

<table>
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<tr>
<th>Course</th>
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<tr>
<td>HLTH 3901 [0.5]</td>
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<td>Emerging Issues in Health Sciences I</td>
</tr>
<tr>
<td>HLTH 3902 [0.5]</td>
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<td>Emerging Issues in Health Sciences II</td>
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<tr>
<td>HLTH 3903 [0.5]</td>
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<td>Emerging Issues in Health Sciences III</td>
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<tr>
<td>HLTH 3904 [0.5]</td>
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<td>Emerging Issues in Health Sciences IV</td>
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<tr>
<td>HLTH 3905 [0.5]</td>
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<td>Emerging Issues in Health Sciences V</td>
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and

1.0 credit from:

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<tr>
<td>HLTH 4907 [1.0]</td>
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<td>Capstone Course – Group Research Project</td>
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<tr>
<td>HLTH 4909 [1.0]</td>
<td></td>
<td>Capstone Course – Field Placement and Research Project</td>
</tr>
<tr>
<td>HLTH 4910 [1.0]</td>
<td></td>
<td>Honours Individual Research Thesis</td>
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</table>

OR

b) Essay pathway

0.5 credit in HLTH elective at the 3000 level or above
B. Credits Not Included in the Major CGPA (9.5 credits)

<table>
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<tr>
<th>5. 2.5 credits in:</th>
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<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
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<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
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<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
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<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>MATH 1007 [0.5]</td>
<td>Elementary Calculus I</td>
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<table>
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<th>1.0</th>
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<tbody>
<tr>
<td>ECON 1001 [0.5]</td>
<td>Introduction to Microeconomics</td>
</tr>
<tr>
<td>ECON 1002 [0.5]</td>
<td>Introduction to Macroeconomics</td>
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<td>STAT 2509 [0.5]</td>
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<tr>
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<tr>
<th>9. 0.5 credit in approved 2000-level concentration electives</th>
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<tr>
<td>PHIL 2408 [0.5]</td>
<td>Bioethics</td>
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| 11. 3.0 credits in free electives. | 3.0 |

NOTE: The maximum allowed combined number of minors and concentrations for any student is two.

Total Credits: 20.0

Concentration in Biomedical Sciences (5.0 credits)

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<tr>
<td>NEUR 2201 [0.5]</td>
<td>Cellular and Molecular Neuroscience</td>
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<td>Microbiology and Virology</td>
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Total Credits: 5.0

Concentration in Disability and Chronic Illness (5.5 credits)

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<td>Microbiology and Virology</td>
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<td>NEUR 2202 [0.5]</td>
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### concentration in environment and health (6.0 credits)

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<tr>
<td>HLTH 4502 [0.5]</td>
<td>Disabilities and Disorders Related to Sensory Nervous System</td>
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<td>HLTH 4503 [0.5]</td>
<td>Trauma-related Disability and Impairments</td>
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<tr>
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<td>Neurodevelopmental Determinants of Mental Health</td>
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<tr>
<td>HLTH 3403 [0.5]</td>
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### Concentration in Global Health (5.5 credits)

1. **1.0 credit from:**
   - HLTH 4101 [0.5] Global Health Governance
   - HLTH 4102 [0.5] New Health Technologies
   - HLTH 4301 [0.5] Pandemics and Infectious Disease
   - HLTH 4302 [0.5] Inflammatory and Endocrine Factors in Diseases
   - HLTH 4401 [0.5] Maternal and Perinatal Determinants of Health
   - HLTH 4502 [0.5] Disabilities and Disorders Related to Sensory Nervous System
   - HLTH 4503 [0.5] Trauma-related Disability and Impairments
   - HLTH 4701 [0.5] Knowledge Translation
   - HLTH 4901 [0.5] Directed Studies in Health

2. **0.5 credit from:**
   - BIOL 3305 [0.5] Human and Comparative Physiology
   - HLTH 3503 [0.5]
   - HLTH 4102 [0.5] New Health Technologies
   - HLTH 4201 [0.5] Directed Studies in Health
   - HLTH 4302 [0.5] Inflammatory and Endocrine Factors in Diseases
   - HLTH 4303 [0.5] New Health Technologies
   - HLTH 4401 [0.5] Maternal and Perinatal Determinants of Health
   - HLTH 4402 [0.5] Health Program Evaluation Tools and Methods
   - HLTH 4502 [0.5] Disabilities and Disorders Related to Sensory Nervous System
   - HLTH 4503 [0.5] Trauma-related Disability and Impairments
   - HLTH 4701 [0.5] Knowledge Translation
   - HLTH 4901 [0.5] Directed Studies in Health
   - NEUR 3304 [0.5] Hormones and Behaviour
   - NEUR 3401 [0.5] Environmental Toxins and Mental Health
   - NEUR 3501 [0.5] Neurodegeneration and Aging
   - NEUR 3502 [0.5] Neurodevelopmental Determinants of Mental Health

3. **2.5 credits in:**
   - HLTH 2004 [0.5] Microbiology and Virology
   - HLTH 3102 [0.5] Indigenous Health in a Global World
   - HLTH 4101 [0.5] Global Health Governance
   - HLTH 4301 [0.5] Pandemics and Infectious Disease
   - HLTH 4401 [0.5] Maternal and Perinatal Determinants of Health
   - HLTH 4402 [0.5] Health Program Evaluation Tools and Methods
   - HLTH 4502 [0.5] Disabilities and Disorders Related to Sensory Nervous System
   - HLTH 4503 [0.5] Trauma-related Disability and Impairments
   - HLTH 4701 [0.5] Knowledge Translation
   - HLTH 4901 [0.5] Directed Studies in Health
   - NEUR 2201 [0.5] Cellular and Molecular Neuroscience
   - PSYC 2301 [0.5] Introduction to Health Psychology

4. **0.5 credit from:**
   - BIOL 3307 [0.5] Advanced Human Anatomy and Physiology
   - CHEM 2203 [0.5] Organic Chemistry I
   - FOOD 2001 [0.5] Principles of Nutrition
   - NEUR 2202 [0.5] Microbiology and Virology
   - NEUR 3502 [0.5] Neurodevelopmental Determinants of Mental Health
   - PSYC 2301 [0.5] Introduction to Health Psychology

5. **1.0 credit from:**
   - BIOL 3305 [0.5] Human and Comparative Physiology
   - CHEM 2203 [0.5] Organic Chemistry I
   - COMS 2500 [0.5] Communication and Science
   - GEOG 3206 [0.5] Health, Environment, and Society
   - HLTH 3103 [0.5] Health Policy and Canada's Health Care System
   - HLTH 3104 [0.5] Regulatory Issues and Human Health
   - HLTH 3303 [0.5] Molecular and Cellular Pathology II
   - HLTH 3401 [0.5] Diseases of Childhood
   - HLTH 3402 [0.5] Diseases of Aging
   - HLTH 3403 [0.5] Gender and Health
   - HLTH 3503 [0.5] Disability and Chronic Health Conditions
   - HLTH 3505 [0.5] Disability and Chronic Health Conditions
   - HLTH 4102 [0.5] New Health Technologies
   - HLTH 4202 [0.5] Health Program Evaluation Tools and Methods
   - HLTH 4303 [0.5] New Health Technologies
   - HLTH 4401 [0.5] Maternal and Perinatal Determinants of Health
   - HLTH 4402 [0.5] Health Program Evaluation Tools and Methods
   - HLTH 4601 [0.5] Environmental Pollution and Health

**Total Credits**: 6.0

### Concentration in Health Throughout the Lifespan (5.5 credits)

1. **0.5 credit in:**
   - NEUR 2201 [0.5] Cellular and Molecular Neuroscience

2. **0.5 credit from:**
   - BIOL 2303 [0.5] Microbiology
   - CHEM 2203 [0.5] Organic Chemistry I
   - FOOD 2001 [0.5] Principles of Nutrition
   - HLTH 4101 [0.5] Global Health Governance
   - HLTH 4201 [0.5] Applied Health Statistics
   - HLTH 4301 [0.5] Pandemics and Infectious Disease
   - HLTH 4401 [0.5] Maternal and Perinatal Determinants of Health
   - HLTH 4402 [0.5] Health Program Evaluation Tools and Methods
   - NEUR 3304 [0.5] Hormones and Behaviour
   - PSYC 2301 [0.5] Introduction to Health Psychology

3. **2.5 credits in:**
   - BIOL 3305 [0.5] Human and Comparative Physiology
   - HLTH 3102 [0.5] Indigenous Health in a Global World
   - HLTH 3303 [0.5] Molecular and Cellular Pathology II
   - HLTH 3401 [0.5] Diseases of Childhood
   - HLTH 3402 [0.5] Diseases of Aging
   - HLTH 3403 [0.5] Gender and Health
   - HLTH 3503 [0.5] Disability and Chronic Health Conditions
   - HLTH 4102 [0.5] New Health Technologies
   - HLTH 4202 [0.5] Health Program Evaluation Tools and Methods
   - HLTH 4303 [0.5] New Health Technologies
   - HLTH 4401 [0.5] Maternal and Perinatal Determinants of Health
   - HLTH 4601 [0.5] Environmental Pollution and Health

4. **0.5 credit from:**
   - HLTH 4201 [0.5] Applied Health Statistics
   - HLTH 4402 [0.5] Health Program Evaluation Tools and Methods

5. **1.0 credit from:**
   - BIOL 3305 [0.5] Human and Comparative Physiology
   - BIOL 3307 [0.5] Advanced Human Anatomy and Physiology
   - COMS 2500 [0.5] Communication and Science
   - GEOG 3206 [0.5] Health, Environment, and Society
   - HLTH 3103 [0.5] Health Policy and Canada's Health Care System
   - HLTH 3303 [0.5] Molecular and Cellular Pathology II
   - HLTH 3403 [0.5] Gender and Health
   - HLTH 3503 [0.5] Disability and Chronic Health Conditions
   - HLTH 4102 [0.5] New Health Technologies
   - HLTH 4202 [0.5] Health Program Evaluation Tools and Methods
   - HLTH 4303 [0.5] New Health Technologies
   - HLTH 4401 [0.5] Maternal and Perinatal Determinants of Health
   - HLTH 4601 [0.5] Environmental Pollution and Health

**Total Credits**: 5.5
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<td>HLTH 3404 [0.5]</td>
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<td>PHIL 1550 [0.5]</td>
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**Total Credits: 5.5**

**Health Sciences**

**B.H.Sc. (15.0 credits)**

**A. Credits Included in the Major CGPA (7.0 credits)**

1. **2.5 credits in:**
   - HLTH 1000 [0.5] Fundamentals of Health
   - HLTH 1002 [0.5] Health Science Communication
   - HLTH 2001 [0.5] Health Research Methods and Skills
   - HLTH 2002 [0.5] Molecular and Cellular Pathology
   - HLTH 2003 [0.5] Social Determinants of Health

2. **1.0 credit in:**
   - STAT 2507 [0.5] Introduction to Statistical Modeling I
   - STAT 2509 [0.5] Introduction to Statistical Modeling II

3. **0.5 credit from:**
   - BIOL 3305 [0.5] Human and Comparative Physiology
   - BIOL 3306 [0.5] Human Anatomy and Physiology

4. **0.5 credit from:**
   - BIOL 2303 [0.5] Microbiology
   - JOUR 3207 [0.5] Reporting in Depth
   - JOUR 3208 [0.5] Video Journalism
   - JOUR 3225 [0.5] Reporting in Depth

**Total Credits: 15.0**

**Journalism with Concentration in Health Sciences**

**B.J. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (8.0 credits)**

1. **1.0 credit in:**
   - JOUR 1001 [0.5] Foundations: Journalism in Context
   - JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society

2. **2.0 credits in:**
   - JOUR 2201 [1.0] Fundamentals of Reporting
   - JOUR 2202 [0.5] Digital Journalism Toolkit
   - JOUR 2501 [0.5] Media Law

3. **2.5 credits in:**
   - JOUR 3207 [0.5] Audio Journalism
   - JOUR 3208 [0.5] Video Journalism
   - JOUR 3225 [0.5] Reporting in Depth
1. 2.5 credits in:  
- HLTH 1001 [0.5] Principles of Health I
- HLTH 2001 [0.5] Health Research Methods and Skills
- HLTH 2002 [0.5] Molecular and Cellular Pathology
- HLTH 2003 [0.5] Social Determinants of Health
- HLTH 2020 [0.5] Principles of Health II

2. 1.5 credits in HLTH at the 3000-level or higher  

3. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Regulations
In addition to the program requirements described here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Students should consult with the department when planning their program and selecting courses.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific
course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees
- Bachelor of Health Sciences (Honours)
- Bachelor of Health Sciences

Admission Requirements
First Year
B.H.Sc. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended). A 4U course in English is recommended.

B.H.Sc.
Access to the B.H.Sc. degree is limited to B.H.Sc. (Honours) students who apply to transfer.

Advanced Standing
The program maintains a number of places for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA of 9.00 (B+) or higher.

Health Sciences (HLTH) Courses
HLTH 1000 [0.5 credit]
Fundamentals of Health
Introduction to what comprises a healthy body and mind, and what leads to illness and disease. Biomedical, psychosocial, and epidemiological approaches to current issues in the field of health. Policy and cultural/environmental contexts.
Includes: Experiential Learning Activity
Lectures three hours a week.

HLTH 1001 [0.5 credit]
Principles of Health I
Health and illness will be considered from an interdisciplinary perspective, including biomedical, cultural, psychosocial, and environmental.
Precludes additional credit for HLTH 1000.
Lecture three hours a week.

HLTH 1002 [0.5 credit]
Health Science Communication
Introduction to using library, database and/or bioinformatics resources to develop informed verbal, non-verbal and written communication within the context of healthcare, public health and health research. Concepts in ethical scholarship, proper use of sources and plagiarism will be introduced.
Lecture three hours a week.

HLTH 2001 [0.5 credit]
Health Research Methods and Skills
An introduction to quantitative and qualitative methods and designs in health sciences research. Basic research skills will also be provided, including regulatory aspects of conducting research, information literacy skills, evaluating published research and other sources of evidence in the digital age.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 1000 or HLTH 1001.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 2002 [0.5 credit]
Molecular and Cellular Pathology
Introduction to the causes, natural history, and pathophysiology of common human diseases of various organ systems. Diseases related to structural and functional changes at the molecular, cellular and organ level.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 1000 and BIOL 1103 or HLTH 2020.
Lecture three hours a week.

HLTH 2003 [0.5 credit]
Social Determinants of Health
Overview of the social determinants of health, ranging from early life experiences, poverty, social status, migration, and the physical environment. The relation between social determinants and environmental vulnerabilities, health behaviours, illness prevalence, treatment outcomes, and access to health care.
Prerequisite(s): HLTH 1000 or HLTH 1001.
Lecture three hours a week.

HLTH 2004 [0.5 credit]
Microbiology and Virology
Introduction to the pathogenic microorganisms, including fungal, bacterial, viral and prion. Biochemical, genetic, pathological and epidemiological aspects in the human context; their interaction with host defense systems and strategies for antibiotic and vaccine development.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 3301 (no longer offered).
Prerequisite(s): HLTH 1000 and BIOL 1103 or permission of the department.
Lecture three hours a week, and laboratory three hours a week.
HLTH 2020 [0.5 credit]
Principles of Health II
An overview of the history of medicine, its relationship to society, medical and health terminology, introduction to organ systems, diseases, illnesses and their diagnoses, current events in health and medicine.
Prerequisite(s): HLTH 1001 or permission of the department.
Lecture three hours a week.

HLTH 3101 [0.5 credit]
Global Health
Overview of issues in global health with focus on low- and middle-income countries. Key indicators and determinants of global health, implementation and evaluation of global programs, challenges of research and interventions in under served areas, and key players in addressing global health issues.
Prerequisite(s): HLTH 2001 and HLTH 2003, or permission of the department.
Lecture and seminar, three hours per week.

HLTH 3102 [0.5 credit]
Indigenous Health in a Global World
The health conditions of Indigenous peoples in different regions of the world; social and biological factors that contribute to greater risk and poor health; strategies of Indigenous peoples to restore health to their peoples.
Prerequisite(s): HLTH 2001 and HLTH 2003, or permission of the department.
Lecture and seminar three hours per week.

HLTH 3103 [0.5 credit]
Health Policy and Canada's Health Care System
The history of Canada's health care system. The model of financing and intergovernmental responsibilities. Current and emerging policy debates facing our health care system, and the role of scientific evidence in decision-making and policy development.
Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the department.
Lecture and seminar three hours per week.

HLTH 3104 [0.5 credit]
Regulatory Issues and Human Health
The general principles of health regulatory policies in Canada. The role of scientific evidence in developing legislation and regulations at different levels, including probable levels of risk, standards of evidence, cost-benefit analysis, ethical considerations, psychosocial factors influencing risk management and compliance, and evolving technologies.
Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the department.
Lecture and seminar three hours a week.

HLTH 3201 [0.5 credit]
Epidemiology
Basic concepts of epidemiologic study designs and measures; inferences that are fundamental to the identification of causes and prevalence of diseases. Specialized issues within epidemiology including gene-environment interactions and the clustering of specific disease phenotypes.
Includes: Experiential Learning Activity
Prerequisite(s): STAT 2507 and HLTH 2001, or permission of the department.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 3302 [0.5 credit]
Immunity and Immune-Related Disorders
Basic processes relevant to the immune system; the relationship between immune activity and functioning as related to the development of particular pathologies, such as virally-related illness, autoimmune disorders, inflammatory illnesses, and interactions with social and economic factors that promote immune-related disturbances.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 2002 and BIOL 2200 or permission of the department.
Lecture three hours a week, laboratory four hours a week. Labs require regular participation outside of the scheduled lab time.

HLTH 3303 [0.5 credit]
Molecular and Cellular Pathology II
Advanced concepts in cell signaling and function, cell injury and death, tissue structure and wound healing and repair. This course will integrate genetic, biochemical and physiological mechanisms that contribute to health and disease.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 2002.
Lecture three hours a week, lab four hours a week.

HLTH 3401 [0.5 credit]
Diseases of Childhood
Epidemiological, psychological and physiological basis for disease in childhood and adolescence. Topics will be discussed from a global and Canadian perspective and include the medicalization of these diseases.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.
Lecture three hours a week.
HLTH 3402 [0.5 credit]  
Diseases of Aging  
Aging is accompanied by increased illness related to cardiovascular, immune and neurodegenerative processes. This course assesses the fundamental mechanisms that determine these pathological conditions. Molecular mechanisms and psychosocial determinants; intervention and therapeutic strategies.  
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of department.  
Lecture three hours a week.

HLTH 3403 [0.5 credit]  
Gender and Health  
The role of gender on psychosocial and biological mechanisms that alter the course of disease and treatment; health issues unique to women (e.g., reproductive and maternal health); the role of gender across cultures.  
Prerequisite(s): HLTH 2002 and HLTH 2003, or permission of the department.  
Lecture and seminar three hours a week.

HLTH 3404 [0.5 credit]  
Psychosocial and Biological Interactions in Health  
The psychosocial and biological mechanisms that interact to influence health outcomes. Cultural, political, socioeconomic, and psychological factors that can impact the biological mechanisms underlying both mental and physical health; epigenetic and genetic alterations; implications for psychosocial interventions.  
Precludes additional credit for HLTH 4402 (no longer offered).  
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.  
Lecture and seminar three hours a week.

HLTH 3503 [0.5 credit]  
Disability and Chronic Health Conditions  
An interdisciplinary view of disability and chronic health conditions, including risk factors, prevalence, and the trajectory of such conditions. Functional impact based on life stage. Strategies for health promotion, prevention, accommodations, treatment, and rehabilitation.  
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.  
Lecture three hours a week.

HLTH 3901 [0.5 credit]  
Emerging Issues in Health Sciences I  
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.  
Seminars three hours a week.

HLTH 3902 [0.5 credit]  
Emerging Issues in Health Sciences II  
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.  
Seminars three hours a week.

HLTH 3903 [0.5 credit]  
Emerging Issues in Health Sciences III  
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.  
Seminars three hours a week.

HLTH 3904 [0.5 credit]  
Emerging Issues in Health Sciences IV  
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.  
Seminars three hours a week.

HLTH 3905 [0.5 credit]  
Emerging Issues in Health Sciences V  
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.  
Seminars three hours a week.
HLTH 4101 [0.5 credit]
Global Health Governance
Contemporary issues and debates in global health governance and effects on health monitoring and outcomes at individual and population levels. Historical patterns of global health, its regulatory framework, principal coordinating mechanisms and emerging challenges, and implications of globalization and international trade policies.
Prerequisite(s): HLTH 3101, or permission of the department.
Lecture and seminar three hours per week.

HLTH 4102 [0.5 credit]
New Health Technologies
Overview of new and emerging health technologies, including medical and assistive devices, diagnostics and screening, genetics, reproduction, tissue regeneration, imaging, and health informatics. Health technology assessment methods and issues. Regulatory, ethical and social implications; considerations in the developing world.
Prerequisite(s): HLTH 1000 or HLTH 1001 and third-year standing or higher, or permission of the department.
Also offered at the graduate level, with different requirements, as HLTH 5350, for which additional credit is precluded.
Lecture and seminar three hours a week.

HLTH 4201 [0.5 credit]
Applied Health Statistics
Statistics concepts and procedures used in the analysis of health data; techniques commonly used to analyze data collected from different types of epidemiological and experimental study designs; how to interpret and present statistical findings.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 3201 and STAT 2507 or permission of the department.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 4202 [0.5 credit]
Health Program Evaluation Tools and Methods
Introduction to concepts, principles and processes of evaluating health care programs and interventions. Methodological tools including needs assessment, project management skills, use of health information management databases. Issues in communication with stakeholders, including change management and decision making.
Prerequisite(s): HLTH 2001 and STAT 2507 or permission of the department.
Lecture and seminar three hours a week.

HLTH 4301 [0.5 credit]
Pandemics and Infectious Disease
Factors that influence disease processes, including viruses, bacteria, protozoa, fungi and infectious agents, how these agents come to have the effects that they do in a given individual, how they spread within and how to limit their spread.
Prerequisite(s): HLTH 2004 and HLTH 3302 or permission of the department.
Lecture three hours a week.

HLTH 4302 [0.5 credit]
Inflammatory and Endocrine Factors in Diseases
Inflammatory and hormonal processes and their relevance to disease states. Immune-related disorders, heart disease and stroke, metabolic syndrome, diabetes, psychiatric conditions, and neurodegenerative disorders. The contribution of psychosocial and genetic factors to diseases.
Prerequisite(s): HLTH 3302 or BIOL 4200 or BIOC 4200 or permission of the department.
Lecture three hours a week.

HLTH 4303 [0.5 credit]
Fundamentals in Pharmacology and Toxicology
Introduction to pharmacological principles, xenobiotics and their interactions within living systems. Topics include biological mechanisms of action of xenobiotics on macromolecules, cells and their effects on various organ systems. Social, legal and governmental policies will be discussed.
Prerequisite(s): HLTH 3303 or permission of the department.
Lecture and seminar three hours a week.

HLTH 4304 [0.5 credit]
Host-Pathogen Interactions
Advanced cellular and molecular mechanisms governing host-pathogen interactions and their contribution to disease. Exploration of immune signaling and recognition, virulence factors, antimicrobial resistance and research techniques used in this field.
Prerequisite(s): HLTH 2004 and HLTH 3302 or permission of the department.
Also offered at the graduate level, with different requirements, as HLTH 5403, for which additional credit is precluded.
Seminar three hours per week.

HLTH 4401 [0.5 credit]
Maternal and Perinatal Determinants of Health
The integrated genetic, physiologic and environmental events occurring in early life that impact pregnancy, fetal/infant development and disease risk throughout the lifecourse, with a focus on the mechanisms driving these events.
Prerequisite(s): HLTH 2003 and HLTH 3302 or permission of the department.
Lecture three hours a week.
HLTH 4502 [0.5 credit]
Disabilities and Disorders Related to Sensory Nervous System
Congenital and acquired disabilities related to sensory organs and processes, including visual and hearing impairments, vestibular and balance disorders, reflex problems, and others. Interdisciplinary approach to causes, mechanisms, accessibility, accommodations and interventions.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 3501 (no longer offered).
Prerequisite(s): Either 1) HLTH 3503 and (BIOL 2005 or BIOL 3305 or BIOL 3306), or 2) NEUR 3206, or 3) permission of the department.
Lecture three hours a week, workshop two hours a week.

HLTH 4503 [0.5 credit]
Trauma-related Disability and Impairments
Biomedical and psychosocial factors associated with trauma-related illnesses, stressors, injuries and disabilities, including traumatic brain injury, spinal cord injury, fractures, amputations, burns, post-traumatic stress disorder, and others. Short- and long-term considerations for care and rehabilitation.
Precludes additional credit for HLTH 3502 (no longer offered).
Prerequisite(s): HLTH 3503 and (BIOL 2005 or BIOL 3305 or BIOL 3306) or permission of the department.
Lecture three hours a week.

HLTH 4501 [0.5 credit]
Directed Studies in Health
Independent study, open to third- and fourth-year students to explore a particular health related topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work. Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the B.H.Sc. program, in addition to permission of the Faculty supervisor and the Department of Health Sciences.

HLTH 4901 [0.5 credit]
Knowledge Translation
The application of knowledge translation in the formulation of policy and the development of skills required to maximize the impact of scientific findings through real world programs and policies and communication skills for diverse audiences.
Prerequisite(s): fourth-year standing and permission of the instructor.
Also offered at the graduate level, with different requirements, as HLTH 5300, for which additional credit is precluded.
Seminar three hours a week.

HLTH 4906 [1.0 credit]
Capstone course – Research Essay
Independent critical review and research proposal on a health-related topic, using library, database and/or bioinformatics resources, under the supervision of the course instructor. Seminar topics include identification and critical review of resources, development of scientific writing skills, and formulation of health science-related research.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 4907, HLTH 4908 (no longer offered), HLTH 4909, HLTH 4910.
Prerequisite(s): fourth-year standing in the B.H.Sc. Honours and permission of the Department of Health Sciences.
Lecture/seminar three hours a week.

HLTH 4907 [1.0 credit]
Capstone Course – Group Research Project
A collaborative project on a health related topic. Students, working together as a team, will complete a research project and develop communication and research skills under the supervision of the faculty supervisor. Evaluation will be based on a written report and oral presentation. Includes: Experiential Learning Activity
Precludes additional credit for HLTH 4906, HLTH 4908 (no longer offered), HLTH 4909, HLTH 4910.
Prerequisite(s): fourth-year standing in the B.H.Sc. Honours program, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 9.0, and permission of the Faculty supervisor and the Department of Health Sciences.
Seminars three hours a week as scheduled by the course instructor; other hours as arranged with the Faculty Adviser.
HLTH 4909 [1.0 credit]
Capstone Course – Field Placement and Research Project
Field placement providing practical experience in a health-related field. Placements may be in institutional or community settings, governmental or non-governmental organizations. Sites may vary each year. Evaluation based on a written report and an oral presentation.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 4906, HLTH 4907, HLTH 4908 (no longer offered), HLTH 4910.
Prerequisite(s): fourth-year standing in B.H.Sc. Honours, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 9.0 and permission of the Department of Health Sciences.
Schedules may vary depending on the field placement site, but students are required to spend a minimum of eight hours per week on-site and attend required seminars as arranged by the course instructor.

HLTH 4910 [1.0 credit]
Honours Individual Research Thesis
An independent health related research project under the direct supervision of a faculty member. Evaluation will be based on a written thesis and oral poster presentation (oral or poster).
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 4906, HLTH 4907, HLTH 4908, HLTH 4909.
Prerequisite(s): fourth-year standing in B.Sc. Honours Health Sciences, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 10.0, and permission of the Faculty advisor and the Department of Health Sciences. Permission will depend, in part, on capacity, such that meeting the minimum requirements does not guarantee enrollment in this research thesis course.

History
This section presents the requirements for programs in:
- History B.A. Honours
- History B.A. Combined Honours
- History with Concentration in Public History B.A. Honours
- History B.A.
- Minor in History
- Specialization in Global and Transnational History B.G.In.S. Honours
- Stream in Global and Transnational History B.G.In.S.

Program Requirements

Course Categories
The following field definitions are used to classify history courses:
1. the world before 1750 (Field a)
2. modern Europe (Field b)
3. North America (Field c)
4. Asia, Africa, the Caribbean, and Latin America (Field d)
5. ideas, culture, and society (Field e)
The field classification of each course is included with the course description. Courses that do not have a history field classification cannot be used to meet the history field requirements of degree programs in History.

History
B.A. Honours (20.0 credits)
The requirements for this program are modified when the Honours Research Project is included.

Normal Pattern

<table>
<thead>
<tr>
<th>A. Credits Included in the Major CGPA (10.0 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 7.0 credits in history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:</td>
</tr>
<tr>
<td>a. 1.0 credit at the 1000-level or FYSM 1405</td>
</tr>
<tr>
<td>b. 2.0 credits at the 2000-level</td>
</tr>
<tr>
<td>c. 3.0 credits at the 3000-level</td>
</tr>
<tr>
<td>d. 1.0 credit at the 2000- or 3000-level.</td>
</tr>
<tr>
<td>2. 0.5 credit in:</td>
</tr>
<tr>
<td>HIST 2809 [0.5] The Historian's Craft</td>
</tr>
<tr>
<td>3. 0.5 credit from:</td>
</tr>
<tr>
<td>HIST 3810 [0.5] Historical Theory</td>
</tr>
<tr>
<td>HIST 3820 [0.5] Explorations in Historical Theory</td>
</tr>
<tr>
<td>4. 2.0 credits in 4000-level history seminars</td>
</tr>
<tr>
<td>B. Credits Not Included in the Major CGPA (10.0 credits)</td>
</tr>
<tr>
<td>5. 8.0 credits in electives not in HIST</td>
</tr>
<tr>
<td>6. 2.0 credits in free electives (may be HIST)</td>
</tr>
<tr>
<td>Total Credits</td>
</tr>
</tbody>
</table>

Honours Research Project Pattern

A. Credits Included in the Major CGPA (10.0 credits)
1. 6.0 credits in history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:
   a. 1.0 credit at the 1000-level or FYSM 1405 |
   b. 2.0 credits at the 2000-level |
   c. 2.0 credits at the 3000-level |
   d. 1.0 credit at the 2000- or 3000-level |
| 2. 0.5 credit in: |
|   HIST 2809 [0.5] The Historian's Craft |
| 3. 0.5 credit from: |
|   HIST 3810 [0.5] Historical Theory |
|   HIST 3820 [0.5] Explorations in Historical Theory |
| 4. 2.0 credits in 4000-level history seminars |
| 5. 1.0 credits in: |
|   HIST 4910 [1.0] Honours Research Project |
| B. Credits Not Included in the Major CGPA (10.0 credits) |
| 6. 8.0 credits in electives not in HIST |
| 7. 2.0 credits in free electives (may be HIST) |
| Total Credits |

Notes:
1. Students should endeavour to have one course at the 2000- or 3000-level in the area of each fourth-year seminar.

History
B.A. Combined Honours (20.0 credits)

A. Credits Included in the History Major CGPA (6.0 credits)

1. 4.0 credits in history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:
   a. 1.0 credit in HIST at the 1000-level or FYSM 1405
   b. 2.0 credits in HIST at the 2000-level
   c. 1.0 credit in HIST at the 3000-level

2. 0.5 credit in:
   HIST 2809 [0.5] The Historian's Craft

3. 0.5 credit from:
   HIST 3810 [0.5] Historical Theory
   HIST 3820 [0.5] Explorations in Historical Theory

4. 1.0 credit in 4000-level history seminar(s) 1.0

B. Additional Credit Requirements (14.0 credits)

5. The requirements of the other discipline must be satisfied

6. Sufficient free elective credits to make 20.0 credits for the degree.

Total Credits 20.0

History with Concentration in Public History
B.A. Honours (20.0 credits)

A. Credits included in the Major CGPA (11.0 credits)

1. 7.0 credits in history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:
   a. 1.0 credit at the 1000-level
   b. 1.0 credit at the 2000-level
   c. 2.0 credit at the 3000-level
   d. 0.5 credit from
   e. 2.5 credits in HIST at the 3000-level

2. 0.5 credit in:
   HIST 2809 [0.5] The Historian's Craft

3. 0.5 credit in:
   HIST 2811 [0.5] Public History from Memory to Museums

4. 0.5 credit from:
   HIST 3810 [0.5] Historical Theory
   HIST 3820 [0.5] Explorations in Historical Theory

5. 0.5 credit in:
   HIST 3809 [0.5] Historical Representations

6. 0.5 credit from:
   HIST 3807 [0.5] Practicum in History
   HIST 3815 [0.5] Group Practicum

7. 1.5 credits from (with at least 1.0 credit at the 3000-level): 1.5
   HIST 2812 [0.5] Special Subject in Public History
   HIST 3001 [0.5] History at the Movies
   HIST 3507 [0.5] An Immigrant's Guide to Canada
   HIST 3812 [0.5] Digital History
   HIST 3814 [0.5] Crafting Digital History
   HIST 3807 [0.5] Practicum in History (if not used toward Item 6, above)

HIST 3815 [0.5] Group Practicum (if not used toward Item 6, above)
HIST 3909 [0.5] Topic in Public History

0.5 credit from approved electives may be counted towards this requirement.

8. 2.0 credits in 4000-level history seminars with at least 0.5 credits from:
   HIST 4916 [0.5] Topic in Public History
   HIST 4920 [1.0] Seminar in Public History

B. Credits Not Included in the Major CGPA (9.0 credits)

9. 8.0 credits in electives not in HIST 8.0

10. 1.0 credit in free electives (may be HIST) 1.0

Total Credits 20.0

History
B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 7.0 credits in history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:
   a. 1.0 credit in HIST at the 1000-level or FYSM 1405
   b. 2.5 credits in HIST at the 2000-level
   c. 0.5 credit in HIST 2809
   d. 0.5 credit from
   e. 2.5 credits in HIST at the 3000-level

B. Credits Not Included in the Major CGPA (9.0 credits)

2. 6.0 credits not in HIST 6.0

3. 2.0 credit in free electives (may be HIST) 2.0

Total Credits 15.0

Minor in History (4.0 credits)

Open to all undergraduate degree students not in history programs or the B.G.In.S. Specialization or Stream in Global and Transnational History.

Requirements

1. 1.0 credit in HIST at the 1000 level or FYSM 1405 1.0
2. 1.0 credit in HIST at the 2000 level 1.0
3. 1.0 credit in HIST at the 3000 level 1.0
4. 1.0 credit in HIST from any combination of courses at the 2000, 3000, or 4000 level 1.0
5. The remaining requirements of the major discipline(s) and degree must be satisfied

Total Credits 4.0

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global and Transnational History
B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5
   GINS 1000 [0.5] Global History
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GINS 1010</td>
<td>International Law and Politics</td>
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<tr>
<td>GINS 3020</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
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<tr>
<td>GINS 4090</td>
<td>Honours Seminar in Global and International Studies</td>
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<tr>
<td>HIST 1707</td>
<td>World History</td>
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<td>HIST 2803</td>
<td>War and Society in Modern Europe, 1914-1950</td>
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<td>Early Modern Europe 1350-1650</td>
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<td>HIST 3906</td>
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<td>HIST 3907</td>
<td>Transnational Topic</td>
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<tr>
<td>HIST 3908</td>
<td>Thematic Topic</td>
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<tr>
<td>HIST 3913</td>
<td>Problems in Global and Transnational Histories</td>
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<tr>
<td>HIST 4700</td>
<td>Seminar in World History</td>
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<tr>
<td>HIST 4802</td>
<td>Seminar in International History</td>
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<tr>
<td>HIST 4805</td>
<td>Seminar on a Transnational or Thematic Topic</td>
</tr>
</tbody>
</table>

**B. Credits Not Included in the Major CGPA (8.0 credits)**

4. **8.0 credits in free electives**

5. **5.0 credits in Thematic Topic**

6. **5.0 credits in Advanced Core**

**Total Credits: 20.0**

**Stream in Global and Transnational History**

**B.G. In.S. (15.0 credits)**

A. **Credits Included in the Major CGPA (8.0 credits)**

1. **4.0 credits in: Core Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>GINS 1000</td>
<td>International Law and Politics</td>
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<td>Ethnography, Globalization and Culture</td>
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</tbody>
</table>

2. **4.0 credits from: the Stream**

a. **Foundations**

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<tbody>
<tr>
<td>HIST 1707</td>
<td>World History</td>
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</table>

b. **Regional History**

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c. **Themes in History**

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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>GINS 1300</td>
<td>International Experience Requirement Preparation</td>
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</tbody>
</table>

**C. Additional Requirements**

5. The International Experience requirement must be met.

6. The Language requirement must be met.

**Total Credits: 20.0**

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Arts programs. In addition to the requirements presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

### First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

### Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration or Specialization may be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

### Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESIA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

### Breadth Area 2: Humanities


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<table>
<thead>
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<td>HIST 2000</td>
<td>Medieval Europe</td>
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<td>HIST 2204</td>
<td>Early Modern Europe 1350-1650</td>
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<td>HIST 2206</td>
<td>Early Modern Europe 1600-1800</td>
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### Credits Not Included in the Major CGPA (7.0 credits):

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<thead>
<tr>
<th>Credits</th>
<th>Course</th>
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<tbody>
<tr>
<td>7.0</td>
<td>Exempts from the Breadth Requirement.</td>
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</tbody>
</table>

### Total Credits

15.0

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**Regulations**

**First Year Courses**

There is a limit on the number of history courses permitted in a B.A. degree in History. To avoid the course designation of “Extra to Degree (ETD)” students should not exceed the maximum of two 1000-level history courses (including FYMS courses designated with topics in history).

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs.
Breadth Area 1: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 2: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries. Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines. Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

B.G.In.S. Regulations
The regulations presented in this section apply to all Bachelor of Global and International Studies programs.

In addition to the program requirements and requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).
have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Change of Specialization or Stream Within the B.G.In.S Degree**
Students may change specialization or stream, or change from/to specialization or stream within the B.G.In.S. during the first or subsequent years of study if upon entry to the new specialization or stream they would be in good academic standing.

**Minors**
Students may apply to the Registrar's Office to be admitted to a minor during their first or subsequent years of study. Acceptance into a minor is subject to any specific requirements of the intended minor as published in the relevant Calendar entry. B.G.In.S. Honours students may take a maximum of one minor. B.G.In.S. students may take a maximum of two minors.

**Co-operative Education**
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

**Undergraduate Co-operative Education Policy**

**Admission Requirements**
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-op website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course).

Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

**Employment**
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a
Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours History: Co-op Admission and Continuation Requirements
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered in the B.A. Honours History;
2. Obtained and maintained an overall minimum CGPA of 8.0;
3. Have obtained second-year standing;
4. Be registered as a full-time student.

Students in B.A. Honours History must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: HIST 3999

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<tr>
<th>Work/Study Pattern:</th>
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<tbody>
<tr>
<td>Term</td>
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<td>Fall</td>
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<tr>
<td>Winter</td>
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<td>Summer</td>
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Legend
- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow
the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law (Business Law), Law (Law, Policy and Government), Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Global and International Studies (Honours)
- Bachelor of Global and International Studies

Admission Requirements

First Year

B.G.In.S. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais) and a FIF4U course for students applying to the Specialization in French and Francophone Studies. For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section English Language Requirements in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

B. G.In.S.
Access to the B.G.In.S. degree is limited to B.G.In.S. (Honours) students who apply to transfer.

Advanced Standing

B.G.In.S. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**History (HIST) Courses**

Please note: not all of the following courses are offered in a given year. Consult the public class schedule at Carleton Central for the most up-to-date offerings. For further details concerning courses, see the departmental website at carleton.ca/history.

4000-level History seminars have limited enrolment. Priority in enrolment is given to students in History Honours and Combined Honours programs.

Topics in 4000-level History seminars change from year to year. Current topics are posted on the department's website at carleton.ca/history.

**HIST 1001 [1.0 credit]**
**The Making of Europe**
A survey of the major events, ideas and movements that have shaped Europe from Antiquity to the 21st century. (Field a or b).
Lectures/groups three hours a week.

**HIST 1002 [1.0 credit]**
**Europe in the 20th Century**
An introduction to some of the major ideological, political, diplomatic, military, social, cultural and economic developments that have shaped contemporary Europe. (Field b).
Lectures/groups three hours a week.

**HIST 1010 [0.5 credit]**
**History of Northern Canada**
A historical introduction to northern Canada from pre-contact times to the present. Open only to students in the Nunavut Public Administration certificate program. (Field c).

**HIST 1301 [0.5 credit]**
**Conflict and Change in Early Canadian History**
This course explores how colonialism and conflict altered peoples, cultures, and places in what came to be called Canada from pre-contact to the first age of industrialization. Course covers subjects including imperialism, Indigenous-settler relations, slavery, migration, and government, providing context for contemporary issues. (Field c).
Precludes additional credit for HIST 1300 (no longer offered).
Lectures/groups three hours a week.

**HIST 1302 [0.5 credit]**
**Rethinking Modern Canadian History**
This course explores how major political, economic, legal, social, and cultural changes shaped modern-day Canada from the late 1800s to the present. It provides context for contemporary issues, including colonialism, redress, reconciliation, race relations, migration and urbanization, globalization, technology, and the environment. (Field c).
Precludes additional credit for HIST 1300 (no longer offered).
Lectures/groups three hours a week.

**HIST 1707 [1.0 credit]**
**World History**
The course will follow the global community from 1400 to the present exploring how global connections, movements and trends have shaped our world with a particular focus on the non-western world. (Field a or d).
Lectures/groups three hours a week.

**HIST 1900 [0.5 credit]**
**Topics in History**
A lecture course on a special topic, theme, or period. Topic varies from year to year. (Field will depend on topic).
Lectures/groups three hours a week.

**HIST 2000 [1.0 credit]**
**Medieval Europe**
The history of medieval Europe from the fourth to the fifteenth century. (Field a).
Precludes additional credit for HIST 2001 and HIST 2002 (no longer offered).
Lectures/groups three hours a week.

**HIST 2102 [0.5 credit]**
**Modern Thought and Culture: the Nineteenth Century**
A broad examination of Western thought and culture in the 19th century with a focus on Europe and emphasis on major thinkers and intellectual, ideological, and cultural movements. The course is intended for students from varied disciplinary backgrounds. (Field e).
Precludes additional credit for HIST 2101 and HIST 3100 (no longer offered).
Lectures/groups three hours a week.

**HIST 2103 [0.5 credit]**
**Modern Thought and Culture: the Twentieth Century**
A broad examination of Western thought and culture in the 20th century with a focus on Europe and emphasis on major thinkers and intellectual, ideological, and cultural movements. The course is intended for students from varied disciplinary backgrounds. (Field e).
Precludes additional credit for HIST 2101 and HIST 3100 (no longer offered).
Lectures/groups three hours a week.
HIST 2204 [0.5 credit]

Early Modern Europe 1350-1650
A survey of the major social, political and cultural developments in continental Europe from the 14th to the 17th centuries. (Field a).
Precludes additional credit for HIST 2203 (no longer offered).
Lectures/groups three hours a week.

HIST 2206 [0.5 credit]

Early Modern Europe 1600-1800
A survey of the major social, political and cultural developments in continental Europe during the 17th and 18th centuries. (Field a).
Precludes additional credit for HIST 2203 (no longer offered).
Lectures/groups three hours a week.

HIST 2207 [1.0 credit]

Nineteenth-Century Europe
A study of critical episodes in the history of continental Europe during the nineteenth century. Themes may include the struggles for democracy in France, modernizing reform in Russia, and national unification in Italy and Germany. (Field b).
Lectures/groups three hours a week.

HIST 2301 [0.5 credit]

Canadian Political History
An historical survey of political experiences in Canada. (Field c).
Precludes additional credit for HIST 2303 (no longer offered).
Lectures/groups three hours a week.

HIST 2304 [1.0 credit]

Social and Cultural History of Canada
A thematic exploration of how the spaces of home, work, and play have been historically produced, understood, and experienced in Canada. (Field c).
Lectures/groups three hours a week.

HIST 2308 [0.5 credit]

Colonial Latin America
From ancient civilizations to the era of Independence, this class follows conquest, colonization and development of national identity in the countries of Latin America. (Field d).
Precludes additional credit for HIST 2307 (no longer offered).
Lectures/groups three hours a week.

HIST 2309 [0.5 credit]

Modern Latin America
From the Wars of Independence until the end of the twentieth century, this class follows the emergence of Latin American nations, their economies, politics, culture and international relations. (Field d).
Precludes additional credit for HIST 2307 (no longer offered).
Lectures/groups three hours a week.

HIST 2311 [0.5 credit]

Environmental History of Canada
A survey of Canadian history considering nature, landscape and geography. Topics include the history of energy regimes and climate change; Indigenous ecological knowledge; colonization and settlement; resource extraction; commodity production; environmental policies and movements. (Field c or e).
Precludes additional credit for HIST 2310 (no longer offered).
Lectures/groups three hours a week.

HIST 2312 [0.5 credit]

History of the Indian Ocean World
The Indian Ocean is one of the oldest maritime highways in the history of humanity and also an epicentre of global economy in the pre-modern world. The aim of the course is to familiarize students with the non-Western antecedents of modern global history. (Field d).
Precludes additional credit for HIST 3716 (no longer offered).
Lectures/groups three hours a week.

HIST 2401 [0.5 credit]

History of the United States to 1865
A survey of United States politics and society from the American Revolution to the Civil War. (Field c).
Precludes additional credit for HIST 2400 (no longer offered).
Lectures/groups three hours a week.

HIST 2402 [0.5 credit]

History of the United States from 1865
A survey of United States politics and society from Reconstruction to the era of globalization. (Field c).
Precludes additional credit for HIST 2400 (no longer offered).
Lectures/groups three hours a week.

HIST 2501 [0.5 credit]

Early Modern Britain
A survey of significant political and social developments in Britain from the 15th to the 18th century. (Field a).
Precludes additional credit for HIST 2500 [1.0], no longer offered.
Lectures/groups three hours a week.

HIST 2502 [0.5 credit]

Modern Britain
A survey of significant political and social developments in Britain from the 18th to the late 20th century. (Field b).
Precludes additional credit for HIST 2500 [1.0], no longer offered.
Lectures/groups three hours a week.
HIST 2506 [0.5 credit]
Introduction to Women’s and Gender History
An introductory study of women’s and gender history. Themes may include sexuality, masculinity, women’s activism, consumer culture, religion, and reproductive rights. Geographic and temporal focus varies from year to year. (Field e).
Precludes additional credit for HIST 2504 (no longer offered).
Lectures/groups three hours a week.

HIST 2508 [0.5 credit]
France since 1889
A study of the major political, social, cultural, and economic developments in France since 1889. Topics may include the Dreyfus Affair, the First and Second World Wars, Republican political culture, colonialism and decolonization, youth culture and protest, and historical memory and commemoration. (Field b).
Precludes additional credit for HIST 2505 (no longer offered).
Lectures/groups three hours a week.

HIST 2510 [0.5 credit]
19th-Century Germany
The social, cultural, and political history and impact of German nationhood. Topics include the rise of social democracy and the feminist movements, alliance and empire building, scientific racism, sexology, and the emancipation and assimilation of German Jews into the body politic. (Field b).
Precludes additional credit for HIST 2509 (no longer offered).
Lectures/groups three hours a week.

HIST 2511 [0.5 credit]
20th-Century Germany
A survey of social, cultural, and political tensions and developments in Germany from World War One to the Fall of the Berlin Wall. (Field b).
Precludes additional credit for HIST 2509 (no longer offered).
Lectures/groups three hours a week.

HIST 2600 [1.0 credit]
History of Russia
A survey of Russian history from the rise of Kievan Rus in the 10th century to post-Soviet Russia in the 21st, with emphasis on political systems and the lives of ordinary people. (Field a or b).
Lectures/groups three hours a week.

HIST 2706 [0.5 credit]
Ancient and Pre-Colonial Africa
Ancient African cultures and civilizations, the trans-Saharan trade system, and the trans-Atlantic and Indian Ocean slave trades from 600 BCE to the 19th century. (Field d).
Precludes additional credit for HIST 2705 (no longer offered).
Lectures/groups three hours a week.

HIST 2707 [0.5 credit]
Modern Africa
The conquest and colonization of African polities by the European imperial powers from the late 19th century, the 20th century wars of decolonization, and the emergence of independent African nations, including their economies, politics, and culture. (Field d).
Precludes additional credit for HIST 2705 (no longer offered).
Lectures/groups three hours a week.

HIST 2710 [0.5 credit]
Introduction to Caribbean History
Introduction to the history of the Caribbean that examines the indigenous populations, the role of colonialism and slavery in the construction of plantation societies, the impact of emancipation, and the social, cultural, economic, and political dynamics of the Caribbean in the post-emancipation period. (Field d).
Precludes additional credit for HIST 2704 (no longer offered).
Lectures/groups three hours a week.

HIST 2802 [0.5 credit]
War and Society in Modern Europe, 1789-1914
A thematic study of the experience of war and its consequences. The European country or region to be studied, will vary from year to year. (Field b).
Precludes additional credit for HIST 2801 (no longer offered).
Lectures/groups three hours a week.

HIST 2803 [0.5 credit]
War and Society in Modern Europe, 1914-1950
A thematic study of the experience of war and its consequences. The European country or region to be studied, will vary from year to year. (Field b).
Precludes additional credit for HIST 2801 (no longer offered).
Lectures/groups three hours a week.

HIST 2806 [1.0 credit]
History of Japan
A survey of Japanese history from the legendary beginning of the country in 660 B.C. to the end of World War Two. (Field a or d).
Lectures/groups three hours a week.

HIST 2809 [0.5 credit]
The Historian’s Craft
Lectures and workshops on historical methods and materials. Topics will include the discovery, evaluation, use and analysis of documents in historical context, non-documentary evidence, statistics, and bibliographical tools. Includes: Experiential Learning Activity
Precludes additional credit for HIST 2808 [1.0 credit], no longer offered.
Prerequisite(s): open only to History majors with at least second-year standing.
Lectures/groups three hours a week.
HIST 2811 [0.5 credit]
Public History from Memory to Museums
Historical representation in the public arena and public engagement with the past, including archives, museums, films, novels, and video games. This course will involve online work, collaborative projects, and field trips. (Field e). Includes: Experiential Learning Activity Lectures three hours a week or online.

HIST 2812 [0.5 credit]
Special Subject in Public History
A lecture course on a special topic, theme, or period in public history. Topic varies from year to year. (Field e). Lectures three hours a week.

HIST 2902 [0.5 credit]
History of Ancient Greece I
The history of ancient Greece from the Bronze Age through the Archaic period. (Field a). Also listed as CLCV 2902. Precludes additional credit for CLCV 2900, HIST 2900 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lectures three hours a week.

HIST 2903 [0.5 credit]
History of Ancient Greece II
The history of ancient Greece from the classical period to Alexander. (Field a). Also listed as CLCV 2903. Precludes additional credit for CLCV 2900, HIST 2900 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lectures three hours a week.

HIST 2904 [0.5 credit]
History of Ancient Rome I
The history of ancient Rome from early Rome to the end of the Republic (Field a). Also listed as CLCV 2904. Precludes additional credit for CLCV 2901 and HIST 2901 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lectures three hours a week.

HIST 2905 [0.5 credit]
History of Ancient Rome II
The history of ancient Rome from the end of the Republic to the coming of Islam. (Field a). Also listed as CLCV 2905. Precludes additional credit for CLCV 2901, HIST 2901 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lectures three hours a week.

HIST 2910 [0.5 credit]
Special Subject in History
A lecture course on a special topic, theme, or period. Topic varies from year to year. (Field will depend on topic). Lectures/groups three hours a week.

HIST 2912 [0.5 credit]
Science and Technology in History
Major findings and discussions about the role of science and technology in the past. Topic and time period will vary. (Field a, b, or e). Precludes additional credit for HIST 2911 (no longer offered). Lectures/groups three hours a week.

HIST 2913 [0.5 credit]
History of Oil
Explores the history of oil from the ancient period to the present day. The course uses a transnational approach designed to introduce students to the interconnected histories of oil in countries across the world. (Field e). Includes: Experiential Learning Activity Lectures three hours a week.

HIST 3000 [0.5 credit]
Topics in Ancient History
A study of a selected topic in ancient history. (Field a). Also listed as CLCV 3000. Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history. Lectures three hours a week.

HIST 3001 [0.5 credit]
History at the Movies
Considering opportunities offered by historical feature film in the representation of the past, focusing on how historical themes and subjects have been treated in feature films, cinematic uses of the past, the role of film in shaping public memory and understanding the past. (Field e). Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history. Lectures three hours a week.

HIST 3005 [0.5 credit]
Medieval Aristocratic Life
A general examination of the life of European ruling elites from the ninth to the 13th century, with special reference to the Anglo-Norman and French experiences of noble power, conduct, and prestige. (Field a). Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history. Lectures three hours a week.
HIST 3006 [0.5 credit]

Medieval Religious Life
A general examination of European religious life from the fourth to the fourteenth centuries, with special reference to the cultural and intellectual worlds of medieval monks, nuns, and clerics. (Field a or e).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3007 [0.5 credit]

Medieval Intellectual Life
A general examination of medieval European intellectual life during the High and Late Middle Ages, with special reference to its setting in the cathedral school and university. (Field a or e).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3009 [0.5 credit]

Studies in Greek History
Study of a period or theme in Greek History. (Field a).
Also listed as CLCV 3201.
Prerequisite(s): CLCV 2902 and CLCV 2903 or HIST 2902 and HIST 2903 or permission of the unit. Permission of the unit is required to repeat this course.
Lectures three hours a week.

HIST 3010 [0.5 credit]

The Later Roman Empire
The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire. (Field a).
Also listed as CLCV 3010.
Precludes additional credit for HIST 3002 (no longer offered).
Prerequisite(s): a 2000-level Classical Civilization course.
Lecture three hours a week.

HIST 3011 [0.5 credit]

Studies in Roman History
Study of a period or theme in Roman History. (Field a).
Also listed as CLCV 3202.
Prerequisite(s): CLCV 2904 and CLCV 2905 or HIST 2904 and HIST 2905 or permission of the unit. Permission of the unit is required to repeat this course.
Lectures three hours a week.

HIST 3012 [0.5 credit]

Queer(ing) Archives
Examination of the archival turn in historical and theoretical perspective with an emphasis on sexuality, race, and gender as subjectivities in queer, trans, and colonial archives.
Also listed as SXST 3106.
Prerequisite(s): third-year standing.
Seminar three hours a week.

HIST 3015 [0.5 credit]

Renaissance Europe
The political and cultural history of Europe in the fourteenth, fifteenth and sixteenth centuries, with emphasis on the Italian Renaissance and its diffusion into England and France. (Field a).
Precludes additional credit for HIST 2105 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3016 [0.5 credit]

Social History of Sexuality
Sexuality in Western society, Middle Ages to the present. Themes include attitudes and behaviour; regulation of sexuality; gender; heterosexuality and homosexuality; prostitution; pornography; the politics of sex: stresses continuities and changes and the understanding of sexuality in contexts of place, class, gender, culture. (Field a).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3019 [0.5 credit]

Social History of Alcohol
Alcohol in Western society from Ancient times to the present. Production, trade, and consumption of alcohol; religious and social significance; class, gender, and health; drinking cultures; policies toward drunkenness, and alcoholism. Specific topics include comparative trends, temperance movements, and prohibition. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3105 [0.5 credit]

The Cultural History of Food
Food in its agrarian, economic and cultural context from late antiquity to the nineteenth century; production, distribution, and consumption; health, diet and manners; the religious significance of food; food in art; the rise of the restaurant; the birth of gastronomy. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3110 [0.5 credit]

History of Humanitarian Aid
History of humanitarian activities and agencies, both governmental and non-governmental, with particular attention to Canadian involvement. The first half is devoted to early humanitarian traditions, the second to specific agencies such as the Red Cross, Oxfam, Christian Aid, Save the Children and UNICEF. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3113 [0.5 credit]
Revolution and Society in France, 1789-1799
A survey of the French Revolution (1789-99) focusing on attempts to regenerate France and the French through political, economic and cultural reforms. Themes include nationalism, republicanism, violence, legal reform, property redistribution, education, population and family policy, gender, and religion. (Field b).
Precludes additional credit for HIST 3108 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3115 [0.5 credit]
Childhood and Youth in History
The role of childhood and youth in modern history. Topics may include children’s and young people’s relationship to work, education, play, sexuality, the welfare state, war, politics, delinquency, leisure, migrations, and popular culture. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3116 [0.5 credit]
History of Disability
History of disability including the representation and understanding of disability as it changes over time and as it is portrayed and experienced in changing cultural contexts. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history or in Disability Studies.
Lectures three hours a week.

HIST 3120 [0.5 credit]
History of the Body
The ways in which the human body has been viewed, interpreted, controlled, tended, healed, exercised, measured, pleasured, clothed, and reproduced to create representations of social, political, and cultural relationships. Regions and periods will vary. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3205 [0.5 credit]
Canadian Business History
The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business-government relations). (Field c).
Also listed as BUSI 4608.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3206 [0.5 credit]
Place and Politics in Canadian History
An exploration of selected topics in the history of one of Canada’s regions. Topic varies from year to year. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3209 [0.5 credit]
Canadian Urban History
Introduction to urban growth and development in Canada. The historical basis of the urban pattern and its influence in Canada and the internal structure and institutions of Canadian cities. Ottawa is used as a case study. (Field c).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3213 [0.5 credit]
The Enlightenment
The Enlightenment as a movement to establish a scientific approach to investigating human society. The focus is on Britain as the leading commercial society. Course work concentrates on close readings of primary texts. Representative figures include David Hume, Adam Smith, Mary Wollstonecraft. (Field e).
Precludes additional credit for HIST 3201 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3214 [0.5 credit]
The Enlightenment and Its Aftermath
An intellectual and cultural history of Enlightenment and post-Enlightenment study of human society. Course work concentrates on close reading of significant primary texts. Representative figures include Burke, Kant, Malthus, Mill, Tocqueville. (Field e).
Precludes additional credit for HIST 3201 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3215 [0.5 credit]
Ancient Greek Science
The history of Greek physical science from the Presocratics to Ptolemy. (Field a or e).
Also listed as CLCV 3215.
Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3216 [0.5 credit]
The Scientific Revolution
The history of astronomy and physics from Copernicus to
Newton. (Field b or e).
Precludes additional credit for HIST 2201 or HIST 3210
(no longer offered).
Prerequisite(s): a 2000-level history course or third-year
standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3217 [0.5 credit]
Empire and Globalization
Varieties of European imperialism from the early modern
period to the present. The role of imperialism and anti-
imperialism in the development of globalization and
European modernity. Comparison of various empires and
the transnational linkages between them. (Field b).
Prerequisite(s): a 2000-level history course or third-year
standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3220 [0.5 credit]
Canadian Economic History
A survey of Canadian economic history from the sixteenth
century to the present. (Field c or e).
Also listed as ECON 3220.
Precludes additional credit for ECON 2305 or HIST 2305
(no longer offered), ECON 3203 (no longer offered),
ECON 3202 or HIST 3203 (no longer offered), and ECON
3207 or HIST 3204 (no longer offered).
Prerequisite(s): ECON 1000 or FYSM 1003, or permission
of the Department.
Lectures three hours a week.

HIST 3230 [0.5 credit]
Selected Topics in Economic History
An examination of the economic development of North
America or Europe or other possible selected sets of
countries. Countries examined vary from year to year.
(Field e).
Also listed as ECON 3230.
Precludes additional credit for ECON 3005 (no longer
offered).
Prerequisite(s): ECON 1001 and ECON 1002, or
ECON 1000 or FYSM 1003, or permission of the
Department.
Lectures three hours a week.

HIST 3301 [0.5 credit]
Quebec Since 1800
A social, economic, political, cultural and intellectual
history of Quebec with emphasis on the development of
Quebec nationalism. (Field c).
Prerequisite(s): a 2000-level history course or third-year
standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3304 [0.5 credit]
Canada-United States Relations
An examination of diplomatic, economic, cultural and
military relations, with particular attention to the twentieth
century. (Field c).
Prerequisite(s): a 2000-level history course or third-year
standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3305 [0.5 credit]
Crime and State in History
The history of the relationship between the criminal law
system and society. Changing issues in the criminal
law and the nature of institutional responses, covering
medieval to early nineteenth-century England and
nineteenth to early twentieth-century Canada. (Field e).
Also listed as LAWS 3305.
Prerequisite(s): a 2000-level history course or third-year
standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3306 [0.5 credit]
Canada's International Policies
The development of Canadian attitudes and policies
toward international affairs, with emphasis on the 20 th
century. (Field c).
Prerequisite(s): a 2000-level history course or third-year
standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3310 [0.5 credit]
Animals in History
A historical survey of relations between humans and other
animals. Topics may include history of domestication;
hunting; display of animals in zoos, museums and
wildlife films; biotechnology; animal welfare movements;
companion species; animals as symbols; question of
animal agency. (Field c or e).
Prerequisite(s): a 2000-level history course or third-year
standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3406 [0.5 credit]
African-American Women
An examination of aspects of the social, cultural, and
political history of African-American women since the
eighteenth century. (Field c or e).
Prerequisite(s): a 2000-level history course or third-year
standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3410 [0.5 credit]
Popular Culture in the U.S.
The development of popular culture in the United States.
Focusing on a selected theme or time period, the course
will examine how popular culture both shaped and
reflected broader historical and social developments.
Topics may include music, theatre, public entertainments,
movies, and television. (Field c).
Prerequisite(s): a 2000-level history course, or third-year
standing and 1.0 credit in history.
Lectures three hours a week or online.
HIST 3412 [0.5 credit]
Ideas, Culture, and Society in U.S. History
The intellectual, social, and cultural production of the United States, focusing on, among other things, a series of creative tensions: tradition versus modernity; rural versus urban; white versus black; masculine versus feminine; homogenous versus cosmopolitan. (Field c).
Precludes additional credit for HIST 3904, Topics in U.S. History (offered in the fall terms of 2009, 2011 and 2012).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3413 [0.5 credit]
The United States and Its Borderlands
A history of the United States, focusing on the interactions along and across its borders with Mexico, Canada, and the Pacific Rim. This course examines the contests that emerged over colonization, migration, and American state-making. (Field c).
Precludes additional credit for HIST 3904 (offered in winter terms of 2017 and 2014, and fall term of 2014).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3414 [0.5 credit]
The United States in the World
The history of the US in a global context. Time period will vary, topics could include world revolutions, imperialism and decolonization, immigration, transnational flows of ideas and people, war, peace, urbanization, capitalism, international law, and the environment. (Field c).
Precludes additional credit for HIST 3400 and HIST 3405.
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Lectures three hours a week or online.

HIST 3500 [0.5 credit]
Migration and Diaspora in Canada
A study of migration and settlement in Canada from the 17th century to the present. (Field c).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3505 [0.5 credit]
Women in Canada
Selected issues in the history of women in Canada. Themes include women and war, aboriginal women’s history, sexuality, the women's movement, immigration, and motherhood. Attention will be paid to the social construction of gender and the intersections of gender with class, ethnicity, race. (Field c).
Precludes additional credit for HIST 3504 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3704 [0.5 credit]
Aztecs
An examination of the Aztec social system, culture, religion, and philosophy both before and after the Spanish conquest. (Field a or d).
Prerequisite(s): A 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3708 [0.5 credit]
Reformation Europe
A history of the Protestant and Catholic Reformations of the sixteenth century, with special emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era. (Field a).
Also listed as RELI 3220.
Prerequisite(s): a 2000-level History course or third-year standing and 1.0 credit in History.
Lectures three hours a week.

HIST 3710 [0.5 credit]
Themes in Caribbean History
Key themes in the making of the Caribbean. Topics may include slavery and emancipation, Indian and Chinese migration, colonialism, the independence movement, and race relations. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3712 [0.5 credit]
Mexico: Aztecs to Narcos
An examination of the social and cultural history of Mexico from indigenous cultures to the problems of the 20th century. Themes include the continuities of indigenous structures, national identity, wars and political violence, and gender. (Field d).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3713 [0.5 credit]
Gender and Sexuality in Latin America
An exploration of gender and sexualities in Latin America from the pre-conquest period to the end of the twentieth century. (Field d or e).
Precludes additional credit for HIST 3705 and HIST 3707 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3714 [0.5 credit]
Holocaust Encounters
An examination of the experiences of different Jewish communities before, during, and after the Holocaust. Issues to be discussed include antisemitism, relations with non-Jewish neighbors, perpetrator motivation, local collaboration, resistance, postwar trials, and memory. (Field b).
Also listed as RELI 3140.
Prerequisite(s): a 2000-level History course or third-year standing and 1.0 credit in History.
Lectures three hours a week.

HIST 3715 [0.5 credit]
Themes in South Asian History
Key themes in South Asian history. Topics may include the Mughal empire, the British colonial era, the creation and development of states in India, Pakistan, Bangladesh, and Sri Lanka, and various 20th century historical phenomenon. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3717 [0.5 credit]
Gender and Sexuality in Africa
An exploration of gender and sexualities in Africa from the beginning of colonial rule until the beginning of the 21st century. (Field d or e).
Precludes additional credit for HIST 3711 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3719 [0.5 credit]
South African War, 1899-1902
Examines causes, major events and consequences of the war. Themes include: the war as part of the Scramble for Africa, emergence of settler nationalism, British "scorched earth policy", establishment of concentration camps, importance of gender, African involvement, international responses, and long-term effects. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3800 [0.5 credit]
International History 1914-41
A survey of international history from the First World War to the outbreak of the Second World War, focusing on peacemaking, inter-war diplomacy, anti-imperialism, global capitalism, migration, labour, and the origins of the Second World War. (Field b).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3801 [0.5 credit]
International History 1941-90
A survey of international history from the Second World War to the end of the Cold War that examines the conflict over the reconstruction of the postwar world, including decolonization, emergence of the European Union, and other dimensions of global order and disorder. (Field b).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3805 [0.5 credit]
Twentieth-Century China
A political history of China from the 1911 Revolution to the present. Emphasis on the development of Chinese communism and the People's Republic since 1949. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3806 [0.5 credit]
Japan Since 1945
A political, intellectual and economic history of Japan in the twentieth century, concentrating on the period since the end of the Pacific War. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3807 [0.5 credit]
Practicum in History
An historical research project in a museum or public institution in the Ottawa area conducted under the supervision of the external institution and the History Department. Work includes reading, reports, and meetings. Students should be prepared to devote one day a week to the project.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in a History program, a CGPA of 9.00 or better in history courses, and permission of the Department.

HIST 3809 [0.5 credit]
Historical Representations
An examination of how historical narratives have been produced in relation to sites of public memory. The public presentation of history through a wide range of themes, which may include museum exhibits, commemorations and popular culture. (Field e).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3810 [0.5 credit]
Historical Theory
An examination of a wide range of theoretical approaches to history, and a critical reflection on history as a discipline.
Prerequisite(s): HIST 2809 or permission of the Department.
Lectures two hours a week and one hour discussion group.

HIST 3811 [0.5 credit]
History of Historical Thought
An examination of questions concerning the nature and value of historical inquiry and the meaning of the course of history. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3812 [0.5 credit]
Digital History
The digital representation of history, exploring the approaches, issues, and methods of working in this environment. Topics may include gaming, virtual environments, digital research tools, public digital history. (Field e).
Includes: Experiential Learning Activity
Also listed as DIGH 3812.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3813 [0.5 credit]
Problems in Global and Transnational Histories
Historical encounters across geographical regions and ways in which historians studied them. Categories of “national,” “international,” “transnational,” “world,” and “global” history will be evaluated. Themes include: imperialism, postcolonialism, the environment, migration, trade, religion, the body, war, culture, disease. (Field d or e).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history including at least 0.5 credit in Field d courses (Asia, Africa, the Caribbean, and Latin America).
Lectures three hours a week.
HIST 3814 [0.5 credit]
Crafting Digital History
This course applies the creative use of information and media/computing technologies to address the digital cultural heritage issues of public historians, archaeologists, and anthropologists. Topics may include webscraping, data mining, designing and implementing research databases, and visual storytelling of those results. (Field e).
Includes: Experiential Learning Activity
Also listed as DIGH 3814.
Precludes additional credit for HIST 3907 Section "B" offered in winter 2015 and HIST 3907 Section "O" offered in winter 2016.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week or online.

HIST 3815 [0.5 credit]
Group Practicum
A class-based group historical research project done in collaboration with an external institution under the supervision of the institution and the Department. Work includes readings, reports, and meetings. Students should be prepared to devote one full day per week to the project. (Field e).
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in a History program and permission of the Department.

HIST 3820 [0.5 credit]
Explorations in Historical Theory
Taking a specific historical topic as its focus, this course examines how historians have applied a wide range of theoretical approaches in order to understand and interpret that topic's historical significance. Topics will vary.
Prerequisite(s): HIST 2809, or permission of the unit.
Lectures two hours a week and one hour discussion group.

HIST 3902 [0.5 credit]
Topics in European History
A lecture course on a special topic in European history. Topic varies from year to year. (Field will depend on topic.).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3903 [0.5 credit]
Topics in Canadian History
A lecture course on a special topic in Canadian history. Topic varies from year to year. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3904 [0.5 credit]
Topics in U.S. History
A lecture course on a special topic in United States history.
Topic varies from year to year. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3905 [0.5 credit]
Topics in International History
A lecture course on a special topic in international political or economic history. Topic varies from year to year. (Field b).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3906 [0.5 credit]
Topics in World History
A lecture course on a special topic in African, Asian, Caribbean, or Latin American history. Topic varies from year to year. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3907 [0.5 credit]
Transnational Topic
A lecture course on a special topic that takes a transnational approach to history. Course content will vary from year to year. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3908 [0.5 credit]
Thematic Topic
A lecture course on a special topic that takes a thematic approach to history. Course content will vary from year to year. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3909 [0.5 credit]
Topic in Public History
A lecture course on a special topic, theme, or period in public history. Topic varies from year to year. (Field e).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
HIST 4006 [1.0 credit]
Seminar in Medieval History
An examination of a selected problem in the history of medieval Europe.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4007 [0.5 credit]
Medieval History
Selected topic in Medieval History. The topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4100 [1.0 credit]
Seminar in Early Modern European History
A study of a selected problem in the history of Europe during the early modern period.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4101 [0.5 credit]
Early Modern European History
Selected topic in the history of Europe during the early modern period. The topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4200 [1.0 credit]
Seminar in European History
Examination of a selected problem or period in the history of Continental Europe.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4201 [0.5 credit]
Modern European History
Selected topic in the history of Europe. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4210 [0.5 credit]
Topics in Ancient History
Intended for Honours students in History and Classics who should normally be in their third- or fourth-year. Also listed as CLCV 4210.
Precludes additional credit for CLCV 4209, HIST 4209 (no longer offered).
Prerequisite(s): CLCV 2902 (HIST 2902) and CLCV 2903 (HIST 2903) or CLCV 2904 (HIST 2904) and CLCV 2905 (HIST 2905) or CLCV 3201 (HIST 3009) or CLCV 3202 (HIST 3101) or permission of the Department.
Seminar three hours a week.

HIST 4302 [1.0 credit]
Canada: Ideas & Culture
A seminar on ideas, culture, and society in Canada.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4303 [0.5 credit]
Society and Culture in Canada
A 0.5 credit seminar course that examines a selected topic on ideas, culture, and society in Canada. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History, or permission of the Department.
Seminar three hours a week.

HIST 4304 [1.0 credit]
Canada: Politics & Society
A seminar on politics and society in Canada.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4305 [0.5 credit]
Political History in Canada
A 0.5 credit seminar course that examines a selected topic on politics and society in Canada. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4400 [1.0 credit]
Seminar in U.S. History
An examination of a selected problem or period in the history of the United States.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.
HIST 4401 [0.5 credit]  
**United States History**  
A 0.5 credit seminar course that examines a selected topic in the history of the United States. The particular topic will be specified each year it is offered.  
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.  
Seminar three hours a week.

HIST 4500 [1.0 credit]  
**Seminar in British History**  
An explanation of a selected problem or period in the history of Great Britain.  
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.  
Seminar three hours a week.

HIST 4501 [0.5 credit]  
**British History**  
An explanation of a selected problem or period in the history of Great Britain. Includes: Experiential Learning Activity  
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.  
Seminar three hours a week.

HIST 4505 [1.0 credit]  
**Seminar in Women's and Gender History**  
A seminar on the history of women and gender. The particular approach, themes, and historical period will be specified each year.  
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.  
Seminar three hours a week.

HIST 4506 [0.5 credit]  
**Gender, Sexuality and Women's History**  
A 0.5 credit seminar course that examines a selected topic on the history of women and gender. The particular topic will be specified each year it is offered.  
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.  
Seminar three hours a week.

HIST 4600 [1.0 credit]  
**Seminar in Russian History**  
An examination of a selected problem or period in the history of Imperial or post-Imperial Russia.  
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.  
Seminar three hours a week.

HIST 4604 [0.5 credit]  
**Central Europe, Past and Present**  
Evolution and current status of Central Europe from periods of foreign control in the late nineteenth and twentieth centuries to independent statehood. Particular emphasis will be placed on national accommodations and conflicts.  
Also listed as EURR 4204.  
Prerequisite(s): HIST 3810, fourth-year standing in Honours History or permission of the Department.  
Seminar three hours a week.

HIST 4605 [0.5 credit]  
**The Balkans in Transition – 1918 to 1989**  
The seminar uses the concept of transition to understand the Balkan encounter with modernity and Europe. Key periods to be examined include the interwar era and the period of communist rule, with an emphasis on political, social and economic themes.  
Also listed as EURR 4101.  
Prerequisite(s): fourth-year standing and one of PSCI 3704, PSCI 3208, PSCI 3209, HIST 2600; or permission of the Department.  
Seminar three hours a week.

HIST 4606 [0.5 credit]  
**Contemporary Europe: From Postwar to the European Union**  
History of contemporary Europe from 1945 to present covering both eastern and western halves of the continent and including social, cultural, political, and economic dimensions. Includes: Experiential Learning Activity  
Also listed as EURR 4303.  
Prerequisite(s): HIST 3810, fourth-year standing in Honours History or permission of the Department.  
Seminars three hours a week.

HIST 4607 [0.5 credit]  
**Imperial Russia and the Russian Revolution**  
Examination of the expansion and downfall of tsarist Russia from the eighteenth century to the revolutionary era and the establishment of Bolshevik rule. Topics include the relationship between the monarchy and subject peoples, social and economic change, and daily life. Includes: Experiential Learning Activity  
Also listed as EURR 4305.  
Also offered at the graduate level, with different requirements, as HIST 5607, for which additional credit is precluded.  
Seminar three hours a week.
HIST 4608 [0.5 credit]
The Soviet Union
Examination of the rise of the Soviet Union to a global power and subsequent tensions that promoted its collapse. The course will analyze Stalinism, the Second World War, the Thaw, and Brezhnev and Gorbachev eras through the lens of the USSR's citizens.
Includes: Experiential Learning Activity
Also listed as EURR 4306.
Also offered at the graduate level, with different requirements, as HIST 5608, for which additional credit is precluded.
Seminar three hours a week.

HIST 4700 [1.0 credit]
Seminar in World History
An examination of a selected problem or period in the history of Asia, Africa, the Caribbean or Latin America.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4701 [0.5 credit]
African History
A 0.5 credit seminar course that examines a selected topic in the history of Africa. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4702 [0.5 credit]
South Asian History
A 0.5 credit seminar course that examines a selected topic in the history of South Asia. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4703 [0.5 credit]
The Global South
A 0.5 credit seminar course that examines a selected topic in the history of the Global South. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4704 [0.5 credit]
Caribbean and Latin American History
A 0.5 credit seminar course that examines a selected topic in Caribbean and Latin American history. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4705 [0.5 credit]
Asian History
A 0.5 credit seminar course that examines a selected topic in the history of Asia. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4802 [1.0 credit]
Seminar in International History
An examination of a selected problem or period in the history of international relations.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4805 [1.0 credit]
Seminar on a Transnational or Thematic Topic
A seminar on a transnational or thematic topic. The particular topic will be specified each year.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4806 [0.5 credit]
Global, Transnational, or Thematic History
Selected topic in global and transnational history or on a thematic topic in history. The topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4910 [1.0 credit]
Honours Research Project
The project will be a substantial piece of original research conducted under the supervision of a faculty member in History. The medium of presentation will be agreed upon between student and supervisor, and may include a research paper, a documentary film, or a web-based project.
Includes: Experiential Learning Activity
Precludes additional credit for HIST 4908, HIST 4909 (no longer offered).
Prerequisite(s): fourth-year standing in History Honours program, a minimum GPA of 9.0 (B+) in the History major, and permission of the department, or in exceptional circumstances with permission of the department only.

HIST 4915 [0.5 credit]
Topics in History
Intended for Honours students in History. Topics will vary from year to year.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.
**Program Requirements**

**History and Theory of Architecture**

This section presents the requirements for programs in:

- History and Theory of Architecture B.A. Honours
- History and Theory of Architecture B.A. Combined Honours
- History and Theory of Architecture B.A.
- Minor in History and Theory of Architecture
- Post-Baccalaureate Diploma in History and Theory of Architecture

### Program Requirements

#### History and Theory of Architecture

**B.A. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (10.0 credits)**

1.  **3.0 credits in:**  
   - ARTH 1101 [0.5] Art and Society: Renaissance to the Present
   - ARTH 1200 [0.5] History and Theory of Architecture: Prehistory to 1500
   - ARTH 1201 [0.5] History and Theory of Architecture: 1500 to Present
   - ARTH 2710 [0.5] Experiencing Architecture
   - ARTH 3100 [0.5] History and Methods of Art and Architectural History
   - ARTH 3107 [0.5] History and Methods of Architectural History

2.  **2.0 credits from:**  
   - ARTH 2102 [0.5] Greek Art and Archaeology
   - ARTH 2105 [0.5] Roman Art and Archaeology
   - ARTH 2107 [0.5] Islamic Architecture and Art
   - ARTH 2202 [0.5] Medieval Architecture and Art
   - ARTH 2310 [0.5] Architecture of the Early Modern World (1400-1750)
   - ARTH 2510 [0.5] Architecture of the 18th and 19th Centuries
   - ARTH 2610 [0.5] Twentieth-Century Architecture

3.  **1.0 credit from:**  
   - ARTH 3002/ARCH 250 [0.5] Canadian Architecture
   - ARTH 3003 [0.5] Architecture and Representation
   - ARTH 3005 [0.5] American Architecture
   - ARTH 3701 [0.5] Art and Architecture on Site
   - ARTH 3710 [0.5] Architecture and Empire

4.  **1.0 credits in ARTH or ARCH at the 2000-level or higher**

5.  **0.5 credit from:**  
   - ARTH 4107 [0.5] Topics in Islamic Architecture and Art
   - ARTH 4202 [0.5] Topics in Medieval Architecture and Art
   - ARTH 4610 [0.5] Topics in Modern Architecture or Design
   - ARTH 4800 [0.5] Topics in Architectural History

6.  **1.5 credits in ARTH or ARCH at the 4000-level**

7.  **1.0 credit from:**  
   - ARCH 4200 [0.5] Architectural Conservation Philosophy and Ethics
   - ARCN 4100 [0.5] Historic Site Recording and Assessment
   - CDNS 2400 [0.5] Heritage Conservation in Canada
   - CDNS 4400 [0.5] Cultural Landscape and Cultural Identity in Canada
   - GEOG 1020 [0.5] People, Places and Environments
   - GEOG 2300 [0.5] Space, Place and Culture
   - GEOG 3021 [0.5] Geographies of Culture and Identity
   - HIST at the 1000-level or higher
   - IDES 1000 [0.5] Theory and History of Design

**B. Credits Not Included in the Major CGPA (10.0 credits)**

8.  **8.0 credits in electives not in ARTH or Architecture**

9.  **2.0 credits in free electives.**

**Total Credits** 20.0

**Notes for programs in History and Theory of Architecture:**

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

#### History and Theory of Architecture

**B.A. Combined Honours (20.0 credits)**

**A. Credits included in the major CGPA (6.5 Credits)**

1.  **2.5 credits in:**  
   - ARTH 1200 [0.5] History and Theory of Architecture: Prehistory to 1500
   - ARTH 1201 [0.5] History and Theory of Architecture: 1500 to Present
   - ARTH 2710 [0.5] Experiencing Architecture
   - ARTH 3100 [0.5] History and Methods of Art and Architectural History
   - ARTH 3107 [0.5] History and Methods of Architectural History

2.  **1.5 credits from:**  
   - ARTH 2102 [0.5] Greek Art and Archaeology
   - ARTH 2105 [0.5] Roman Art and Archaeology
   - ARTH 2107 [0.5] Islamic Architecture and Art
   - ARTH 2202 [0.5] Medieval Architecture and Art
   - ARTH 2610 [0.5] Twentieth-Century Architecture

3.  **1.0 credit from:**  
   - ARTH 3002/ARCH 250 [0.5] Canadian Architecture
   - ARTH 3003 [0.5] Architecture and Representation
   - ARTH 3005 [0.5] American Architecture
   - ARTH 3701 [0.5] Art and Architecture on Site
   - ARTH 3710 [0.5] Architecture and Empire

4.  **1.0 credits in ARTH or ARCH at the 2000-level or higher**

5.  **0.5 credit from:**  
   - ARTH 4107 [0.5] Topics in Islamic Architecture and Art
   - ARTH 4202 [0.5] Topics in Medieval Architecture and Art
   - ARTH 4610 [0.5] Topics in Modern Architecture or Design
   - ARTH 4800 [0.5] Topics in Architectural History

6.  **1.5 credits in ARTH or ARCH at the 4000-level**

7.  **1.0 credit from:**  
   - ARCH 4200 [0.5] Architectural Conservation Philosophy and Ethics
   - ARCN 4100 [0.5] Historic Site Recording and Assessment
   - CDNS 2400 [0.5] Heritage Conservation in Canada
   - CDNS 4400 [0.5] Cultural Landscape and Cultural Identity in Canada
   - GEOG 1020 [0.5] People, Places and Environments
   - GEOG 2300 [0.5] Space, Place and Culture
   - GEOG 3021 [0.5] Geographies of Culture and Identity
   - HIST at the 1000-level or higher
   - IDES 1000 [0.5] Theory and History of Design

**Notes for programs in History and Theory of Architecture:**

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.
3. **1.0 credit from:**
- **ARTH 3002/ARCH 4002 [0.5]** Architecture
- **ARTH 3003 [0.5]** Architecture and Representation
- **ARTH 3005 [0.5]** American Architecture
- **ARTH 3701 [0.5]** Art and Architecture on Site
- **ARTH 3710 [0.5]** Architecture and Empire
- **ARTH 3810 [0.5]** A Closer Look at the Designed Environment

4. **0.5 credit from:**
- **ARTH 4107 [0.5]** Topics in Islamic Architecture and Art
- **ARTH 4202 [0.5]** Topics in Medieval Architecture and Art
- **ARTH 4610 [0.5]** Topics in Modern Architecture or Design
- **ARTH 4800 [0.5]** Topics in Architectural History

5. **1.0 credits in ARTH or ARCH or ARCN at the 4000-level**

6. **Additional Requirements (13.5)**
- **6. 6.0 credits in electives not in ARTH or Architecture**
- **7. 2.0 credit in free electives.**

**Total Credits:** 20.0

### Notes for programs in History and Theory of Architecture:
- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

### Minor in History and Theory of Architecture (4.0 credits)
Open to all undergraduate degree students not in History and Theory of Architecture programs.

**Requirements**

1. **1.0 credit in:**
- **ARTH 1200 [0.5]** History and Theory of Architecture: Prehistory to 1500
- **ARTH 1201 [0.5]** History and Theory of Architecture: 1500 to Present

2. **1.5 credits from:**
- **ARTH 2102 [0.5]** Greek Art and Archaeology
- **ARTH 2105 [0.5]** Roman Art and Archaeology
- **ARTH 2107 [0.5]** Islamic Architecture and Art
- **ARTH 2202 [0.5]** Medieval Architecture and Art
- **ARTH 2310 [0.5]** Architecture of the Early Modern World [1400-1750]
- **ARTH 2510 [0.5]** Architecture of the 18th and 19th Centuries
- **ARTH 2610 [0.5]** Twentieth-Century Architecture

3. **1.5 credits from:**
- **ARTH 3002/ARCH 4002 [0.5]** Architecture
- **ARTH 3003 [0.5]** Architecture and Representation
- **ARTH 3005 [0.5]** American Architecture
- **ARTH 3107 [0.5]** History and Methods of Architectural History
- **ARTH 3701 [0.5]** Art and Architecture on Site
- **ARTH 3710 [0.5]** Architecture and Empire
- **ARTH 3810 [0.5]** A Closer Look at the Designed Environment
- **ARTH 4107 [0.5]** Topics in Islamic Architecture and Art
- **ARTH 4202 [0.5]** Topics in Medieval Architecture and Art
- **ARTH 4610 [0.5]** Topics in Modern Architecture or Design
- **ARTH 4800 [0.5]** Topics in Architectural History

**Total Credits:** 15.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Post-Baccalaureate Diploma in History and Theory of Architecture (4.0 credits)

Admission to this program requires the permission of the History and Theory of Architecture program. Normally, students would be required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Requirements:
1. 1.0 credit in:
   ARTH 3100 [0.5] History and Methods of Art and
   Architectural History
   ARTH 3107 [0.5] History and Methods of
   Architectural History
2. 2.0 credit in ARTH at the 2000-level or above
   (excluding ARTH 2710)
3. 1.0 credit in ARTH at the 4000-level

Total Credits 4.0

With the approval of the History and Theory of Architecture undergraduate supervisor, 0.5 credit may be taken outside the department.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

• African Studies
• Criminology and Criminal Justice
• Environmental Studies
• Human Rights
• Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design


Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IIRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public
Students in a B.A. program must present:

- specific details consult the departmental program entries.
- The general requirements are listed below. For more knowledge of the history and culture of French Canada.

**Declared and Undeclared Students**

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

**Change of Program Within the B.A. Degree**

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Regulations**

**Post-Baccalaureate Diploma**

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

**Definition**

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

**Program Requirements**

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

**English as a Second Language Requirement**

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

**Continuation**

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.
Graduation
- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Art and Architectural History (ARTH) Courses

ARTH 1100 [0.5 credit]
Art and Society: Prehistory to the Renaissance
A survey of art, architecture and artifacts from prehistory to the Renaissance. Ways of understanding visual culture through this span of history.
Precludes additional credit for ARTH 1000.
Lectures two hours a week, tutorial one hour a week.

ARTH 1101 [0.5 credit]
Art and Society: Renaissance to the Present
A survey of art, architecture and related visual forms in their expanding contexts from the Renaissance to the present. Ways of understanding visual culture through this span of history.
Precludes additional credit for ARTH 1000.
Lectures two hours a week, tutorial one hour a week.

ARTH 1105 [0.5 credit]
Art as Visual Communication
A variety of visual material is organized topically to examine the elements of art (line, shape, value, colour, texture, space), the principles of pictorial organization, the materials and techniques of art, and recurrent tendencies in artistic styles and outlooks.
Lectures three hours a week.

ARTH 1200 [0.5 credit]
History and Theory of Architecture: Prehistory to 1500
An introduction to the history of architecture from prehistory to ca. 1500, considering technological, formal, intellectual and social developments that informed the built environment through a range of building types.
Lectures two hours a week, tutorial one hour a week.

ARTH 1201 [0.5 credit]
History and Theory of Architecture: 1500 to Present
An introduction to the history of architecture from ca. 1500 to the present, considering technological, formal, intellectual, and social developments that informed the built environment through a range of building types.
Precludes additional credit for ARTH 2608 (no longer offered).
Lectures two hours a week, tutorial one hour a week.
ARTH 2002 [0.5 credit]
Canadian Historical Art
A survey of historical Canadian art, from the period of European settlement to the early twentieth century, examining craft and fine art, amateur and professional artists, art institutions, gender, nationalism, regionalism and ethnicity. Students will be exposed to works in the National Capital region.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2003 [0.5 credit]
Canadian Twentieth-Century and Contemporary Art
A survey of twentieth-century and contemporary Canadian art in a variety of media within social, political and cultural contexts. Regionalism, multiculturalism, nationalism, gender, race and identity will be considered in relation to local and national collections in Ottawa.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2005 [0.5 credit]
Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
Introduction to the visual arts of Indigenous peoples of the eastern and central regions of North America. A post-colonial perspective will be used to consider selected examples of creative production from time immemorial to the present.
Prerequisite(s): second-year standing or permission of the discipline.
Lectures three hours a week.

ARTH 2006 [0.5 credit]
Arts of the First Peoples: The Southwest, the West Coast and the Arctic
Introduction to the visual arts of Indigenous peoples of the western and northern regions of North America. A post-colonial perspective will be used to consider selected examples of visual materials from time immemorial to the present.
Prerequisite(s): second-year standing or permission of the discipline.
Lectures three hours a week.

ARTH 2007 [0.5 credit]
Asian Art
Surveys Asian art from second-century China to post-war Japan. Representational strategies of court artists and artists from the capital are compared with artists on the periphery. Articulation of power in tombs, palaces and war propaganda is examined, as is the individual and the eccentric.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2008 [0.5 credit]
Inuit Art
Survey of visual art produced by Canadian Inuit from the circumpolar area.
Precludes additional credit for ARTH 3104.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2009 [0.5 credit]
Art Live: Art History Workshop
Examination of techniques, materials and institutions of art history; lectures and workshops on art historical research and writing, the materials of art, professional skills; site visits to art institutions.
Includes: Experiential Learning Activity
Prerequisite(s): ARTH 1100 and ARTH 1101, or permission of the discipline. Restricted to students enrolled in the Art History B.A. or B.A. Honours.
Lecture three hours a week.

ARTH 2102 [0.5 credit]
Greek Art and Archaeology
The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts are studied.
Also listed as CLCV 2303.
Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).
Prerequisite(s): second-year standing or permission of the Department.
Lecture three hours a week.

ARTH 2105 [0.5 credit]
Roman Art and Archaeology
The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied.
Also listed as CLCV 2304.
Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).
Prerequisite(s): second-year standing or permission of the Department.
Lecture three hours a week.

ARTH 2106 [0.5 credit]
Chinese Art and Visual Culture
A survey of Chinese art from the pre-modern era to reinventions of traditions in modern and contemporary art. Artworks in various media (ink painting, calligraphy, Buddhist sculpture, ceramics, lacquer and garden architecture) will be studied in their historical, cultural and socio-political contexts.
Prerequisite(s): second-year standing or permission of the Department.
Lecture three hours a week.
ARTh 2107 [0.5 credit]
Islamic Architecture and Art
Survey of artistic movements in Islamic art and architecture in the Mediterranean, the Near East, and Central and South Asia, from the seventh century to ca. 1450. Commonalities and differences between major dynastic visual cultures will be explored.
Prerequisite(s): second-year standing or permission of the Discipline.
Lecture three hours a week.

ARTh 2108 [0.5 credit]
Art Worlds
Survey of an area of global art history. Topics may vary from year to year, and will be posted on the School for Studies in Art and Culture website.
Prerequisite(s): second-year standing or permission of the Department.
Lecture three hours a week.

ARTh 2202 [0.5 credit]
Medieval Architecture and Art
A survey of architecture and art in Europe from ca. 313-1500 C.E. Sacred, secular, and domestic works will be discussed with reference to cultural meaning, social function, structure, and form.
Precludes additional credit for ARTH 2200 and ARTH 2201.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 2300 [0.5 credit]
Italian Renaissance Art
An examination of major works of art and architecture, issues and themes in the Italian Renaissance; emphasis on the fifteenth and sixteenth centuries, with a look at roots in the fourteenth.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 2310 [0.5 credit]
Architecture of the Early Modern World [1400-1750]
An examination of architecture from the late medieval period to the 18th century with particular attention paid to architecture and design cultures within the European and Islamic worlds and their cross-cultural interactions.
Precludes additional credit for ARTH 3305 (no longer offered).
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 2404 [0.5 credit]
Art of the 17th and 18th Centuries
Tracing developments in 17th- and 18th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and society.
Precludes additional credit for ARTH 2403 (no longer offered), ARTH 2405 (no longer offered) and ARTH 2406 (no longer offered).
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 2502 [0.5 credit]
Art of the 19th Century
Tracing developments in 19th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and modernity.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 2510 [0.5 credit]
Architecture of the 18th and 19th Centuries
A survey of key monuments, theories, forms and technological developments of eighteenth- and nineteenth-century architecture.
Precludes additional credit for ARTH 3809 Section "B" taken in 2014.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 2600 [0.5 credit]
Modern European Art 1900-1945
Major artistic movements in Europe from about 1900 to 1945.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 2601 [0.5 credit]
History and Theory of Photography
Issues, themes, movements in photography and individual photographers from the origins of the medium to the present.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTh 2610 [0.5 credit]
Twentieth-Century Architecture
Developments in architectural form and culture through the course of the twentieth century, with emphasis on the formation and subsequent critique of the Modern Movement.
Precludes additional credit for ARTH 3609 and ARCH 3009.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.
ARTH 2710 [0.5 credit]
Experiencing Architecture
Development of critical thinking, writing, and looking skills in connection to architecture, through a combination of site visits, workshops and classroom exercises. Includes: Experiential Learning Activity
Prerequisite(s): ARTH 1200 and ARTH 1201 or permission of the discipline. Restricted to students in the History and Theory of Architecture B.A. or B.A. Honours program. Lecture three hours a week.

ARTH 2807 [0.5 credit]
Philosophy of Art
Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifact; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences. Also listed as PHIL 2807. Lectures three hours a week.

ARTH 3000 [0.5 credit]
Themes in Canadian Art
Selected aspects of Canadian art in a variety of media. Students will be exposed to works in the National Capital region. Prerequisite(s): ARTH 2002 or ARTH 2003 or (for a photography topic) ARTH 2601 and second-year standing or higher, or permission of the Discipline. Lectures three hours a week.

ARTH 3002 [0.5 credit]
Canadian Architecture
Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques. Includes: Experiential Learning Activity
Also listed as ARCH 4002.
Prerequisite(s): ARTH 1100 and ARTH 1101, or ARTH 1200 and ARTH 1201, or ARCH 1002 and ARCH 1201, and second-year standing or higher, or permission of the Discipline.

ARTH 3003 [0.5 credit]
Architecture and Representation
Examination of the intersections between architecture, representations, and cultures. Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing, or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTH 3005 [0.5 credit]
American Architecture
The cultural history of the United States as expressed through its architectural heritage. Selected buildings and complexes from the earliest settlements through the early twentieth century are examined. Prerequisite(s): ARTH 1201 and second-year standing or higher, or permission of the Discipline.
Lectures three hours a week.

ARTH 3007 [0.5 credit]
Modern Asian Art
Modern and contemporary art in East Asia, beginning in Japan with the 1868 Meiji revolution and the 1911 revolution in China. Prerequisite(s): second-year standing or higher, or permission of the Discipline.

ARTH 3008 [0.5 credit]
Contemporary Chinese Art and Art History
Modern and contemporary art in China and beyond from the reform period in 1979 until today. Artworks will be examined in terms of their (art-)historical, discursive, socio-political, infrastructural and transcultural conditions of production and reception. Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 3100 [0.5 credit]
History and Methods of Art and Architectural History
The study of the history of art and architectural history and the methodologies and research tools employed. Precludes additional credit for ARTH 3106 (no longer offered). Prerequisite(s): third-year or higher standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 3102 [0.5 credit]
Studies in Greek Art
A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year. This course is repeatable for credit when the topic changes. Also listed as CLCV 3306, RELI 3732. Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat. Lecture three hours a week.

ARTH 3105 [0.5 credit]
Studies in Roman Art
A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year. Also listed as CLCV 3307, RELI 3733. Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat. Lecture three hours a week.
ARTH 3107 [0.5 credit]
History and Methods of Architectural History
The study of the methodologies and research approaches employed by architectural historians.
Prerequisite(s): ARTH 3100 and third-year standing or higher in History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 3108 [0.5 credit]
History and Methods of Art History
The study of current methodologies and research tools employed by art historians.
Precludes additional credit for ARTH 3106 (no longer offered).
Prerequisite(s): ARTH 3100 and third-year standing or higher in Art History, or permission of the Discipline.
Seminar three hours a week.

ARTH 3400 [0.5 credit]
History of Printmaking
Exploration of printmaking techniques from the 16th century to the present focusing on the work of famous and lesser-known printmakers. Topics may include: printmaking genres (from fine art prints to caricature), originality versus reproduction, book illustration, the art market, posters and propaganda.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing or higher, or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTH 3507 [0.5 credit]
The Artist in Context
An examination of one artist's or group of artists' life and work. Relevant artistic, intellectual, social, political and theoretical contexts are considered.
Prerequisite(s): ARTH 1101 or ARTH 2502 and second-year standing or higher, or permission of the Discipline.
Lectures three hours a week.

ARTH 3600 [0.5 credit]
Art Since 1945
Contemporary art in the global context from 1945 to the present, including Abstract Expressionism, Pop Art, Postmodernism, object art, performance art and installations.
Prerequisite(s): second-year standing or higher, or permission of the Discipline.
Lecture three hours a week.

ARTH 3701 [0.5 credit]
Art and Architecture on Site
The study of art and/or architecture on site outside the National Capital Region, in Canada or internationally. May include a combination of study in Ottawa and on site. Locations vary. Students are expected to bear all travel and other costs arising from site visits.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Discipline. Applicants will normally have third-year standing with a minimum of 1.0 credit in Art History or History and Theory of Architecture and a GPA of 8.0 or above.
Hours to be arranged. Locations will vary.

ARTH 3705 [0.5 credit]
Selected Museum Exhibition
This seminar complements a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing or higher or permission of the Discipline.
Seminar and/or lectures three hours a week.

ARTH 3710 [0.5 credit]
Architecture and Empire
The impact of imperial power and aspiration on the built environment, from the Ancient world to the present day, taking 'empire' in its broadest political, social and economic sense.
Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.
Seminar and/or lectures three hours a week.

ARTH 3809 [0.5 credit]
A Closer Look at Art and Visual Culture
Selected aspects of art history and visual culture from ancient times to the present.
Prerequisite(s): third-year standing or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTH 3810 [0.5 credit]
A Closer Look at the Designed Environment
Selected aspects of the history of the designed environment, from ancient times to the present.
Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.
Lectures and/or seminars three hours a week.
ARTH 3900 [0.5 credit]  
Practicum in Art and Architectural History  
Practical experience gained by working on specific projects under the supervision of the staff of a museum, cultural institution, public- or private-sector organization associated with art, architecture, design, or heritage. A maximum of 1.0 credit in practicum courses may be used to fulfill program requirements.  
Includes: Experiential Learning Activity  
Prerequisite(s): B.A. or B.A. (Honours) in Art History or History and Theory of Architecture with third-year standing or higher and a CGPA of 9.00 or better in ARTH courses, and permission of the Discipline.

ARTH 4000 [0.5 credit]  
Topics in Canadian Art  
Selected topics in Canadian art. Students will be exposed to works in the collections of the National Capital region.  
Prerequisite(s): one of ARTH 2002, ARTH 2003, ARTH 3000 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminars three hours a week.

ARTH 4003 [0.5 credit]  
Topics in Contemporary Chinese Art  
Critical examination of contemporary Chinese art. Topics include socially engaged art, historiographies of Chinese contemporary art, re-inventions of traditions, gender and politics of the body, exhibition histories and infrastructures of contemporary art in China.  
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

ARTH 4005 [0.5 credit]  
Topics in Contemporary Indigenous Art  
This course will use critical theory to examine aspects of contemporary visual art created by the Inuit and First Peoples in North America.  
Prerequisite(s): ARTH 2005 or ARTH 2006 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

ARTH 4007 [0.5 credit]  
Topics in Asian Art  
A selected topic in East Asian Art, which may include 19th century Ukiyo-e woodblock prints, The Gutai Group, performance art in China and Japan, and contemporary Chinese art.  
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

ARTH 4008 [0.5 credit]  
Transnational Theory  
Critical examination of transnational theories of cultural analysis, including Orientalism, Post-Colonial theory, translation theory and theories of cultural hybridity.  
Precludes additional credit for ARTH 3103.  
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

ARTH 4107 [0.5 credit]  
Topics in Islamic Architecture and Art  
Selected aspects of Islamic Architecture and Art.  
Prerequisite(s): ARTH 2107 or ARTH 2310 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

ARTH 4202 [0.5 credit]  
Topics in Medieval Architecture and Art  
Selected aspects of Medieval or Medievalist Architecture and Art.  
Prerequisite(s): ARTH 2202 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

ARTH 4305 [0.5 credit]  
Topics in Renaissance Art  
Selected aspects of Renaissance art and society.  
Prerequisite(s): ARTH 2300 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

ARTH 4402 [0.5 credit]  
Topics in Art of the 18th and 19th Centuries  
Selected aspects of 18th-century and/or 19th-century art.  
Precludes additional credit for ARTH 4406 (no longer offered), ARTH 4505 (no longer offered).  
Prerequisite(s): ARTH 2404 or ARTH 2405 or ARTH 2406 or ARTH 2502 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

ARTH 4600 [0.5 credit]  
Art, Architecture, and Gender  
Art and/or architectural creation, reception and/or historiography through the lens of gender identities.  
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.
ARTh 4602 [0.5 credit]
Issues in the Theory and History of Photography
Relates the themes of selected theoretical texts on photography to specific examples of photographic practice.
Prerequisite(s): ARTH 2601 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4610 [0.5 credit]
Topics in Modern Architecture or Design
Selected topics in architecture and design of the Modern era.
Prerequisite(s): ARTH 2610 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4701 [0.5 credit]
Art and Architecture on Site
Intensive study of art and/or architecture on site outside the National Capital region, in Canada or internationally. May include a combination of study in Ottawa and on site. Students are expected to bear all travel and other costs arising from site visits.
Includes: Experiential Learning Activity
Prerequisite(s): Permission of the Discipline. Applicants will normally have fourth-year standing in Art History or History and Theory of Architecture and a CGPA of 8.0 or above.
Hours to be arranged. Locations vary.

ARTh 4705 [0.5 credit]
Seminar: Selected Museum Exhibition
Studies a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and a CGPA of 9.00 and permission of the Discipline.
Lectures and/or seminar three hours a week.

ARTh 4800 [0.5 credit]
Topics in Architectural History
Selected aspects of architectural history from ancient times to the present.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4809 [0.5 credit]
Topics in Art History and Criticism
Selected aspects of art history and/or criticism from ancient times to the present.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4900 [0.5 credit]
Directed Readings and Research
Supervised readings and research projects. Guidelines must be obtained from the Undergraduate Supervisor prior to registration. A written project outline, approved by the supervising Art History or History and Theory of Architecture faculty member, must be submitted by the last day for course changes.
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.

ARTh 4909 [1.0 credit]
Honours Research Essay
An essay of approximately 10,000 words, resulting from independent research, supervised by Art History or History and Theory of Architecture faculty.
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture with a minimum CGPA of 9.00 and permission of the Discipline.

Human Rights and Social Justice

This section presents the requirements for programs in:

- Human Rights and Social Justice B.A. Honours
- Human Rights and Social Justice B.A. Combined Honours
- Human Rights and Law with Concentration in Transnational Law and Human Rights B.A. Combined Honours
- Human Rights and Social Justice B.A.
- Minor in Human Rights and Social Justice

Program Requirements

Human Rights and Social Justice
B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit from:
   - HUMR 1001 [1.0] Introduction to Human Rights
   - FYSM 1104 [1.0] Human Rights: Issues and Investigations
   - FYSM 1502 [1.0] Selected Topics in Legal Studies (specifically the section on Global Governance and Human Rights)
   - or approved FYSM

2. 0.5 credit in:
   - HUMR 2001 [0.5] Human Rights: Theories and Foundations

3. 0.5 credit in:
   - HUMR 2202 [0.5] Power Relations and Human Rights

4. 0.5 credit from:
   - LAWS 2105 [0.5] Social Justice and Human Rights
   - PHIL 2103 [0.5] Philosophy of Human Rights
   - PSCI 3307 [0.5] Politics of Human Rights

5. 2.5 credits, comprised of 0.5 credit from each of the five Thematic Groups (see list under Course Categories)

6. 1.0 credit at the 4000-level from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)
B.A. Combined Honours (20.0 credits)

Human Rights and Social Justice

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit from:
   - HUMR 1001 [1.0] Introduction to Human Rights
   - FYSM 1104 [1.0] Human Rights: Issues and Investigations
   - FYSM 1502 [1.0] Selected Topics in Legal Studies (specifically the section on Global Governance and Human Rights)

or approved FYSM

2. 0.5 credit in:
   - HUMR 2001 [0.5] Human Rights: Theories and Foundations

3. 0.5 credit in:
   - HUMR 2202 [0.5] Power Relations and Human Rights

4. 0.5 credit from:
   - LAWS 2105 [0.5] Social Justice and Human Rights
   - PHIL 2103 [0.5] Philosophy of Human Rights
   - PSCI 3307 [0.5] Politics of Human Rights

5. 2.5 credits, comprised of 0.5 credit from each of the five Thematic Groups (see list under Course Categories)

6. 1.0 credit at the 4000-level from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)

7. 1.0 credit from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)

8. The requirements for the other discipline must be satisfied

9. Sufficient free electives to make 20.0 credits total for the program.

Total Credits

Human Rights and Law with Concentration in Transnational Law and Human Rights

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit from:
   - HUMR 1001 [1.0] Introduction to Human Rights
   - FYSM 1104 [1.0] Human Rights: Issues and Investigations
   - FYSM 1502 [1.0] Selected Topics in Legal Studies (the section on Global Governance and Human Rights)

or approved FYSM

2. 0.5 credit in:
   - HUMR 2001 [0.5] Human Rights: Theories and Foundations

3. 0.5 credit in:
   - HUMR 2202 [0.5] Power Relations and Human Rights

4. 2.5 credits, comprised of 0.5 credit from each of the five Thematic Groups (see list under Course Categories)

5. 1.0 credit at the 4000-level from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)

6. 1.5 credits from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)

B. Additional Credit Requirements (13.0 credits)

7. The requirements for the other discipline must be satisfied

8. Sufficient free electives to make 20.0 credits total for the program.

Total Credits

Minor in Human Rights and Social Justice (4.0 credits)

Open to all undergraduate students not in Human Rights and Social Justice B.A. programs.

Requirements:

1. 1.0 credit from:
   - HUMR 1001 [1.0] Introduction to Human Rights
   - FYSM 1104 [1.0] Human Rights: Issues and Investigations

2. 1.0 credit in:
   - HUMR 2001 [0.5] Human Rights: Theories and Foundations
   - HUMR 2202 [0.5] Power Relations and Human Rights

3. 1.0 credit at the 2000-level or higher in Human Rights (HUMR) courses
Marginalized Groups, Diversities & Identities

ANTH 2020 [0.5] Race and Ethnicity
ANTH 3020 [0.5] Studies in Race and Ethnicity
ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples
ANTH 4020 [0.5] Advanced Studies in Race and Ethnicity

Critical Principles

HIST 3510 [0.5] Indigenous Peoples of Canada
HUMR 2202 [0.5] Power Relations and Human Rights
HUMR 3503 [0.5] Global Environmental Justice
HUMR 4201 [0.5] Citizenship and Human Rights
LAW 2105 [0.5] Social Justice and Human Rights
LAW 4002 [0.5] Feminist Theories of Law
LAW 4101 [0.5] Contemporary Justice Theories
LAW 4102 [0.5] Controversies in Rights Theory
LAW 4105 [0.5] Global Justice Theory
PHIL 2101 [0.5] History of Ethics
PHIL 2103 [0.5] Philosophy of Human Rights
PHIL 2306 [0.5] Philosophy and Feminism
PHIL 2307 [0.5] Gender and Philosophy
PHIL 2408 [0.5] Bioethics
PHIL 3320 [0.5] Contemporary Ethical Theory
PHIL 3330 [0.5] Topics in History of Social and Political Philosophy
PHIL 3340 [0.5] Topics in Contemporary Social and Political Philosophy
PSCI 3109 [0.5] The Politics of Law and Morality
PSCI 3307 [0.5] Politics of Human Rights
PSCI 3801 [0.5] Environmental Politics

Course Categories by Thematic Group

Some of the Human Rights Electives have prerequisites that are not explicitly included in the program. Students should plan to have credit for the prerequisites of each course in their program or ask to have the prerequisite waived.

Laws and Institutions

LAW 2105 [0.5] Social Justice and Human Rights
LAW 2502 [0.5] Law, State and Citizen
LAW 2601 [0.5] Public International Law
LAW 3401 [0.5] Employment Law
LAW 3509 [0.5] The Charter of Rights Topics
LAW 3602 [0.5] International Human Rights
LAW 3604 [0.5] International Organizations
LAW 4601 [0.5] Transnational Law and Human Rights
LAW 4606 [0.5] International Law of Armed Conflict
LAW 4607 [0.5] Immigration and Refugee Law
PSCI 2601 [0.5] International Relations: Global Politics
PSCI 3600 [0.5] International Institutions
PSCI 4109 [0.5] The Politics of the Canadian Charter of Rights and Freedoms

4. 1.0 credit at the 3000-level or higher in Human Rights (HUMR) courses

Total Credits 4.0

ANTH 4610 [0.5] Advanced Studies in Indigenous Peoples
HIST 3710 [0.5] Themes in Caribbean History
HUMR 2102 [0.5] Sexuality, Gender, and Security
HUMR 2301 [0.5] Human Rights and Sexualities
HUMR 3301 [0.5] Racialization, Racism and Human Rights
HUMR 3302 [0.5] Culture, Religion, and Women's Human Rights
HUMR 3303 [0.5] Children's Rights
HUMR 3304 [0.5] Disability Rights
HUMR 4302 [0.5] Transgender Human Rights
HUMR 4305 [0.5] Disability and Social Justice
HUMR 4401 [0.5] Gender, Citizenship and Social Justice in a Transnational World
INDG 2011 [0.5] Contemporary Indigenous Studies
INDG 3011 [0.5] Indigenous Rights, Resistance, and Resurgence
LAW 3503 [0.5] Equality and Discrimination
LAW 3504 [0.5] Law and Aboriginal Peoples
LAW 4001 [0.5] Law, Family and Gender
LAW 4002 [0.5] Feminist Theories of Law
LAW 4504 [0.5] Indigenous Criminal Justice
PSCI 2500 [0.5] Gender and Politics
PSCI 3805 [0.5] Politics of Race
PSCI 4206 [0.5] Indigenous Politics of North America
PSCI 4403 [0.5] Reproductive Rights Policy in North America
PSCI 4605 [0.5] Gender in International Relations
SOC 2020 [0.5] Race and Ethnicity
SOC 2045 [0.5] Gender and Society
SOC 3019 [0.5] Sociology of International Migration
SOC 3020 [0.5] Studies in Race and Ethnicity
SOC 3040 [0.5] Studies in the Sociology of Gender
SOC 4020 [0.5] Advanced Studies in Race and Ethnicity
SOC 4039 [0.5] Women in Contemporary Middle East Societies
SOC 4040 [0.5] Feminist Sociology of Intersectionality
SOWK 4102 [0.5] Indigenous Peoples and Social Policy
SOWK 4300 [0.5] Social Work and Persons with Disabilities
SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
SXST 2102 [0.5] Sexuality, Gender, and Security
SXST 4101 [0.5] Interdisciplinary Studies of Sexuality
WGST 2800 [0.5] Intersectional Identities
WGST 2803 [0.5] Body Matters: The Politics of Bodies
WGST 3803 [0.5] Feminisms and Transnationalism
WGST 3807 [0.5] Gendered Violence

Political Violence, Persecution and Repression

HIST 3714 [0.5] Holocaust Encounters
HUMR 2102 [0.5] Sexuality, Gender, and Security
HUMR 2401 [0.5] Political Repression
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<td>PSCI 3204 [0.5]</td>
<td>Politics of Latin America</td>
</tr>
<tr>
<td>PSCI 3502 [0.5]</td>
<td>Gender and Politics: Global South</td>
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<tr>
<td>PSCI 3802 [0.5]</td>
<td>Globalization and Human Rights</td>
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<tr>
<td>PSCI 4104 [0.5]</td>
<td>Development in the Global South - Theory and Practice</td>
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<tr>
<td>PSCI 4105 [0.5]</td>
<td>Selected Problems in Development in the Global South</td>
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<tr>
<td>PSCI 4500 [0.5]</td>
<td>Gender and Globalization</td>
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<tr>
<td>SOCI 2010 [0.5]</td>
<td>Critical Approaches to Economic Inequality</td>
</tr>
<tr>
<td>SOCI 2040 [0.5]</td>
<td>Food, Culture and Society</td>
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<tr>
<td>SOCI 2050 [0.5]</td>
<td>Sociology of Health</td>
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<tr>
<td>SOCI 3010 [0.5]</td>
<td>Power, Oppression and Resistance</td>
</tr>
<tr>
<td>SOCI 3027 [0.5]</td>
<td>Globalization and Human Rights</td>
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<tr>
<td>SOCI 3040 [0.5]</td>
<td>Studies in the Sociology of Gender</td>
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<tr>
<td>SOCI 3044 [0.5]</td>
<td>Sociology of Sex and Sexuality</td>
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<tr>
<td>SOCI 3050 [0.5]</td>
<td>Studies in the Sociology of Health</td>
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<tr>
<td>SOCI 3056 [0.5]</td>
<td>Women and Health</td>
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<tr>
<td>SOCI 3430 [0.5]</td>
<td>Studies in Collective Action and Social Movements</td>
</tr>
<tr>
<td>SOCI 4040 [0.5]</td>
<td>Feminist Sociology of Intersectionality</td>
</tr>
<tr>
<td>SOCI 4730 [0.5]</td>
<td>Colonialism and Post-Colonialism</td>
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<tr>
<td>SOCI 4750 [0.5]</td>
<td>Advanced Studies in Globalization and Citizenship</td>
</tr>
<tr>
<td>SOWK 3206 [0.5]</td>
<td>Community Development and Social Change in an International Context</td>
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<tr>
<td>SOWK 3207 [0.5]</td>
<td>Human Rights Practice in Civil Society</td>
</tr>
<tr>
<td>WGST 2800 [0.5]</td>
<td>Intersectional Identities</td>
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<tr>
<td>WGST 2801 [0.5]</td>
<td>Activism, Feminisms, and Social Justice</td>
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<tr>
<td><strong>Human Rights Electives</strong></td>
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<tr>
<td>HUMR 3001 [0.5]</td>
<td>Special Topics in Human Rights</td>
</tr>
<tr>
<td>HUMR 4905 [0.5]</td>
<td>Practicum Placement in Human Rights I</td>
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<tr>
<td>HUMR 4906 [0.5]</td>
<td>Practicum Placement in Human Rights II</td>
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<tr>
<td>HUMR 4907 [0.5]</td>
<td>Special Topic in Human Rights</td>
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<tr>
<td>HUMR 4908 [0.5]</td>
<td>Independent Study</td>
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</tbody>
</table>

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.
Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**


**Subject codes:** AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURRE, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**


**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISI, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**


**Subject codes:** ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

**Declared and Undeclared Students**

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

**Change of Program Within the B.A. Degree**

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.
Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfill the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais ). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement.

Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Human Rights (HUMR) Courses

HUMR 1001 [1.0 credit]
Introduction to Human Rights

Human rights from an interdisciplinary perspective. Topics may include the foundations and nature of rights, roots of inequality and oppression, aboriginal rights, racism, women and rights, sexual orientation, state and corporate power, economic exploitation, the environment and rights, warfare, torture, and social movements.

Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1104.

Lecture and discussion groups/tutorials three hours a week.

HUMR 2001 [0.5 credit]
Human Rights: Theories and Foundations

Historical overview of the theoretical and philosophical approaches underlying the human rights movement and relevant to the normative ideals and aspirations of human rights and to the strategies of their implementation.

Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.

Lectures and discussions three hours a week.

HUMR 2102 [0.5 credit]
Sexuality, Gender, and Security

Historical and contemporary analysis of surveillance, security, and regulation of sexuality, race, class, and gender. Students will critically examine how ‘subversives’ were created through discourse and administrative logics such as policy and law.

Includes: Experiential Learning Activity
Also listed as SXST 2102.

Prerequisite(s): second year standing or permission from the Institute.

Lectures and discussions three hours a week.
HUMR 2202 [0.5 credit]
Power Relations and Human Rights
The study of power from a critical, transnational perspective; the impact on human rights of different forms and modalities of power, including those emanating from the state and corporations and those implicated in socio-economic and other hierarchical relations. Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion groups/tutorials three hours a week.

HUMR 2301 [0.5 credit]
Human Rights and Sexualities
Human rights issues in various cultural contexts concerning sex and/or gender, with attention to sexual minorities such as gay, lesbian, and transgendered persons. Forms of discrimination against sexual minorities and the mechanisms and strategies for redress. Prerequisite(s): second-year standing.
Lectures and discussion groups three hours a week.

HUMR 2401 [0.5 credit]
Political Repression
Canada is home-in-exile to many who have faced severe and often life-threatening political repression such as imprisonment, torture, surveillance, population transfer, etc. This course examines the impacts on survivors of political repression, and strategies used to overcome its legacies. Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion groups three hours a week.

HUMR 2502 [0.5 credit]
Social and Political Movements
The underlying conditions and developments of historical and contemporary social and political movements; specific social movements such as civil rights or gay rights. Prerequisite(s): second-year standing.
Lectures and discussion groups three hours a week.

HUMR 3001 [0.5 credit]
Special Topics in Human Rights
This advanced seminar will cover current and topical issues and/or debates in human rights, and will enable students to engage in focused discussions and analyses of these issues. Topics will vary from year to year. Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3002 [0.5 credit]
Right to the City
“The right to the city” as an emerging focus of advocacy and analysis in urban movements for social justice around especially the local and transnational dimensions of the “right to the city” movement. Precludes additional credit for HUMR 3001 if taken prior to 2013-14.
Prerequisite(s): third year standing.
Lectures three hours a week.

HUMR 3003 [0.5 credit]
Children's Rights
This course examines children’s rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts. Includes: Experiential Learning Activity
Also listed as CHST 3303.
Precludes additional credit for CHST 3901 (no longer offered).
Prerequisite(s): third-year standing.
Lectures and discussion groups three hours a week.

HUMR 3004 [0.5 credit]
Disability Rights
A critical approach to the study of disability rights that explores the intersections of disability with race, sexuality, gender, colonialism, ‘health’, and other discourses. Precludes additional credit for HUMR 4303 (no longer offered).
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3202 [0.5 credit]
Human Rights and Resistance
This course problematizes human rights paradigms and critically examines the limitations of the political within liberal democracies. Bringing together theory and politics, alternative approaches to activism are explored. Topics may include struggles grounded in radical democracy, anti-capitalism, and social justice perspectives. Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3301 [0.5 credit]
Racialization, Racism and Human Rights
The forms and effects of systemic race-based human rights abuses. Topics may include immigration and refugee policies and practices, anti-apartheid regimes, racial profiling, the racial politics of “nationhood” and armed conflict, civil rights and resistance movements in differing cultural contexts. Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Seminar and discussion groups three hours a week.

HUMR 3302 [0.5 credit]
Culture, Religion, and Women’s Human Rights
The impact of cultural and religious traditions on gender, race, ethnicity and sexuality. Topics may include debates related to power dynamics, historical issues, geopolitics, and cultural relativism. Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3303 [0.5 credit]
Children’s Rights
This course examines children’s rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts. Includes: Experiential Learning Activity
Also listed as CHST 3303.
Precludes additional credit for CHST 3901 (no longer offered).
Prerequisite(s): third-year standing.
Lectures and discussion groups three hours a week.
HUMR 3401 [0.5 credit]
**Histories of Persecution and Genocide**
Case studies in persecution and/or genocide in different cultural contexts. The social, political, and legal conditions that have enabled the institutional or state-sanctioned persecution of targeted groups, and the circumstances that had an impact on their decline.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3501 [0.5 credit]
**Social, Economic and Cultural Rights**
The development of social, economic and cultural rights, including rights to housing, healthcare, education and employment. Topics may include the international geopolitics of the historical tension between these rights and civil and political rights.
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3503 [0.5 credit]
**Global Environmental Justice**
Overview of critical debates on environmental issues from a global social justice perspective. Topics may include corporate mining, food sovereignty, poverty, economic exploitation, Indigenous cosmologies and environmental justice, militarization and environmental degradation, privatization of water and climate change.
Prerequisite(s): third-year standing.
Lectures and discussion groups three hours a week.

HUMR 3504 [0.5 credit]
**Public Health and Human Rights**
Through a social-scientific analysis of AIDS, this course explores HIV/AIDS as a case study for understanding the politics of public health. Students will critically interrogate the authority of science and explore avenues for democratizing biomedicine and public health policy in various national and policy contexts.
Includes: Experiential Learning Activity
Precludes additional credit for HUMR 3001 Section "A" if taken in 2013-14 and 2014-15.
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 4201 [0.5 credit]
**Citizenship and Human Rights**
The relationship between citizenship and human rights; how large groups of people, including non-citizens and refugees, are excluded from entitlements to rights. Why human rights rest on citizenship, and with what implications.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

HUMR 4302 [0.5 credit]
**Transgender Human Rights**
Critical analyses of human rights through an examination of transgender subjectivities. The systemic erasure of trans people within society and the struggles of some activists to normalize trans identities.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

HUMR 4305 [0.5 credit]
**Disability and Social Justice**
An intersectional national/transnational approach to social justice issues such as poverty/exploitation, labour, representation, decolonization, race/racism, sexuality and gender from a critical disability studies perspective.
Prerequisite(s): four-year standing in Human Rights or Disability Studies.
Seminar three hours a week.

HUMR 4401 [0.5 credit]
**Gender, Citizenship and Social Justice in a Transnational World**
This seminar critically engages with transnational, gendered, classed, and racialized discursive practices of citizenship, human rights, the geopolitics of knowledge and processes of dehumanization through the lenses of decolonial social justice.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

HUMR 4404 [0.5 credit]
**Rights of Refugees and Displaced Persons**
Contemporary issues concerning the rights of refugees and displaced persons, from social, political, and legal perspectives; Canadian and international dimensions of these issues.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing.
Seminar and discussion groups three hours a week.

HUMR 4409 [0.5 credit]
**Counter-terrorism and Human Rights**
Examines policies and strategies states and international organizations use to combat global terrorism and the challenges these initiatives pose to the international human rights regime, democratic norms, and social justice.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing.
Seminar three hours per week.

HUMR 4502 [0.5 credit]
**Global Indigenous Knowledges and Movements**
Indigenous Peoples contributions to world knowledge through community resistance, social movements and scholarship. How processes of corporate globalization impact Indigenous Peoples lives as an ongoing process of normalizing a reconfigured modern coloniality of power.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.
HUMR 4905 [0.5 credit]  
**Practicum Placement in Human Rights I**  
This course provides students with the opportunity to spend one day per week (6-8 hours) working and learning at a human rights-related government, research or advocacy organization. A written report is required at the end of the placement. Graded as Sat/Uns.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in Human Rights or permission of the Institute.

HUMR 4906 [0.5 credit]  
**Practicum Placement in Human Rights II**  
This course provides students with the opportunity to spend one day per week (6-8 hours) working and learning at a human rights-related government, research or advocacy organization. A written report is required at the end of the placement. Graded as Sat/Uns.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in Human Rights and a GPA of 9.8 or higher or permission of the Institute.

HUMR 4907 [0.5 credit]  
**Special Topic in Human Rights**  
This course features a detailed study of a special topic in any area of Human Rights. Topics and themes will vary from year to year.  
Prerequisite(s): fourth-year standing. Seminar three hours a week.

HUMR 4908 [0.5 credit]  
**Independent Study**  
Essays and/or examinations based on a bibliography constructed by the student in consultation with an instructor.  
Includes: Experiential Learning Activity  
Prerequisite(s): normally restricted to students with at least 3.0 credits of Human Rights courses with at least a CGPA of 9.0 or better in Human Rights courses and permission of the Institute.

**Humanities**  
This section presents the requirements for programs in:  
- Humanities B.Hum. Honours  
- Humanities B.Hum. Combined Honours  
- Biology and Humanities B.Hum. Combined Honours  
The B.Hum. Honours is available with a Study Year Abroad option. Consult the B.Hum. Honours program requirements for more information.

**Program Requirements**  
**Language Requirement**  
Language courses are normally selected from the following list and chosen in consultation with the College’s Academic Advisor. It may be necessary to fulfill a prerequisite before taking these courses.  
- GREK 2200 and GREK 2201  
- LATN 2200 and LATN 2201

- FREN 1100 [1.0] or FREN 2100 [1.0]  
- GERM 2010 and GERM 2100, or GERM 2110 [1.0]  
- ITAL 2010 and ITAL 2020, or ITAL 2110 [1.0]  
- RELI 2010  
- RUSS 2010 and RUSS 2100  
- SPAN 2100 and SPAN 2120, or SPAN 2110 [1.0]

### Humanities B.Hum. Honours (20.0 credits)

1. **4.0 credits in** Humanities Core:  
   - **4.0**  
     - HUMS 1000 [1.0] Myth and Symbol  
     - HUMS 2000 [1.0] Reason and Revelation  
     - HUMS 3000 [1.0] Culture and Imagination  
     - HUMS 4000 [1.0] Politics, Modernity and the Common Good

2. **3.0 credits in:**  
   - **3.0**  
     - HUMS 1005 [0.5] Early Human Cultures  
     - HUMS 1200 [0.5] Humanities and Classical Civilisation  
     - HUMS 3200 [1.0] European Literature  
     - HUMS 4103 [0.5] Science in the Modern World  
     - HUMS 4500 [0.5] Modern Intellectual History

3. **2.0 credits in:**  
   - **2.0**  
     - HUMS 2101 [0.5] Art from Antiquity to the Medieval World  
     - HUMS 2102 [0.5] Modern European Art 1500-2000  
     - HUMS 3102 [0.5] Western Music 1000-1850  
     - HUMS 3103 [0.5] Western Music 1850-2000  
     - (See Note, below)

4. **2.0 credits in:**  
   - **2.0**  
     - RELI 1731 [0.5] Varieties of Religious Experience  
     - RELI 2710 [1.0] Maccabees to Muhammad  
     - CLCV 2008/ENGL 2G10 [0.5] and Roman Epic  
     - or  
     - CLCV 2010/ENGL 2G15 [0.5] and Roman Drama

5. **1.0 credit fulfilling the language requirement**  
   - **1.0**

6. **1.0 credit from:**  
   - **1.0**  
     - CLCV 2902 [0.5] History of Ancient Greece I  
     - CLCV 2903 [0.5] History of Ancient Greece II  
     - CLCV 2904 [0.5] History of Ancient Rome I  
     - CLCV 2905 [0.5] History of Ancient Rome II  
     - HIST 3215 [0.5] Ancient Greek Science  
     - HIST 3216 [0.5] The Scientific Revolution  
     - PHIL 2005 [1.0] Ancient Philosophy: The Search for Wisdom  
     - PSCI 2301 [0.5] History of Political Thought I  
     - PSCI 2302 [0.5] History of Political Thought II

7. **5.0 credits in:**  
   - **5.0**  
     - a. **1.0 credit at the 2000 level or above**  
     - b. **1.0 credit from:**  
       - HUMS 4901 [0.5] Research Seminar: Antiquity to the Middle Ages  
       - HUMS 4902 [0.5] Research Seminar: Renaissance to Enlightenment  
       - HUMS 4903 [0.5] Research Seminar: Romanticism to the Present  
       - HUMS 4904 [0.5] Research Seminar: Non-Western Traditions
Discipline. In this case the requirement that advanced
used to fulfill the requirements of the other discipline
under Item 8. A core seminar in Humanities
to satisfy Items 1 through 7 below may also be used to
at Carleton that allows the combination. Credits used
a Combined Honours with any other degree program
for a Combined Honours degree in Humanities and any
Students already admitted to the B.Hum. may register
B.Hum. Combined Honours (20.0 credits)
Humanities
B.Hum. Combined Honours (20.0 credits)
Students already admitted to the B.Hum. may register
for a Combined Honours degree in Humanities and any
other discipline offered within the B.A. Honours degree
as a Combined Honours. They may also register for
a Combined Honours with any other degree program
at Carleton that allows the combination. Credits used
to satisfy Items 1 through 7 below may also be used to
satisfy up to 2.0 credits of the requirements of the other
discipline under Item 8. A core seminar in Humanities
used to fulfill the requirements of the other discipline
will satisfy the 1.5 advanced credit requirement of that
discipline. In this case the requirement that advanced
credits be 3000-level or above is waived.

Requirements
1. 4.0 credits in Humanities Core: 4.0
HUMS 1000 [1.0] Myth and Symbol
HUMS 2000 [1.0] Reason and Revelation
HUMS 3000 [1.0] Culture and Imagination
HUMS 4000 [1.0] Politics, Modernity and the
Common Good

2. 3.0 credits in: 3.0
HUMS 1005 [0.5] Early Human Cultures
HUMS 1200 [0.5] Humanities and Classical
Civilisation
HUMS 3200 [1.0] European Literature
HUMS 4103 [0.5] Science in the Modern World

3. 2.0 credits in:
HUMS 4500 [0.5] Modern Intellectual History

4. 2.0 credits in:
HUMS 2101 [0.5] Art from Antiquity to the Medieval
World
HUMS 2102 [0.5] Modern European Art 1527-2000
HUMS 3102 [0.5] Western Music 1000-1850
HUMS 3103 [0.5] Western Music 1850-2000
(See Note, below)

5. 1.0 credit fulfilling the language requirement 1.0

6. 0.5 credit at the 2000 level or above 0.5

7. 0.5 credit from: 0.5
HUMS 4901 [0.5] Research Seminar: Antiquity to the
Middle Ages
HUMS 4902 [0.5] Research Seminar: Renaissance to
Enlightenment
HUMS 4903 [0.5] Research Seminar: Romanticism to
the Present
HUMS 4904 [0.5] Research Seminar: Non-Western
Traditions

8. 7.0 credits in electives that include the requirements
for the other discipline of the combined degree or the
minor. 7.0

Total Credits 20.0

Note: For item 3 above, students who transfer into the
B. Hum. may use up to 2.0 credits of any previously
completed art and/or music courses (with the exception
of advanced placement courses); students who study abroad
may use up to 2.0 credits of art and/or music courses
taken abroad; students enrolled in a Combined Honours
in Humanities and Art History or Humanities and Music
may substitute up to 1.0 credit of music or art from their
combined discipline for the respective requirement or part
thereof.

Biology and Humanities
B.Hum. Combined Honours (20.0 credits)

A. Credits Included in the Humanities CGPA:
1. 4.0 credits in Humanities Core:
HUMS 1000 [1.0] Myth and Symbol
HUMS 2000 [1.0] Reason and Revelation
HUMS 3000 [1.0] Culture and Imagination
HUMS 4000 [1.0] Politics, Modernity and the
Common Good

2. 1.5 credits in:
HUMS 1200 [0.5] Humanities and Classical
Civilisation
HUMS 3200 [1.0] European Literature

3. 1.0 credit in:
HUMS 1005 [0.5] Early Human Cultures
RELI 1731 [0.5] Varieties of Religious Experience
or 1.0 credit in an approved Beginner's-level language.

4. 2.0 credits in:
HUMS 2101 [0.5] Art from Antiquity to the Medieval
World
HUMS 2102 [0.5] Modern European Art 1527-2000
HUMS 3102 [0.5] Western Music 1000-1850
HUMS 3103 [0.5] Western Music 1850-2000
(See Note, below)
Note:
1. For Item 4 above, students who transfer into the B. Hum. may use up to 2.0 credits of any previously completed art and/or music courses (with the exception of advanced placement courses); students who study abroad may use up to 2.0 credits of art and/or music courses taken abroad; students enrolled in a Combined Honours in Humanities and Art History or Humanities and Music may substitute up to 1.0 credit of music or art from their combined discipline for the respective requirement or part thereof.

2. For Items 3 and 7 above, students who must take a beginner's-level prerequisite to their Intermediate Language Requirement should do so in place of RELI 1731 & HUMS 1005. Students who are already able to demonstrate a proficiency in a second-language at an intermediate level may have the requirement waived, and in that case may be required to take an additional elective credit at the 2000-level or above in order to bring their total number of credits up to the required 20.0.

3. For items 9 and 10, students taking CHEM 1006 and CHEM 1007 will be required to obtain a grade of B- or higher in CHEM 1006 to take BIOL 2200, and more advanced courses in BIOC and CHEM and advanced laboratory courses in BIOL for which BIOL 2200 is a prerequisite.

B. Hum. with Minor

Students already admitted to the B. Hum. may add a minor to their program in any other discipline in the University which offers a minor. Students registered in the Humanities - B. Hum. Honours who add a minor follow the requirements listed under items 6 to 8 of Humanities - B. Hum. Combined Honours instead of the requirements listed under items 6 to 8 of the Humanities - B. Hum. Honours degree.

Regulations

In addition program requirements described in this section, students must satisfy the Academic Regulations of the University, including the process of Academic Performance Evaluation.

Students should consult the College and its Web site when planning their program and selecting courses.

Requirement for Full-Time Study

Students in the Humanities program must complete a minimum of 4.0 credits by the end of the summer session. The College may permit students to study abroad for a year while remaining registered in the program. For those students permitted to study abroad, Carleton credits commensurate to studies taken abroad will be determined by the College and awarded towards the student's degree. In exceptional circumstances (usually financial need or sickness) the College may also permit students to take a leave of absence for one year while remaining registered in the program.

Academic Performance Evaluation for Bachelor of Humanities

Bachelor of Humanities students are evaluated on the basis of their Overall CGPA and their Core CGPA.

Students are in Good Standing if the Overall CGPA at least 7.00 and the Core CGPA at least 7.00.

A student who is not in Good Standing but has Overall CGPA at least 6.00 and Core CGPA at least 6.00 is on Academic Warning.

A student is required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP) if:

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUMS 2101 [0.5]</td>
<td>Art from Antiquity to the Medieval World</td>
</tr>
<tr>
<td>HUMS 2102 [0.5]</td>
<td>Modern European Art 1527-2000</td>
</tr>
<tr>
<td>HUMS 3102 [0.5]</td>
<td>Western Music 1000-1850</td>
</tr>
<tr>
<td>HUMS 3103 [0.5]</td>
<td>Western Music 1850-2000</td>
</tr>
</tbody>
</table>

(See Note, below)

5. 1.5 credits in:

- RELI 2710 [1.0] Maccabees to Muhammad
- CLCV 2008/ENGL 2 Greek and Roman Epic
- or CLCV 2010/ENGL 2 Greek and Roman Drama

6. 0.5 credit from:

- HUMS 4901 [0.5] Research Seminar: Antiquity to the Middle Ages
- HUMS 4902 [0.5] Research Seminar: Renaissance to Enlightenment
- HUMS 4903 [0.5] Research Seminar: Romanticism to the Present
- HUMS 4904 [0.5] Research Seminar: Non-Western Traditions

7. 1.0 credit fulfilling the language requirement

8. 0.5 credit at the 2000-level or above.

9. 3.0 credits in:

- BIOL 1103 [0.5] Foundations of Biology I
- BIOL 1104 [0.5] Foundations of Biology II
- BIOL 2001 [0.5] Animals: Form and Function
- or BIOL 2002 [0.5] Plants: Form and Function
- BIOL 2104 [0.5] Introductory Genetics
- or BIOL 2107 [0.5] Fundamentals of Genetics
- BIOL 2200 [0.5] Cellular Biochemistry
- or BIOL 2201 [0.5] Cell Biology and Biochemistry
- BIOL 2303 [0.5] Microbiology
- or BIOL 2600 [0.5] Ecology

10. 2.0 credits from:

- CHEM 1001 [0.5] General Chemistry I
- & CHEM 1002 [0.5] General Chemistry II
- CHEM 1005 [0.5] Elementary Chemistry I
- & CHEM 1006 [0.5] Elementary Chemistry II
- CHEM 2203 [0.5] Organic Chemistry I
- CHEM 2204 [0.5] Organic Chemistry II
- CHEM 2207 [0.5] Introduction to Organic Chemistry I
- & CHEM 2208 [0.5] Introduction to Organic Chemistry II

11. 3.0 credits in BIOL or BIOC at the 3000 level or above.

Total Credits 20.0

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Continuation Regulations

1. The student was on Academic Warning and does not achieve Good Standing at the next Academic Performance Evaluation, or

2. The student has Overall CGPA less than 6.00 or Core CGPA less than 6.00 at any Academic Performance Evaluation.

A student who has completed the first year of the B.Hum. may apply to transfer to the second year of the B.J.Hum. Transfers into higher years will not be considered.

Transfer from B.Hum. to B.J.Hum.

A student who has completed the first year of the B.Hum. in Good Standing may apply to transfer into the second year of the B.J. Hum. and will be accepted at the discretion of the School of Journalism and the College of Humanities, and must normally have an overall CGPA of 10.00 (A-) or higher. Transfers into higher years will not be considered.

The Humanities Core

HUMS 1000, HUMS 2000, HUMS 3000, HUMS 4000

Academic Performance Evaluation for Bachelor of Journalism and Humanities

The Bachelor of Journalism and Humanities degree distinguishes between a student's Overall CGPA and their Core Humanities CGPA.

The Core Humanities CGPA is calculated on the basis of the following four courses: HUMS 1000, HUMS 2000, HUMS 3000, HUMS 4000.

Continuation Regulations

1. Continuation in the Bachelor of Journalism and Humanities program requires the successful completion of 4.0 credits, including JOUR 1001 and JOUR 1002, by the first Academic Performance Evaluation.
   a. Students are in Good Standing at the first APE if they have an Overall CGPA of at least 7.0 and a Core Humanities CGPA of 7.00.
   b. Students who do not achieve Good Standing but who have an Overall CGPA of at least 6.0 and a Core Humanities CGPA of at least 6.00 are on Academic Warning. Those on Academic Warning must complete the following 2.0 credits of Journalism courses by the next APE, with a minimum final grade of C in each: JOUR 2201, JOUR 2202, JOUR 2501. (Note that the overall CGPA must be 7.0 or above by the next APE to be eligible to continue in Good Standing in the Bachelor of Journalism and Humanities.) Students who do not meet this requirement must leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).
   c. Students who do not achieve Good Standing and who have an Overall CGPA or a Core Humanities CGPA of less than 6.0 are required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).

2. Students are in Good Standing at any subsequent Academic Performance Evaluation if they have an Overall CGPA of 7.00 or higher and a Core Humanities CGPA of 7.00 or higher. A student who is not in Good Standing but who has an Overall CGPA of 6.00 or higher and Core Humanities CGPA of 6.00 or higher is on Academic Warning.

3. A student is required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP) if:
   a. the student was on Academic Warning and does not achieve Good Standing at the next Academic Performance Evaluation, or
   b. the student has an Overall CGPA of less than 6.00 or a Core Humanities CGPA of less than 6.00 at any Academic Performance Evaluation.

Transfer into second year of the B.J.Hum.

The School maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA equivalent to 10.00 (A-) or better.

Continuation in Good Standing at subsequent Academic Performance Evaluations requires an Overall CGPA of at least 7.0 and a Core Humanities CGPA of at least 7.0. An additional year may be necessary for transfer students to complete their degree requirements.

General prerequisite

1. Students may continue into 3000-level Journalism production courses JOUR 3207, JOUR 3208, JOUR 3225, JOUR 3235 if they attain a minimum grade of C in each of the following: JOUR 2201, JOUR 2202 and JOUR 2501. (Note that the overall CGPA must be 7.0 or above at each APE to be eligible to continue in Good Standing in the Bachelor of Journalism and Humanities.)

2. Students may continue into the 4000-level Journalism publication courses JOUR 4003, JOUR 4004 and JOUR 4005 if they attain a minimum grade of C in each of the following: JOUR 3207, JOUR 3208, JOUR 3225, JOUR 3235. (Note that the overall CGPA must be 7.0 or above at each APE to be eligible to continue in Good Standing in the Bachelor of Journalism and Humanities.)

Transferring from the B.J.Hum. to the B.J. or B.Hum.

A student who wishes to transfer from the B.J.Hum. to the B.J. or the B.Hum. may apply through Admissions and will be accepted if, upon entry to the new program, they would be in Good Standing.

A student who fails any A.P.E. and who is consequently on Academic Warning or who must leave the program with Continue in Alternate (CA) may transfer into the B.J. or the B.Hum. only if they would be in Good Standing upon entry into their new degree.

Degrees

- B. Hum. (Honours)
- B. Hum. and Biology (Honours)
Admission Requirements

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The Bachelor of Humanities and Biology option must include 4U Chemistry or 4U Biology.

Note:
The overall admission cut-off average and/or prerequisite average may be considerably higher than the stated minimum requirements for admission. Applicants with lower averages may be asked to submit a portfolio in support of their application. For detailed information about the portfolio and whether you are required to submit one, please consult with the Bachelor of Humanities website. The portfolio should be submitted to the College of the Humanities, Carleton University.

Advanced Standing
Applications for admission with advanced standing to the program leading to the Bachelor of Humanities will be evaluated individually. On admission, students will not receive credit for courses graded below C-. The College also maintains a number of places in second and third year for students who wish to transfer from Carleton or elsewhere. Applications will be assessed on their merits but normally an overall CGPA of 8.0 (B) or higher is required. On admission, students will not receive credit for courses graded below C-.

Humanities (HUMS) Courses

HUMS 1000 [1.0 credit]
Myth and Symbol
Recurring symbols in myth, epic and ritual representing the relation between the sacred and the profane, the origin of the cosmos, the basis of community, and formative human experiences. Primary sources drawn from ancient India and China, Mesopotamia, the Hebrew Bible, and Indigenous cultures.
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.

HUMS 1005 [0.5 credit]
Early Human Cultures
Cultural experiences of small scale societies, including kinship, rituals, magic, social structure, and subsistence. Reading may include the works of classic anthropologists such as Maine, Tylor, Morgan, and Boas.
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.

HUMS 1200 [0.5 credit]
Humanities and Classical Civilisation
The ideas which animated ancient Greek and Roman civilisation and which influenced later western cultural movements through a reading of literary, historical, and philosophical works. Authors include Homer, Herodotus, Thucydides, the Greek Tragedians, Plato, Vergil, and Cicero.
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lecture three hours a week.

HUMS 1500 [0.5 credit]
Introduction to the Humanities: Five Books that Changed the World
A reading-intensive course on five influential books from Antiquity to the present day. Works may include the Bible, the Bhagavad Gita, Homer’s Odyssey, Plato’s Republic, Dante’s Inferno, Machiavelli’s The Prince, Shakespeare’s Hamlet, Mary Shelley’s Frankenstein, Nietzsche’s Beyond Good and Evil, Marx’s Communist Manifesto.
Prerequisite(s): enrolment in a degree program in the Faculty of Arts and Social Sciences, or the Faculty of Public Affairs. Students enrolled in the BHum. program are not eligible to register in this course.
Lecture three hours per week.

HUMS 2000 [1.0 credit]
Reason and Revelation
The origins of philosophy in ancient Greece and its pursuit in the medieval West, with special attention to knowledge, happiness, and love. Readings include works by Plato, Aristotle, Plotinus, Augustine, Boethius, Aquinas, and Dante.
Prerequisite(s): HUMS 1000 and enrolment in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.

HUMS 2101 [0.5 credit]
Art from Antiquity to the Medieval World
A chronological and thematic survey of the Arts from the earliest times to ca. 1400.
Prerequisites additional credit for HUMS 4101 (no longer offered).
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lecture three hours a week.

HUMS 2102 [0.5 credit]
Modern European Art 1527-2000
A chronological and thematic survey of the Arts from the sixteenth to the twenty-first century.
Prerequisites additional credit for HUMS 4101 (no longer offered) and HUMS 3101 (no longer offered).
Prerequisite(s): HUMS 2101 and restricted to students in the Bachelor of Humanities program.
Lecture three hours a week.
HUMS 3000 [1.0 credit]
Culture and Imagination
Major forms of literary, artistic, and philosophical expression from 1500-1800. Sources drawn from renaissance humanism, reformation theology, enlightenment and romantic philosophy.
Prerequisite(s): HUMS 2000 and enrolment in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.

HUMS 3102 [0.5 credit]
Western Music 1000-1850
Introduction to basic theory, harmony, history and interpretation of Western music including the Medieval, Renaissance, Baroque, Classical and early Romantic periods.
Includes: Experiential Learning Activity
Precludes additional credit for HUMS 4102 (no longer offered).
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week.

HUMS 3103 [0.5 credit]
Western Music 1850-2000
Western music from the mid-nineteenth century to the present with emphasis on the seminal contributions of Liszt, Wagner, Mahler, Debussy, Stravinsky, Schönberg and others.
Includes: Experiential Learning Activity
Precludes additional credit for HUMS 4102 (no longer offered).
Prerequisite(s): HUMS 3102 and restricted to students in the Bachelor of Humanities program.
Lecture three hours a week.

HUMS 3200 [1.0 credit]
European Literature
Major movements and works from Dante's Divine Comedy through Voltaire's Candide. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.
Also listed as ENGL 3201.
Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program. English students should have third-year standing with a GPA of B or above.
Lectures three hours a week.

HUMS 3500 [0.5 credit]
Ancient and Medieval Intellectual History
Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from Archaic Greece to the High Middle Ages.
Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.
Lectures three hours a week.

HUMS 3550 [0.5 credit]
Renaissance and Early Modern Intellectual History
Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from the Early Renaissance to 1800.
Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.
Lectures three hours a week.

HUMS 4000 [1.0 credit]
Politics, Modernity and the Common Good
Modern and post-modern ways of thinking and doing, including revolutionary new ideas in politics, philosophy, culture, economics, and international relations. Thinkers considered include Arendt, Foucault, Hegel, Heidegger, Hobbes, Kant, Marx, Nietzsche, Polanyi, Rousseau, Said, and Taylor.
Includes: Experiential Learning Activity
Prerequisite(s): HUMS 3000 and enrolment in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.

HUMS 4001 [0.5 credit]
Directed Studies in the Humanities
A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

HUMS 4002 [0.5 credit]
Directed Studies in the Humanities
A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program and Good Standing in the program.

HUMS 4103 [0.5 credit]
Science in the Modern World
An introduction to the major scientific ideas of our time (such as Big Bang theory, molecular genetics, evolution, atomic structure), and the impact of technology on society (e.g. global warming, pollution, genetically modified foods, viral infections).
Includes: Experiential Learning Activity
Precludes additional credit for HUMS 4100 (no longer offered).
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week.
HUMS 4500 [0.5 credit]  
**Modern Intellectual History**  
Examination of some of the major ideas and ideologies from 1800 to the present, including romanticism, liberalism, nationalism, symbolism, socialism, Freudianism, communism, feminism, and postmodernism. Includes: Experiential Learning Activity  
Precludes additional credit for HUMS 4104.  
Prerequisite(s): restricted to students in the Bachelor of Humanities program.  
Lectures three hours a week.

HUMS 4901 [0.5 credit]  
**Research Seminar: Antiquity to the Middle Ages**  
An interdisciplinary seminar on a selected topic in the humanities from Antiquity to the Middle Ages. The topic will vary from year to year. Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.  
Seminar three hours a week.

HUMS 4902 [0.5 credit]  
**Research Seminar: Renaissance to Enlightenment**  
An interdisciplinary seminar on a selected topic in the humanities from the Renaissance to the Enlightenment. The topic will vary from year to year. Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.  
Seminar three hours a week.

HUMS 4903 [0.5 credit]  
**Research Seminar: Romanticism to the Present**  
An interdisciplinary seminar on a selected topic in the humanities from Romanticism to the present. The topic will vary from year to year. Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.  
Seminar three hours a week.

HUMS 4904 [0.5 credit]  
**Research Seminar: Non-Western Traditions**  
An interdisciplinary seminar on a selected topic in the humanities as expressed in aboriginal and Non-Western cultures. The topic will vary from year to year. Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.  
Seminar three hours a week.

**Indigenous Studies**

This section presents the requirements for programs in:  
- Indigenous Studies B.A. Combined Honours  
- Minor in Indigenous Studies

**Program Requirements**

**Indigenous Studies B.A. Combined Honours (20.0 Credits)**

<table>
<thead>
<tr>
<th>Credits Included in the Indigenous Studies Major</th>
<th>7.0 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 1.0 credit in:</td>
<td>1.0</td>
</tr>
<tr>
<td>INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies</td>
<td></td>
</tr>
<tr>
<td>INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters</td>
<td></td>
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<tr>
<td>2. 1.5 credits in:</td>
<td>1.5</td>
</tr>
<tr>
<td>INDG 2011 [0.5] Contemporary Indigenous Studies</td>
<td></td>
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<tr>
<td>INDG 2015 [0.5] Indigenous Ecological Ways of Knowing</td>
<td></td>
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<tr>
<td>INDG 2020 [0.5] Decolonizing Gender, Sex, and Sexuality</td>
<td></td>
</tr>
<tr>
<td>3. 1.0 credit in:</td>
<td>1.0</td>
</tr>
<tr>
<td>INDG 3001 [0.5] Indigenous Governance</td>
<td></td>
</tr>
<tr>
<td>INDG 3015 [0.5] Indigenous Ecological Ways of Knowing and the Academy</td>
<td></td>
</tr>
<tr>
<td>4. 1.0 credit in:</td>
<td>1.0</td>
</tr>
<tr>
<td>INDG 4001 [0.5] Indigeneity in the City</td>
<td></td>
</tr>
<tr>
<td>INDG 4011 [0.5] Indigenous Representations</td>
<td></td>
</tr>
<tr>
<td>5. 1.5 credits from the list of Approved INDG electives</td>
<td>1.5</td>
</tr>
<tr>
<td>6. 1.0 credit at the 4000-level from the list of Approved INDG electives</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**B. Additional Requirements (13.0 credits)**  
7. The requirements for Combined Honours in the other discipline must be satisfied
8. Sufficient free electives to achieve a total of 20.0 credits for the program

**Total Credits:** 20.0

**Indigenous Studies Electives**

The following courses are deemed by the School of Indigenous and Canadian Studies to have significant Indigenous content, and can be included where appropriate as part of a minor in Indigenous Studies. Carleton courses not on this list may be applied as approved Indigenous Studies electives, but they must be approved by the Undergraduate Supervisor. Students taking courses at the University of Ottawa should consult with the Undergraduate Supervisor to gain approval for substituting them as approved Indigenous Studies electives.

**African Studies**

| AFRI 1001 [0.5] Introduction to African Studies I |
| AFRI 1002 [0.5] Introduction to African Studies II |
| AFRI 3001 [0.5] Globalization and Popular Culture in Africa |
| AFRI 3100 [0.5] African Studies Abroad: Selected Topics |
| AFRI 4000 [0.5] Advanced Topics in African Studies |
| AFRI 4050 [0.5] Selected Topics in African Studies |

**Anthropology**

| ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research |
| ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa |

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 2630 [0.5]</td>
<td>Studies in Asian Societies: Current Issues in Anthropological Research</td>
</tr>
<tr>
<td>ANTH 2640 [0.5]</td>
<td>Andean Ethnography</td>
</tr>
<tr>
<td>ANTH 2650 [0.5]</td>
<td>Ethnography of Mesoamerica</td>
</tr>
<tr>
<td>ANTH 2660 [0.5]</td>
<td>Ethnography of North Africa</td>
</tr>
<tr>
<td>ANTH 2670 [0.5]</td>
<td>Ethnography of Brazil</td>
</tr>
<tr>
<td>ANTH 3570 [0.5]</td>
<td>Studies in Art, Culture and Society</td>
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<tr>
<td>ANTH 3600 [0.5]</td>
<td>Studies in Anthropology and Indigenous Peoples</td>
</tr>
<tr>
<td>ANTH 4610 [0.5]</td>
<td>Advanced Studies in Indigenous Peoples</td>
</tr>
<tr>
<td>ANTH 4620 [0.5]</td>
<td>Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research</td>
</tr>
<tr>
<td>ANTH 4730 [0.5]</td>
<td>Colonialism and Post-Colonialism</td>
</tr>
<tr>
<td>ARTH 2005 [0.5]</td>
<td>Arts of the First Peoples: The Woodlands, the Plains and the Subarctic</td>
</tr>
<tr>
<td>ARTH 2006 [0.5]</td>
<td>Arts of the First Peoples: The Southwest, the West Coast and the Arctic</td>
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<td>ARTH 2008 [0.5]</td>
<td>Inuit Art</td>
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<tr>
<td>ARTH 4005 [0.5]</td>
<td>Topics in Contemporary Indigenous Art</td>
</tr>
<tr>
<td>CDNS 4800 [1.0]</td>
<td>Internship Practicum</td>
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<tr>
<td>CDNS 4801 [0.5]</td>
<td>Internship/Practicum</td>
</tr>
<tr>
<td>CDNS 4802 [0.5]</td>
<td>Internship/Practicum</td>
</tr>
<tr>
<td>CDNS 4901 [0.5]</td>
<td>Selected Topics in Canadian Studies</td>
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<tr>
<td>CDNS 4902 [0.5]</td>
<td>Selected Topics in Canadian Studies</td>
</tr>
<tr>
<td>CDNS 4903 [0.5]</td>
<td>Études dirigées I</td>
</tr>
<tr>
<td>CDNS 4904 [0.5]</td>
<td>Études dirigées II</td>
</tr>
<tr>
<td>CDNS 4905 [0.5]</td>
<td>Directed Studies I</td>
</tr>
<tr>
<td>CDNS 4906 [0.5]</td>
<td>Directed Studies II</td>
</tr>
<tr>
<td>CDNS 4907 [1.0]</td>
<td>Directed Studies III</td>
</tr>
<tr>
<td>(Provided they have Indigenous content)</td>
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</tr>
<tr>
<td>CHST 3002 [0.5]</td>
<td>Special Topics in Child Studies</td>
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<tr>
<td>ENGL 2709 [0.5]</td>
<td>Indigenous Drama</td>
</tr>
<tr>
<td>ENGL 2926 [0.5]</td>
<td>African Literatures I</td>
</tr>
<tr>
<td>ENGL 2927 [0.5]</td>
<td>African Literatures II</td>
</tr>
<tr>
<td>ENGL 2936 [0.5]</td>
<td>South Asian Literatures I</td>
</tr>
<tr>
<td>ENGL 2937 [0.5]</td>
<td>South Asian Literatures II</td>
</tr>
<tr>
<td>ENGL 2956 [0.5]</td>
<td>Literatures of the Americas I</td>
</tr>
<tr>
<td>ENGL 2957 [0.5]</td>
<td>Literatures of the Americas II</td>
</tr>
<tr>
<td>ENGL 3960 [0.5]</td>
<td>Studies in Indigenous Literature</td>
</tr>
<tr>
<td>ENGL 3965 [0.5]</td>
<td>Intro to Postcolonial Theory</td>
</tr>
<tr>
<td>ENGL 3972 [0.5]</td>
<td>Studies in Postcolonial Literature</td>
</tr>
<tr>
<td>ENGL 4960 [0.5]</td>
<td>Indigenous Literatures I</td>
</tr>
<tr>
<td>ENGL 4961 [0.5]</td>
<td>Indigenous Literatures II</td>
</tr>
<tr>
<td>ENGL 4975 [0.5]</td>
<td>Issues in Postcolonial Theory</td>
</tr>
<tr>
<td>ENGL 4976 [0.5]</td>
<td>Issues in Postcolonial Literature</td>
</tr>
<tr>
<td>FYSM 1900 [1.0]</td>
<td>Selected Topics In the Study of Academic Discourses (specifically the section on Aboriginal Topics)</td>
</tr>
<tr>
<td>GEOG 3209 [0.5]</td>
<td>Sustainability and Environment in the South</td>
</tr>
<tr>
<td>GEOG 3501 [0.5]</td>
<td>Geographies of the Canadian North</td>
</tr>
<tr>
<td>HIST 2308 [0.5]</td>
<td>Colonial Latin America</td>
</tr>
<tr>
<td>HIST 2309 [0.5]</td>
<td>Modern Latin America</td>
</tr>
<tr>
<td>HIST 2311 [0.5]</td>
<td>Environmental History of Canada</td>
</tr>
<tr>
<td>HIST 2706 [0.5]</td>
<td>Ancient and Pre-Colonial Africa</td>
</tr>
<tr>
<td>HIST 2707 [0.5]</td>
<td>Modern Africa</td>
</tr>
<tr>
<td>HIST 2710 [0.5]</td>
<td>Introduction to Caribbean History</td>
</tr>
<tr>
<td>HIST 3505 [0.5]</td>
<td>Women in Canada</td>
</tr>
<tr>
<td>HIST 3510 [0.5]</td>
<td>Indigenous Peoples of Canada</td>
</tr>
<tr>
<td>HIST 3511 [0.5]</td>
<td>Themes in Indigenous History</td>
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<tr>
<td>HIST 3704 [0.5]</td>
<td>Aztecs</td>
</tr>
<tr>
<td>HIST 3710 [0.5]</td>
<td>Themes in Caribbean History</td>
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<tr>
<td>HIST 3712 [0.5]</td>
<td>Mexico: Aztecs to Narcos</td>
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<tr>
<td>HIST 3713 [0.5]</td>
<td>Gender and Sexuality in Latin America</td>
</tr>
<tr>
<td>HIST 3715 [0.5]</td>
<td>Themes in South Asian History</td>
</tr>
<tr>
<td>HIST 3717 [0.5]</td>
<td>Gender and Sexuality in Africa</td>
</tr>
<tr>
<td>HUMR 3503 [0.5]</td>
<td>Global Environmental Justice</td>
</tr>
<tr>
<td>HUMR 4502 [0.5]</td>
<td>Global Indigenous Knowledges and Movements</td>
</tr>
<tr>
<td>LACS 1001 [0.5]</td>
<td>Introduction to Latin American and Caribbean Studies I</td>
</tr>
<tr>
<td>LACS 1002 [0.5]</td>
<td>Introduction to Latin American and Caribbean Studies II</td>
</tr>
<tr>
<td>LACS 4001 [0.5]</td>
<td>Issues in Latin American and Caribbean Studies</td>
</tr>
<tr>
<td>LAWS 2201 [0.5]</td>
<td>Persons and Property</td>
</tr>
<tr>
<td>LAWS 2202 [0.5]</td>
<td>Obligations</td>
</tr>
<tr>
<td>LAWS 2501 [0.5]</td>
<td>Law, State and Constitution</td>
</tr>
<tr>
<td>LAWS 2502 [0.5]</td>
<td>Law, State and Citizen</td>
</tr>
<tr>
<td>LAWS 3504 [0.5]</td>
<td>Law and Aboriginal Peoples</td>
</tr>
<tr>
<td>LAWS 4504 [0.5]</td>
<td>Indigenous Criminal Justice</td>
</tr>
<tr>
<td>LANG 1010 [0.5]</td>
<td>Introduction to a Language I</td>
</tr>
<tr>
<td>LANG 1020 [0.5]</td>
<td>Introduction to a Language II</td>
</tr>
<tr>
<td>(When the language offered is an Indigenous language of Canada)</td>
<td></td>
</tr>
<tr>
<td>MUSI 3106 [0.5]</td>
<td>Popular Musics of the World</td>
</tr>
<tr>
<td>MUSI 4104 [0.5]</td>
<td>First Peoples Music in Canada</td>
</tr>
<tr>
<td>MUSI 4105 [0.5]</td>
<td>Issues and Processes in African Music</td>
</tr>
<tr>
<td>PSCI 3101 [0.5]</td>
<td>Politics of War in Africa</td>
</tr>
<tr>
<td>PSCI 3105 [0.5]</td>
<td>Imperialism</td>
</tr>
<tr>
<td>PSCI 3203 [0.5]</td>
<td>Government and Politics in the Middle East</td>
</tr>
<tr>
<td>PSCI 3204 [0.5]</td>
<td>Politics of Latin America</td>
</tr>
</tbody>
</table>
Undergraduate degree students. The Minor in Indigenous Studies is open to all undergraduate degree students.

**Minor in Indigenous Studies (4.0 credits)**

The Minor in Indigenous Studies is open to all undergraduate degree students.

**Requirements:**

1. **1.0 credit from:**  
   - INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies
   - INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters

2. **1.0 credit from:**  
   - INDG 2011 [0.5] Contemporary Indigenous Studies
   - INDG 2012 [0.5] Anishinaabe Studies
   - INDG 2013 [0.5] Haudenosaunee Studies
   - INDG 2015 [0.5] Indigenous Ecological Ways of Knowing
   - INDG 2020 [0.5] Decolonizing Gender, Sex, and Sexuality

3. **1.0 credit from:**  
   - INDG 3001 [0.5] Indigenous Governance
   - INDG 3011 [0.5] Indigenous Rights, Resistance, and Resurgence
   - INDG 3015 [0.5] Indigenous Ecological Ways of Knowing and the Academy
   - INDG 3901 [0.5] Selected Topics in Indigenous Studies
   - INDG 4001 [0.5] Indigeneity in the City
   - INDG 4011 [0.5] Indigenous Representations
   - INDG 4015 [0.5] Land as a Relation
   - INDG 4020 [0.5] Practicum

4. **1.0 credit from** the list of approved Indigenous Studies Electives

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish).

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

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**Indigenous Studies Courses**

- INDG 3901 [0.5] Selected Topics in Indigenous Studies
- INDG 4001 [0.5] Indigeneity in the City
- INDG 4011 [0.5] Indigenous Representations
- INDG 4015 [0.5] Land as a Relation
- INDG 4020 [0.5] Practicum

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**Minor in Indigenous Studies (4.0 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCI 3205</td>
<td>Mexican Politics</td>
</tr>
<tr>
<td>PSCI 3700</td>
<td>Government and Politics of South Asia</td>
</tr>
<tr>
<td>PSCI 4109</td>
<td>The Politics of the Canadian Charter of Rights and Freedoms</td>
</tr>
<tr>
<td>PSCI 4203</td>
<td>Southern Africa After Apartheid</td>
</tr>
<tr>
<td>PSCI 4206</td>
<td>Indigenous Politics of North America</td>
</tr>
<tr>
<td>PSCI 4207</td>
<td>Globalization, Adjustment and Democracy in Africa</td>
</tr>
</tbody>
</table>

**Religion**

- RELI 2720 [0.5] Indigenous Religions of Canada
- RELI 2800 [0.5] Indigenous Traditions

**Sexuality Studies**

- SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
- SXST 3104 [0.5] Transnational Sexualities

**Social Work**

- SOWK 4102 [0.5] Indigenous Peoples and Social Policy

**South Asian Studies**

- SAST 1001 [0.5] Introduction to South Asian Studies I
- SAST 1002 [0.5] Introduction to South Asian Studies II

**Women’s and Gender Studies**

- WGST 2800 [0.5] Intersectional Identities
- WGST 3803 [0.5] Feminisms and Transnationalism
- WGST 3807 [0.5] Gendered Violence
Breadth Area 2: Humanities

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECTOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAA, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfill the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off
averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais ). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Indigenous Studies (INDG) Courses

INDG 1000 [1.0 credit]
Introduction to Indigenous Studies
Survey of historical and contemporary issues relating to Indigenous peoples in Canada. Cultural traditions and the social interactions between Indigenous and non-Indigenous societies are approached from an interdisciplinary perspective. Precludes additional credit for INDG 1010 and INDG 1011. Online only.

INDG 1010 [0.5 credit]
Introduction to Indigenous Peoplehood Studies
This course begins by looking at Creation Stories of different Indigenous peoples and builds to discuss Indigenous worldviews, ways of living, ecological relationships, inter-Indigenous relations and diplomacy among Indigenous peoples. Course materials are rooted in self-situated and collective understandings of Indigenous peoples. Precludes additional credit for INDG 1000. Lecture/groups, three hours a week.

INDG 1011 [0.5 credit]
Introduction to Indigenous-Settler Encounters
An interdisciplinary examination of the history of relations between different Indigenous peoples and settler populations from first meetings to the mid-20th century. Topics vary by year, but may include diplomatic relations, trade, spirituality and religion, military alliances, policy, education. Precludes additional credit for INDG 1000. Lecture/groups, three hours a week.

INDG 2011 [0.5 credit]
Contemporary Indigenous Studies
Indigenous and non-Indigenous perspectives on issues since the 1960s. Topics include: contemporary explorations of treaty relationship and governance, cultural appropriation, identity politics, urban Aboriginality and contemporary social and cultural issues. Precludes additional credit for CDNS 2100 and CDNS 2011. Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Lectures/groups three hours a week.

INDG 2012 [0.5 credit]
Anishinaabe Studies
In-depth look at the Anishinaabe peoples. Topics may include: Anishinaabe creation stories, migration, the clan system, worldviews; oral, written, and recorded history; treaties, contemporary events, ecological knowing, cultural production, relations with settler-colonies and other nations, self-governance, diplomatic relations. Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Lecture/groups three hours a week.

INDG 2013 [0.5 credit]
Haudenosaunee Studies
Focuses on the Haudenosaunee from the founding of the Confederacy to present. Discussion of the culture, language, and structure of Haudenosaunee society, the Kanierehkowa (Great Law of Peace) and the Code of Handsome Lake, symbolism, and contemporary issues, including the impact of Euro-Canadian government policies. Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Lecture/groups, three hours a week.
INDG 2015 [0.5 credit]
**Indigenous Ecological Ways of Knowing**
Indigenous peoples’ relationships with the non-human world in both historical and contemporary contexts. Topics may include: the origins of Indigenous ecological ways of knowing, Indigenous languages, collective stewardship, water, land, and challenges to maintaining traditional knowledge. 
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. 
Lecture/groups, three hours a week.

INDG 2020 [0.5 credit]
**Decolonizing Gender, Sex, and Sexuality**
Effects of colonization in unbalancing Indigenous peoples’ lives through the imposition of constructions of gender, sex, and sexuality, and the ways that Indigenous peoples are working to restore balance to their families and communities. Topics vary by year. 
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. 
Lecture/groups, three hours a week.

INDG 2709 [0.5 credit]
**Indigenous Drama**
A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors and other practitioners. 
Also listed as ENGL 2709. 
Prerequisite(s): second-year standing or permission of the School. 
Lecture three hours per week.

INDG 3001 [0.5 credit]
**Indigenous Governance**
An examination and discussion of different Indigenous forms of governance. Topics will vary by year and may include: Indigenous ways of knowing and forms of governance, community leadership, diplomatic relations, and struggles for self-determination. 
Precludes additional credit for INDG 3000 (no longer offered). 
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies. 
Seminar three hours per week.

INDG 3011 [0.5 credit]
**Indigenous Rights, Resistance, and Resurgence**
Indigenous approaches to restoring balance within their nations. Topics include: direct action; political organizing; land claims; rights, courts, and legal action; everyday acts of resistance and resurgence such as petitioning, social media, arts-based movements, and community initiatives. 
Includes: Experiential Learning Activity 
Precludes additional credit for INDG 3010 (no longer offered). 
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies. 
Seminar three hours per week.

INDG 3015 [0.5 credit]
**Indigenous Ecological Ways of Knowing and the Academy**
The relationship between Indigenous traditional ecological knowledges and the academy. Topics include: linguistic barriers, tensions in diffuse ways of knowing, research ethics with respect to Indigenous traditional knowledge, and working with knowledge holders. 
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies. 
Seminar three hours per week.

INDG 3901 [0.5 credit]
**Selected Topics in Indigenous Studies**
Topics vary from year to year. 
Prerequisite(s): third- or fourth-year standing, or permission of the School of Indigenous and Canadian Studies. 
Seminar three hours per week.

INDG 4001 [0.5 credit]
**Indigeneity in the City**
This course begins with an examination of the relationship between Indigenous peoples and the construction of cities and urban space. Culminates in the undertaking of research projects that directly link students to the urban Indigenous community in Ottawa. 
Includes: Experiential Learning Activity 
Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies. 
Seminar three hours per week.

INDG 4011 [0.5 credit]
**Indigenous Representations**
Through an examination of instances of Indigenous misrepresentation, students will explore how Indigenous peoples have used cultural production in various forms (such as literature, film, television, visual arts, music, performance) to put forth their own visions of their peoples, worldviews, and lives. 
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies. 
Seminar three hours a week.

INDG 4015 [0.5 credit]
**Land as a Relation**
This is an intensive 14-day field course that brings students together with knowledge holders on the land. The connections between Indigenous ways of knowing, the land, Indigenous languages, and the land’s non-human inhabitants, will be explored. Locations and course fee varies by year. 
Includes: Experiential Learning Activity 
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies. 
Fourteen-day field course.
INDG 4020 [0.5 credit]
Practicum
Students will learn to apply their knowledge of topics in Indigenous Studies with a local organization whose mandate involves working with and/or for Indigenous peoples. To be arranged in consultation with the Program Coordinator.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

INDG 4901 [0.5 credit]
Selected Topics in Indigenous Studies
Topics vary from year to year.
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours per week.

INDG 4905 [0.5 credit]
Directed Studies I
An optional course normally restricted to fourth-year Honours students in Canadian Studies or Indigenous Studies and to Qualifying-year Graduate students.
Includes supervised reading and written work in an Indigenous Studies area.
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Industrial Design

This section presents the requirements for programs in:
• Industrial Design B.I.D.
• Minor in Design

Program Requirements

Industrial Design
B.I.D. (20.0 credits)

First Year
1. 5.0 credits in:
   IDES 1000 [0.5] Theory and History of Design
   IDES 1001 [0.5] Industrial Design Analysis
   IDES 1300 [0.5] Projects IA
   IDES 1301 [0.5] Projects IB
   ECON 1001 [0.5] Introduction to Microeconomics
   ECON 1002 [0.5] Introduction to Macroeconomics
   MATH 1107 [0.5] Linear Algebra I
   PSYC 1001 [0.5] Introduction to Psychology I
   PSYC 1002 [0.5] Introduction to Psychology II
   PHYS 1007 [0.5] Elementary University Physics I

Second Year
2. 4.0 credits in:
   IDES 2101 [0.5] Design for Manufacturing A
   IDES 2102 [0.5] Design for Manufacturing B
   IDES 2105 [0.5] Computer Applications
   IDES 2205 [0.5] Sensory Aspects of Design for User Experience
   IDES 2300 [0.5] Projects IIA
   IDES 2302 [0.5] Projects IIB
   IDES 2600 [0.5] Human Factors/Ergonomics in Design
   PSYC 3702 [0.5] Perception
3. 1.0 credit in free electives
4. 2.0 credits in:
   IDES 3310 [0.5] Projects IIIA
   IDES 3302 [0.5] Projects IIIB
   IDES 3502 [0.5] Contextual Nature of Products
   IDES 3601 [0.5] Research for Design
5. 0.5 credit in:
   BUSI 2204 [0.5] Basic Marketing
6. 1.0 credit in free electives at the 2000-level or above
7. 1.5 credits from:
   IDES 3107 [0.5] Design and Sustainability
   IDES 3104 [0.5] Exhibition Design
   IDES 3105 [0.5] Visual Communication and Package Design
   IDES 3106 [0.5] Advanced Computer Applications
   IDES 3202 [0.5] Advanced Studies in Form and Colour
   IDES 3305 [0.5] Special Studies
   IDES 3306 [0.5] Special Studies

Fourth Year
8. 3.5 credits in:
   IDES 4001 [0.5] Industrial Design Seminar
   IDES 4002 [0.5] Professional Practice
   IDES 4301 [0.5] Minor Projects
   IDES 4310 [1.5] Capstone Project
   IDES 4400 [0.5] Internship Field Report
9. 1.5 credits in free electives at the 3000-level or above

Total Credits 20.0

Notes:
1. Fourth-year students are required to register in IDES 4301 and IDES 4310 in the same academic year.
2. One successfully completed Industrial Design Co-op work term between the third and fourth year of study is equivalent to IDES 4400.
3. The electives chosen should serve to deepen the student's understanding of fields related to Industrial Design or disciplines that are relevant for industrial designers.

Minor in Design (4.0 credits)
This minor is open to all undergraduate degree students not in the Industrial Design program. Only students pursuing undergraduate programs requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 7.00 may be admitted to the Minor in Design.

1. 1.5 credits in:
   IDES 1000 [0.5] Theory and History of Design
   IDES 1001 [0.5] Industrial Design Analysis
   IDES 2205 [0.5] Sensory Aspects of Design for User Experience
2. 2.5 credits from:
The following evaluation criteria apply:
1. students are subject to an evaluation at the end of the winter term if they have completed 4.0 credits since admission or since the preceding evaluation;
2. in addition, students will receive an evaluation of their Industrial Design Core courses at the end of each Winter term as long as they have completed a Core course in the preceding summer, fall or winter terms.

**INDUSTRIAL DESIGN CORE COURSES**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
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<td>Visual Communication and Package Design</td>
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<td>Design and Sustainability</td>
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<td>Contextual Nature of Products</td>
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<td>IDES 3601 [0.5]</td>
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<td>Research for Design</td>
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<td>IDES 4001 [0.5]</td>
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<td>Industrial Design Seminar</td>
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<td>IDES 4101 [0.5]</td>
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<td>Adv. Studies in Manufacturing</td>
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<td>IDES 4200 [0.5]</td>
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3. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

**Regulations**

The regulations presented in this section apply to all students in the Bachelor of Industrial Design program. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**Year Status and General Prerequisites**

In the Bachelor of Industrial Design degree program, year status is defined as follows:

1st year: Admission to the program.

2nd year: Successful completion of IDES 1001, IDES 1301 and must not be deficient in any more than one of the other first year courses.

3rd year: Successful completion of IDES 2302 and all first and second year course requirements.

4th year: Successful completion of IDES 3302 and all third year course requirements.

**Prerequisites**

The following broad course prerequisites specify requirements for access to upper year project courses:

- Registration in IDES 2300 Projects IIA normally requires successful completion of IDES 1001, IDES 1301 and must not be deficient in any more than one of the other first-year courses.

- Registration in IDES 4310 [1.5] Capstone Project normally requires successful completion of all third-year course requirements.

**Academic Performance Evaluation for Bachelor of Industrial Design**

1. Students in the Bachelor of Industrial Design degree are assessed at each Academic Performance Evaluation using their Overall CGPA and the Industrial Design Core courses. (The Industrial Design program does not distinguish a set of courses forming a Major).
f. have not completed the program within seven years.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job.

It is the student’s responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.
Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Industrial Design: Co-op Admission and Continuation Requirements
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to:
1. Registered as a full-time student in the Industrial Design program
2. Obtained a CGPA of 8.00 or higher in industrial design core courses and an overall CGPA of 6.50 or higher

Students in the Bachelor of Industrial Design must complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: IDES 3999
Work-Study Pattern:

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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree
- Bachelor of Industrial Design (B.I.D.)

Admission Requirements
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and Physics. Calculus and Vectors, Design Technology and Visual Arts are strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Note: candidates must present a portfolio of any kind of work that could demonstrate creativity and aptitude for the study of industrial design. Attending an information session at the School is recommended.
Advanced Standing
Applications for admission to second or subsequent years will be assessed on their merits and on space availability in the program. Advanced standing will be granted only for those courses that are determined to be appropriate and is subject to space availability.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Industrial Design program;
3. be eligible for work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Industrial Design (IDES) Courses
IDES 1000 [0.5 credit]
Theory and History of Design
The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes.

Includes: Experiential Learning Activity
Prerequisite(s): IDES 1000. May be taken concurrently.
Lectures three hours a week.

IDES 1001 [0.5 credit]
Industrial Design Analysis
Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment.

Includes: Experiential Learning Activity
Also listed as ARCH 2006.
Lectures three hours a week.

IDES 1300 [0.5 credit]
Projects IA
An introduction to the skills and processes of industrial design including drawing and sketching as an aid to design, basics of line, shape, ideation, and visualization, product drawing, presentation techniques, basic model making, studio equipment and practices, introduction to the design process.

Includes: Experiential Learning Activity
Prerequisite(s): IDES 1000 (may be taken concurrently).
Studio and lectures six hours a week.

IDES 1301 [0.5 credit]
Projects IB
Aspects of industrial design theory and practice, specifically those dealing with principles of product development, fundamentals of form and colour and case studies. Students will explore the design process with emphasis on creative problem-solving techniques and visual communication in design.

Includes: Experiential Learning Activity
Prerequisite(s): IDES 1300.
Studio and lectures six hours a week.

IDES 2101 [0.5 credit]
Design for Manufacturing A
Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. Influences and role of assembly, finishing, production tooling, and costing.

Includes: Experiential Learning Activity
Prerequisite(s): IDES 1001, IDES 1301.
Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2102 [0.5 credit]
Design for Manufacturing B
Continuation of IDES 2101. Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. The influences and role of assembly, finishing, production tooling, costing are addressed.

Includes: Experiential Learning Activity
Prerequisite(s): IDES 2101 or permission of the School of Industrial Design.
Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2105 [0.5 credit]
Computer Applications
Provides industrial design students with a working knowledge of design related 3D computer applications, as well as graphic manipulation and illustration software. Labs and projects are oriented towards building a foundation in software and group work skills for studio courses.

Includes: Experiential Learning Activity
Prerequisite(s): IDES 1301.
Lecture and tutorials three hours a week.
IDES 2205 [0.5 credit]
Sensory Aspects of Design for User Experience
An exploration of multi-sensory qualities derived from and
designed into products to optimize product-interaction
experiences. Visual, tactile, auditory, and other related
sensory aspects of design and design principles that
contribute to the product multi-sensory characteristics
while adding meaning and emotional value.
Includes: Experiential Learning Activity
Precludes additional credit for IDES 2203 (no longer
offered).
Prerequisite(s): IDES 1001 or permission of the School of
Industrial Design.
Lectures and tutorials three hours a week.

IDES 2300 [0.5 credit]
Projects IIA
Principles of design sketching used in the industrial
design process. Topics include: sketching as a tool for
problem definition; idea exploration and form development;
rendering techniques and the communication of design
concepts; basic physical prototyping and modeling-making
techniques.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1001 and IDES 1301, or permission
of the School of Industrial Design.
Studio and lectures six hours a week.

IDES 2302 [0.5 credit]
Projects IIB
Introduction to the design principles associated with
adapting products to an existing product semantic.
Topics covered: principles of design, product semantics,
design analysis, design synthesis, design evaluation, and
modeling techniques. The design project(s) explore some
or all of the design principles covered in the lectures.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2300 or permission of the School of
Industrial Design.
Studio and lectures six hours a week.

IDES 2600 [0.5 credit]
Human Factors/Ergonomics in Design
Foundation course in human factors/ergonomics providing
an overview of physical and cognitive considerations in
product design and related design fields. Anthropometrics,
biomechanical considerations, cognition, social interaction,
and emotional interaction are introduced in relation
to supporting user experience, health and safety,
performance and productivity.
Includes: Experiential Learning Activity
Prerequisite(s): PSYC 1001 and PSYC 1002, or PSYC
1000.
Lectures and discussion three hours a week.

IDES 3104 [0.5 credit]
Exhibition Design
Exhibition design is explored through lectures, case
studies, field trips and guest lectures. Students participate
in exercises and apply design skills to a variety of
exhibition design realms. Introduces students to the
potential of the built environment for exploring a range of
diverse exhibit applications.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1301 or permission of the School of
Industrial Design.
Lectures and tutorials three hours a week.

IDES 3105 [0.5 credit]
Visual Communication and Package Design
A survey of visual communication and package design
principles relevant to industrial designers. Product/brand
definition and corporate identity through package design.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1301 or permission of the School of
Industrial Design.
Lectures and tutorials three hours a week.

IDES 3106 [0.5 credit]
Advanced Computer Applications
Examination of complex product geometry utilizing 3D
crcomputer applications. Topics include spline, surface
and solids construction, surface verification tools, and
rendering tools and techniques. Workflow, robust design,
reverse design techniques and 3D printing will be explored
through exercises.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2105.
Lecture and tutorials three hours a week.

IDES 3107 [0.5 credit]
Design and Sustainability
Explores the industrial designer's role in creating more
environmentally and socially responsible products.
Addresses imperatives and drivers for integrating
sustainability into products. Includes: sustainable design
strategies, strategies and tools, sustainable design
business case, circular economy model for designed
products, and case studies.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1301 or permission of the School of
Industrial Design.
Lectures and tutorials three hours a week.

IDES 3202 [0.5 credit]
Advanced Studies in Form and Colour
Students may continue the research and study
encountered in IDES 2205, IDES 2300 and IDES 2302 by
doing advanced research in the phenomena of form and/
or colour and their communicative functions in products.
Directed Study.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2302 or permission of the School of
Industrial Design.
Lecture and tutorials three hours a week.
IDES 3302 [0.5 credit]
Projects IIIB
Introduction to the principles of innovation as found in industrial design. Invention, innovation, entrepreneurship, basic mechanisms. The design project(s) explore some or all of the design principles covered in the lectures. Includes: Experiential Learning Activity
Precludes additional credit for IDES 3301 (no longer offered).
Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.
Studio and lectures six hours a week.

IDES 3305 [0.5 credit]
Special Studies
Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves.
Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.
Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 3306 [0.5 credit]
Special Studies
Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves.
Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.
Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 3310 [0.5 credit]
Projects IIIA
Introduction to the design principles associated with the evaluation and re-design of an existing product. Topics include: user/machine relationship, component packaging, and manufacturability. The design project(s) explore some or all of the design principles covered in the lectures. Includes: Experiential Learning Activity
Precludes additional credit for IDES 3300 (no longer offered).
Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.
Studio and lectures twelve hours a week.

IDES 3502 [0.5 credit]
Contextual Nature of Products
Cultural subjects which have an influence on contemporary industrial design. The perspective of the course is anthropological: the context and cultural relevance of industrial design.
Prerequisite(s): IDES 1000 (ARCH 2006).
Lectures and tutorials three hours a week.

IDES 3601 [0.5 credit]
Research for Design
Basic design research techniques to foster design exploration. Methods focus on understanding context and user experience to produce meaningful, actionable insights and design opportunities. Processes include qualitative and quantitative research, as well as creative and evaluative research with people. Teamwork and collaboration are explored.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2600.
Lectures or laboratory three hours a week.

IDES 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

IDES 4001 [0.5 credit]
Industrial Design Seminar
Topics vary yearly and address key contemporary industrial design issues. There is a focus on writing, discussion, and debate. Students organize a seminar with design professionals and other community experts including student and professional presentations, interaction, and discussion.
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Seminar three hours a week.

IDES 4002 [0.5 credit]
Professional Practice
The organizational aspects of consultancies and client responsibilities within the framework of corporate management. Topics include: the form of contracts for consultancy, determination of fees, legal implications, patents and copyrights. Guest lecturers.
Precludes additional credit for IDES 3503 (no longer offered).
Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.
Lectures and discussion three hours a week.

IDES 4101 [0.5 credit]
Adv. Studies in Manufacturing
Advanced manufacturing concepts and workflows are examined through a series of workshops and minor projects utilizing state-of-the-art equipment.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2101 and IDES 2102.
Lectures or laboratory three hours a week.

IDES 4200 [0.5 credit]
Form Organization
Using form organization as a tool to design, the definition and prescription of monolithic solids by means of an abstract system; making and verifying materialized approximations of such solids.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2300 and IDES 2302 or permission of the School of Industrial Design.
Lectures, tutorials and laboratory six hours a week.
IDES 4301 [0.5 credit]
Minor Projects
Advanced skills-based course that enhances student experience in novel, experimental processes and techniques in design. Workshop-style activities and short projects focus on increasing skill competence and versatility in a variety of fields. Emphasis on time management and the ability to work independently. Includes: Experiential Learning Activity
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Studio and lectures six hours a week.

IDES 4305 [0.5 credit]
Special Studies
Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 4306 [0.5 credit]
Special Studies
Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 4310 [1.5 credit]
Capstone Project
Application of design principles in a comprehensive design project. Problem area should be product-oriented and of sufficient complexity. Normally undertaken in consultation with off-campus organizations and/or industry. Supervised by faculty and/or sessional members. Includes: Experiential Learning Activity
Precludes additional credit for IDES 4300 (no longer offered).
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Studio and lectures six hours a week in Fall and twelve hours a week in Winter.

IDES 4400 [0.5 credit]
Internship Field Report
Work experience related to industrial design. Following the internship period, normally 12 weeks, a comprehensive report describing observations and insights will be submitted. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.
Tutorial hours arranged.

Information Technology
This section presents the requirements for programs in:
• Information Resource Management B.I.T.
• Interactive Multimedia and Design B.I.T.
• Interactive Multimedia and Design Animation & Visual Effects Stream B.I.T.
• Interactive Multimedia and Design Game Design/Development Stream B.I.T.
• Interactive Multimedia and Design Web & User Interfaces Stream B.I.T.
• Network Technology B.I.T.
• Optical Systems and Sensors B.I.T.

Program Requirements
Course Categories
• Carleton University Electives
• Algonquin college Electives

Please check the current lists of approved electives on the program web site.

Information Resource Management
B.I.T. (20.0 credits)
A. Credits Included in the Major CGPA (10.0 credits)
1. 2.5 credits in:
   - BIT 1400 [0.5] Introduction to Programming and Problem Solving
   - IRM 1002 [0.5] Reference and Information Services
   - IRM 1005 [0.5] Web Interface Development
   - IRM 1006 [0.5] Subject Analysis and Indexing
   - IRM 1007 [0.5] Cataloguing
   - IRM 1003 [0.5] Scientific and Medical Information
   - IRM 1004 [0.5] Legal Issues in Information Resource Management
   - IRM 1005 [0.5] Data Analysis and Research Methodology
   - IRM 1006 [0.5] Practicum for IRM
   - IRM 1007 [0.5] Metadata for IRM
2. 3.0 credits in:
   - IRM 2008 [0.5] Multimedia Data Management
   - IRM 2400 [0.5] Intermediate Programming
   - IRM 2002 [0.5] Legal and Business Information
   - IRM 2003 [0.5] Classification
   - IRM 2004 [0.5] Information Management and Digital Preservation
   - IRM 2005 [0.5] Advanced Cataloguing
3. 2.5 credits in:
   - IRM 3001 [0.5] Scientific and Medical Information
   - IRM 3003 [0.5] Legal Issues in Information Resource Management
   - IRM 3006 [0.5] Data Analysis and Research Methodology
   - IRM 3007 [0.5] Practicum for IRM
   - IRM 3008 [0.5] Metadata for IRM
4. 2.0 credits in:
   - IRM 4000 [0.5] Library Software
   - IRM 4004 [0.5] Applied Big Data and Artificial Intelligence
   - IRM 4900 [1.0] IRM Capstone Project
B. Credits Not Included in the Major (10.0 credits)
5. 1.5 credits in:
   - IRM 1003 [0.5] Collections management
   - IRM 1004 [0.5] Reader’s Advisory Services
B.I.T. (20.0 credits)
Interactive Multimedia and Design

A. Credits Included in the Major CGPA (11.0 credits)
1. 2.0 credits in:
   - IMD 1001 [0.5] Visual Communication
   - IMD 1002 [0.5] Visual Dynamics
   - IMD 1004 [0.5] Design Processes
   - IMD 1005 [0.5] Web Development
2. 3.0 credits in:
   - BIT 2008 [0.5] Multimedia Data Management
   - BIT 2400 [0.5] Intermediate Programming
   - IMD 2003 [0.5] Audio and Video
   - IMD 2007 [0.5] Intro to 3D Animation
   - IMD 2900 [1.0] Design Studio 1
3. 3.0 credits in:
   - IMD 3004 [0.5] Human Computer Interaction and Design
   - IMD 3005 [0.5] Sensor-Based Interaction
   - IMD 3900 [1.0] Design Studio 2
   - IMD 3901 [1.0] Design Studio 3
4. 1.5 credits from:
   - IMD 4006 [0.5] Advanced Game Design and Development
   - IMD 4008 [0.5] Mobile User Interface Design and Development
   - ITEC 4007 [0.5] Dynamics and Physics-Based Animation
   - ITEC 4009 [0.5] Rigging and Advanced Character Animation
   - ITEC 4010 [0.5] Visual Effects and Compositing
   - ITEC 4011 [0.5] Artificial Intelligence for Digital Media
   - ITEC 4012 [0.5] Web Application Frameworks
   - ITEC 4014 [0.5] User Experience Design and Accessibility

B. Credits Not Included in the Major CGPA (9.0 credits)
6. 2.5 credits in:
   - BIT 1002 [0.5] Marketing in the IT sector
   - BIT 2006 [0.5] Elective
   - BIT 2009 [0.5] Statistics for Technology
   - IMD 2006 [0.5] Introduction to Game Design and Development

A. Credits Not Included in the Major CGPA (9.0 credits)
5. 1.5 credits in:
   - IMD 4901 [1.5] IMD Capstone Project

Notes:
1. Additional requirements: students must complete a Minor in another academic discipline.
2. Language requirement: all students are expected to improve their current French language skill by one credit. Should a student be assessed as fluently bilingual, 1.0 credit of alternate language courses will be accepted. Canadian Aboriginal languages would be encouraged in such cases.

Total Credits 20.0

Interactive Multimedia and Design Animation & Visual Effects Stream
B.I.T. (20.0 credits)

This stream is open to students in the Interactive Multimedia and Design B.I.T. program with 4th year standing.

A. Credits Included in the Major CGPA (11.0 credits)
1. 2.0 credits in:
   - IMD 1001 [0.5] Visual Communication
   - IMD 1002 [0.5] Visual Dynamics
   - IMD 1004 [0.5] Design Processes
   - IMD 1005 [0.5] Web Development
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<thead>
<tr>
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<tbody>
<tr>
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<tr>
<td>ITEC 4007</td>
<td>Virtual and Augmented Reality</td>
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<td>Photo and Non-Photo-Realistic Rendering</td>
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<tr>
<td>ITEC 4018</td>
<td>GPU Programming and Real-Time Rendering</td>
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<tr>
<td>ITEC 4019</td>
<td>Directing and Cinematography for Digital Storytelling</td>
</tr>
<tr>
<td>ITEC 4020</td>
<td>Environment and Architectural Modelling</td>
</tr>
</tbody>
</table>

### Interactive Multimedia and Design Game Design/Development Stream

**B.I.T. (20.0 credits)**

This stream is open to students in the Interactive Multimedia and Design B.I.T. program with 4th year standing.

**A. Credits Included in the Major CGPA (11.0 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>IMD 1100</td>
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<td>Introduction to Programming and Problem Solving</td>
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**B. Credits Not Included in the Major CGPA (9.0 credits)**

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### Introduction to Interactive Design

- **Introduction to Interactive Design** (2.5 credits)
- **Visual Design** (0.5 credits)
- **User Experience Design** (0.5 credits)
- **Web Development** (0.5 credits)
- **Software Design** (0.5 credits)
- **Game Design** (0.5 credits)
- **3D Computer Graphics** (0.5 credits)
- **Human Computer Interaction** (0.5 credits)
- **Visual Dynamics** (0.5 credits)
- **Visual Communication** (0.5 credits)
- **Digital Audio and Music** (0.5 credits)
- **Digital Design** (0.5 credits)
- **Digital Storytelling** (0.5 credits)
- **Photo and Non-Photo-Realistic Rendering** (0.5 credits)
- **Virtual and Augmented Reality** (0.5 credits)
- **3D Modeling** (0.5 credits)
- **Environment and Architectural Modelling** (0.5 credits)
- **Directing and Cinematography for Digital Media** (0.5 credits)
- **GPU Programming and Real-Time Rendering** (0.5 credits)
- **Rigging and Advanced Character Animation** (0.5 credits)
- **Artificial Intelligence for Digital Media** (0.5 credits)

Total Credits: 20.0
Multimedia and Design B.I.T. program with 4th year

Web & User Interfaces Stream
Interactive Multimedia and Design

A. Credits Included in the Major CGPA (11.0 credits)

1. 2.0 credits in:
   - IMD 1001 [0.5] Visual Communication
   - IMD 1002 [0.5] Visual Dynamics
   - IMD 1004 [0.5] Design Processes
   - IMD 1005 [0.5] Web Development

2. 3.0 credits in:
   - BIT 2008 [0.5] Multimedia Data Management
   - BIT 2400 [0.5] Intermediate Programming
   - IMD 2003 [0.5] Audio and Video
   - IMD 2007 [0.5] Intro to 3D Animation
   - IMD 2900 [1.0] Design Studio 1

3. 3.0 credits in:
   - IMD 3004 [0.5] Human Computer Interaction and Design
   - IMD 3005 [0.5] Sensor-Based Interaction

B. Credits Not Included in the Major CGPA (9.0 credits)

1. 2.5 credits in:
   - BIT 2002 [0.5] Marketing in the IT sector
   - BIT 2006 [0.5] Elective
   - BIT 2009 [0.5] Statistics for Technology
   - IMD 2006 [0.5] Introduction to Game Design and Development

2. 1.5 credits in:
   - IMD 4002 [0.5] Directed Studies
   - IMD 4008 [0.5] Mobile User Interface Design and Development
   - ITRR 4002 [0.5] Network Technology
   - ITEC 4007 [0.5] Immersive Storytelling
   - ITEC 4010 [0.5] Visual Effects and Compositing
   - ITEC 4012 [0.5] Web Application Frameworks
   - ITEC 4014 [0.5] User Experience Design and Accessibility
   - ITEC 4015 [0.5] Digital Audio and Music
   - ITEC 4016 [0.5] Virtual and Augmented Reality
   - ITEC 4017 [0.5] Photo and Non-Photo-Realistic Rendering
   - ITEC 4018 [0.5] GPU Programming and Real-Time Rendering
   - ITEC 4019 [0.5] Directing and Cinematography for Digital Storytelling
   - ITEC 4020 [0.5] Environment and Architectural Modelling

3. 1.5 credits in:
   - IMD 1000 [0.5] Introduction to Interactive Multimedia Design
   - IMD 4901 [1.5] IMD Capstone Project (1.5)

4. 1.5 credits in:
   - IMD 4008 [0.5] Mobile User Interface Design and Development
   - ITEC 4012 [0.5] Web Application Frameworks
   - ITEC 4014 [0.5] User Experience Design and Accessibility

5. 1.5 credits in:
   - IMD 4901 [1.5] IMD Capstone Project (1.5)

6. 1.5 credits in:
   - IMD 4002 [0.5] Directed Studies
   - IMD 4008 [0.5] Mobile User Interface Design and Development
   - ITRR 4002 [0.5] Network Technology
   - ITEC 4007 [0.5] Immersive Storytelling
   - ITEC 4010 [0.5] Visual Effects and Compositing
   - ITEC 4012 [0.5] Web Application Frameworks
   - ITEC 4014 [0.5] User Experience Design and Accessibility
   - ITEC 4015 [0.5] Digital Audio and Music
   - ITEC 4016 [0.5] Virtual and Augmented Reality
   - ITEC 4017 [0.5] Photo and Non-Photo-Realistic Rendering
   - ITEC 4018 [0.5] GPU Programming and Real-Time Rendering
   - ITEC 4019 [0.5] Directing and Cinematography for Digital Storytelling

7. 2.0 credits in:
   - BIT 1002 [0.5] Physics for Information Technology I
   - BIT 1100 [0.5] Mathematics I for IMD
   - BIT 1101 [0.5] Mathematics II for IMD
   - BIT 1400 [0.5] Introduction to Programming and Problem Solving

8. 1.5 credits in:
   - CCPD 3003 [0.5] Communication Skills for IMD
   - IMD 3002 [0.5] 3D Computer Graphics
   - IMD 3006 [0.5] Software Design for Multimedia Applications

9. 0.5 credit in:
   - IMD 4002 [0.5] Directed Studies
   - IMD 4901 [1.5] IMD Capstone Project (1.5)

10. 1.0 credit in Arts and Humanities elective outside the faculties of Business, Science and Engineering.

11. 1.5 credits in electives for IMD, and/or Directed Studies

   - BIT 4000 [0.5] Directed Studies
   - IMD 4008 [0.5] Mobile User Interface Design and Development
   - ITRR 4002 [0.5] Network Technology
   - ITEC 4007 [0.5] Immersive Storytelling
   - ITEC 4010 [0.5] Visual Effects and Compositing
   - ITEC 4012 [0.5] Web Application Frameworks
   - ITEC 4014 [0.5] User Experience Design and Accessibility
   - ITEC 4015 [0.5] Digital Audio and Music
   - ITEC 4016 [0.5] Virtual and Augmented Reality
   - ITEC 4017 [0.5] Photo and Non-Photo-Realistic Rendering
   - ITEC 4018 [0.5] GPU Programming and Real-Time Rendering
   - ITEC 4019 [0.5] Directing and Cinematography for Digital Storytelling
   - ITEC 4020 [0.5] Environment and Architectural Modelling

Total Credits: 20.0

Interactive Multimedia and Design
Web & User Interfaces Stream
B.I.T. (20.0 credits)

This stream is open to students in the Interactive Multimedia and Design B.I.T. program with 4th year standing.

A. Credits Included in the Major CGPA (11.0 credits)

1. 2.0 credits in:
   - IMD 1001 [0.5] Visual Communication
   - IMD 1002 [0.5] Visual Dynamics
   - IMD 1004 [0.5] Design Processes
   - IMD 1005 [0.5] Web Development

2. 3.0 credits in:
   - BIT 2008 [0.5] Multimedia Data Management
   - BIT 2400 [0.5] Intermediate Programming
   - IMD 2003 [0.5] Audio and Video
   - IMD 2007 [0.5] Intro to 3D Animation
   - IMD 2900 [1.0] Design Studio 1

3. 3.0 credits in:
   - IMD 3004 [0.5] Human Computer Interaction and Design
   - IMD 3005 [0.5] Sensor-Based Interaction

IMD 3900 [1.0] Design Studio 2
IMD 3901 [1.0] Design Studio 3

4. 1.5 credits in:
   - IMD 4008 [0.5] Mobile User Interface Design and Development
   - ITEC 4012 [0.5] Web Application Frameworks
   - ITEC 4014 [0.5] User Experience Design and Accessibility

5. 1.5 credits in:
   - IMD 4901 [1.5] IMD Capstone Project (1.5)

6. 2.5 credits in:
   - BIT 1002 [0.5] Physics for Information Technology I
   - BIT 1100 [0.5] Mathematics I for IMD
   - BIT 1101 [0.5] Mathematics II for IMD
   - BIT 1400 [0.5] Introduction to Programming and Problem Solving

7. 2.0 credits in:
   - BIT 2002 [0.5] Marketing in the IT sector
   - BIT 2006 [0.5] Elective
   - BIT 2009 [0.5] Statistics for Technology
   - IMD 2006 [0.5] Introduction to Game Design and Development

8. 1.5 credits in:
   - CCPD 3003 [0.5] Communication Skills for IMD
   - IMD 3002 [0.5] 3D Computer Graphics
   - IMD 3006 [0.5] Software Design for Multimedia Applications

9. 0.5 credit in:
   - IMD 4002 [0.5] Directed Studies
   - IMD 4901 [1.5] IMD Capstone Project (1.5)

10. 1.0 credit in Arts and Humanities elective outside the faculties of Business, Science and Engineering.

11. 1.5 credits in electives for IMD, and/or Directed Studies
Retention of Work (Interactive Multimedia and Design Program Only)

A portfolio represents a record of the student's progress and design experience over the years, and is an indispensable requirement for any future job application. A portfolio is started in first year and continues to expand until graduation. The School, therefore, requires that each student produce reproductions (on a digital storage device, e.g. flash drive) of their work at the end of each term. One copy of the work should be put in the student's portfolio and the other turned in to the instructor for retention in the School's archives. (This facilitates retrospective exhibitions of work, accreditation, publications and any future references for pedagogic purposes.) Original work is the property of the students, but the School retains the right to keep work of merit for up to four years after the date of submission. The School will make every effort to preserve the work in good condition, and will give authorship credit and take care of its proper use.

Network Technology

B.I.T. (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 0.5 credit in:
   - NET 1006 [0.5] Routing and Switching

2. 2.5 credits in:
   - BIT 2400 [0.5] Intermediate Programming
   - NET 2000 [0.5] Intermediate Networking
   - NET 2008 [0.5] DevOps
   - NET 2011 [0.5] Desktop and Server Environments II
   - NET 2012 [0.5] Networking Technologies and Automation

3. 3.0 credits in:
   - NET 3006 [0.5] Network Management and Measurements
   - NET 3007 [0.5] Network Security
   - NET 3008 [0.5] Advanced Network Routing
   - NET 3011 [0.5] Advanced Network Switching
   - NET 3012 [0.5] IP Architectures and Solutions
   - NET 3900 [0.5] Wireless Networks

4. 4.0 credits in:
   - NET 4001 [0.5] Network Simulation
   - NET 4005 [0.5] Networked Applications
   - NET 4007 [0.5] Multimedia Networking
   - NET 4009 [0.5] Troubleshooting IP Networks
   - NET 4010 [0.5] Secure Mobile Networking
   - NET 4011 [0.5] Advanced Topics in Network Security
   - NET 4901 [1.0] NET Capstone Project

B. Credits Not Included in the Major CGPA (10.0 credits)

5. 3.5 credits in:
   - BIT 1000 [0.5] Mathematics I for NET
   - BIT 1001 [0.5] Mathematics II for NET

6. 4.0 credits in:
   - BIT 1006 [0.5] Achieving Success in Changing Environments
   - BIT 1007 [0.5] Physics for NET
   - BIT 1440 [0.5] Introduction to Programming and Problem Solving
   - NET 1001 [0.5] Computer Technology Basics
   - NET 1002 [0.5] Networking Fundamentals

Optical Systems and Sensors

B.I.T. (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 0.5 credits in:
   - OSS 1003 [0.5] Optics/Optical Fibers (Principles)

2. 2.5 credits in:
   - BIT 2400 [0.5] Intermediate Programming
   - OSS 2001 [0.5] Fundamentals of Light Sources
   - OSS 2002 [0.5] Optical Communication Networks I
   - OSS 2003 [0.5] Laser Systems
   - OSS 2008 [0.5] Manufacturing Photonics Components

3. 2.5 credits in:
   - OSS 3000 [0.5] Optical Communication Networks II
   - OSS 3002 [0.5] Design of Optical Components and Systems (0.5)
   - OSS 3003 [0.5] Fundamentals of Electromagnetics
   - OSS 3013 [0.5] Software Design for Optical Systems and Sensors
   - OSS 3014 [0.5] Optical Waves, Waveguides, and Sensors

4. 3.5 credits in:
   - OSS 4001 [0.5] Optoelectronic Devices
   - OSS 4004 [0.5] Medical Imaging and Biosensors
   - OSS 4006 [0.5] Image Processing
   - OSS 4008 [0.5] Remote Sensing
   - OSS 4009 [0.5] Computer Vision
   - OSS 4900 [1.0] OSS Capstone Project

B. Credits Not Included in the Major CGPA (11.0 credits)

5. 4.0 credits in:
The academic regulations governing the B.I.T. are the academic regulations of Carleton University. These regulations are defined in full in the Academic Regulations of the University section of this Calendar and apply to B.I.T. students on both campuses. Within the context of these regulations, B.I.T. is considered to be a non-honours degree with a defined Major CGPA and requires 20.0 credits. Courses with the designations BIT, NET or IMD are not normally transferable to Engineering, Computer Science or other programs at Carleton University.

Students should note that there are significant differences between the academic regulations of Carleton University and Algonquin College; it is the regulations of Carleton University that apply in all cases as related both to course registrations and program rules.

At Carleton University, the chief examination officer of the BIT is the Dean of Engineering and Design. At Algonquin College, grades are approved by the Dean of the respective School.

Graduation
In order to graduate with the Bachelor of Information Technology Degree and the Advanced Diploma of Technology or Advanced Diploma of Applied Arts, the student must:
1. satisfy all requirements for the program of study;
2. be recommended for graduation by Bachelor of Information Technology Academic Council;
3. be approved for graduation by the Senate of Carleton University;
4. be approved for graduation by the Registrar of Algonquin College.

Discipline
The regulations, procedures and sanctions that apply to student discipline on either campus, both concerning Instructional Offences and Offences of Conduct are those of Carleton University and are described in the Carleton University Undergraduate Calendar. However, while students are on Algonquin's campus, they are expected to follow Algonquin's Directives regarding Student Misconduct and Use of Electronic Devices.

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy
Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via
the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.
Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Information Technology: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Obtained and maintained a major CGPA of 8.0;
2. Successfully completed all required first-year courses, and
3. Registered as a full-time student in the Bachelor of Information Technology program

Students in the Bachelor of Information Technology must complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: BIT 3999

Work/Study Pattern:

Interactive Multimedia and Design, Information Resource management, Network Technology, Photonics and Laser Technology

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Legend

S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admission

Degree

- Bachelor of Information Technology (B.I.T.)

The Bachelor of Information Technology is offered jointly with Algonquin College.

Admission Requirements

First Year

To be eligible for admission to the first year of the Bachelor of Information Technology, the applicant must have:
1. The Ontario Secondary School Diploma (OSSD) or equivalent, including a minimum of six 4U or M courses.
2. For Information Resource Management: The six 4U or M courses must include English and one of Advanced Functions or Calculus and Vectors or Mathematics of Data Management.
3. For Multimedia and Design: The six 4U or M courses must include Advanced Functions. In addition, candidates for BIT in Interactive Multimedia and Design must submit a portfolio of any kind of work that demonstrates the applicant's creativity and aptitude in design work.
4. For Network Technology: The six 4U or M courses must include one of Advanced Functions or Calculus and Vectors or Mathematics of Data Management (Calculus and Vectors recommended).
5. For Optical Systems & Sensors: The six 4U or M courses must include Advanced Functions.

Advanced Standing

Applications for Advanced Standing towards the program leading to the Bachelor of Information Technology will be evaluated on an individual basis upon admission to the program. Students may request that additional courses be considered toward Advanced Standing. Such requests may be made only once and must be received by the BIT Joint Council (comprised of instructors from Carleton University and Algonquin College) by August 30 of the year in which the student is admitted to the program. Requests must follow the submission format outlined on the BIT web site.

Only university- and college-level courses in which a student has achieved a grade of C- or higher are eligible to be considered for Advanced Standing.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in one of the streams of the Information Technology degree stated in this section;
3. be eligible for work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the Co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Information Resource Management (IRM) Courses

IRM 1002 [0.5 credit]
**Reference and Information Services**
Introduction to the theory and techniques needed to conduct reference interviews and interpret reference queries. Students learn to select and use general reference sources such as dictionaries, encyclopedias, directories, bibliographies, periodical indexes, almanacs, and handbooks in print, and electronic formats.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1003 [0.5 credit]
**Collections management**
Introduction to the principals of collections management including techniques and procedures for selecting, ordering and receiving library materials, accounting, collection development and automated acquisitions. Students also learn policies and procedures required for circulation, document delivery and interlibrary loans.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1004 [0.5 credit]
**Reader's Advisory Services**
Students become familiar with fiction and non-fiction materials available to various categories of clients and learn how to market them. In addition, students further develop through various assignments their researching, writing, speaking, listening and communication skills.
Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week.

IRM 1005 [0.5 credit]
**Web Interface Development**
Combining graphics, text, audio and video to develop websites on an individual basis and in groups, using latest versions of HyperText Markup Language (HTML), Cascading Style Sheets (CSS), JavaScript and data interchange formats such as Extensible Markup Language (XML) and JavaScript Object Notation (JSON).
Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

IRM 1006 [0.5 credit]
**Subject Analysis and Indexing**
Students learn the basic theory of subject analysis and indexing methods used to provide access to library materials and literature. Practical instruction makes use of thesauri, as well as standard subject heading lists, such as Sears and Library of Congress.
Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hour a week.

IRM 1007 [0.5 credit]
**Cataloguing**
The catalogue is the main finding aid to the collection of the library. Students learn the basic principles and concepts of international standards used to describe library materials. In-class exercises, lectures and practical experience help students apply these cataloguing standards.
Includes: Experiential Learning Activity
Precludes additional credit for IRM 1001 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. program.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1008 [0.5 credit]
**Introduction to Information Resource Management**
Students develop understanding of the concepts of information retrieval, creation, evaluation, organization and client service. Knowledge of legal and ethical implications of information and current trends in the field is studied. Through in-class lectures and hands-on activities, students gain an overview of the field.
Precludes additional credit for IRM 1000 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week.
IRM 2002 [0.5 credit]
Legal and Business Information
Students develop skills in planning and executing information searches and evaluating print and electronic resources. Students learn to locate information on selected topics, compile subject-specific annotated bibliographies and instruct library clients in the use of specialized materials and databases.
Includes: Experiential Learning Activity
Prerequisite(s): IRM 1002.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 2003 [0.5 credit]
Classification
How to interpret and apply Dewey Decimal and Library of Congress Classification systems. Also includes analysis of the subject content of materials, building notation, using tables, shelf-listing techniques and creating unique book numbers.
Includes: Experiential Learning Activity
Prerequisite(s): IRM 1006.
Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 2004 [0.5 credit]
Information Management and Digital Preservation
Essentials of information management in an organization including the life cycle management of files in paper and the electronic environment. This course will also cover contemporary issues in information management and digital preservation.
Includes: Experiential Learning Activity
Prerequisite(s): IRM 1008.
Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 2005 [0.5 credit]
Advanced Cataloguing
Libraries purchase and provide access to a wide variety of print and electronic resources. Building on work done in IRM 1007, students learn to interpret international cataloguing standards to describe more complex materials. In-class exercises, lectures and practical experience help students apply these cataloguing standards.
Includes: Experiential Learning Activity
Precludes additional credit for IRM 2001.
Prerequisite(s): IRM 1007.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3001 [0.5 credit]
Scientific and Medical Information
Students enhance their knowledge of print and electronic reference sources in science and technology. Students learn to compile specialized subject-specific bibliographies and assignments provide training in the use of science and technology reference sources.
Includes: Experiential Learning Activity
Prerequisite(s): IRM 2002.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3003 [0.5 credit]
Legal Issues in Information Resource Management
In-depth analysis and assessment of copyright and other forms of intellectual property. Legal issues related to information technology. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, Charter and human rights issues, and security.
Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week.

IRM 3004 [0.5 credit]
Project management
Identification, selection, initiation, and organization of projects. Risk assessment, budget issues, communication, project scheduling, performance monitoring and control. Emphasis on practical techniques related to the field of information management using case studies.
Includes: Experiential Learning Activity
Prerequisite(s): third year standing in the Information resource management program.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3006 [0.5 credit]
Data Analysis and Research Methodology
Introduction to the logic and design of research. Qualitative and quantitative research methodology with emphasis on the application and interpretation of statistical techniques for data analysis. These may include, but are not limited to, bivariate and multivariate analysis, distribution analysis, visual data analysis, market basket analysis.
Includes: Experiential Learning Activity
Precludes additional credit for IRM 3002 (no longer offered).
Prerequisite(s): BIT 2000.
Lectures three hours a week.
IRM 3007 [0.5 credit]
Practicum for IRM
Students will design and complete a project related to information management under the supervision of a faculty member or librarian. This course provides the opportunity to apply knowledge gained in previous courses.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the Information resource management program.
Tutorial/laboratory eight hours a week.

IRM 3008 [0.5 credit]
Metadata for IRM
Students develop an understanding of key metadata schema and apply standards to describe range of digital resources. The metadata schemes include focus on Dublin Core (DC) and MODS with select coverage of specialist schema. Through in-class lectures and hands-on activities, students apply metadata schemes.
Includes: Experiential Learning Activity
Prerequisite(s): no longer offered.
Prerequisite(s): IRM 2005.
Lectures two hours a week, tutorial/labouratory two hours a week.

IRM 4000 [0.5 credit]
Library Software
Using skills and knowledge of automated systems already developed in introductory courses, students learn the theory and receive the hands-on practice needed to use library databases. A component on choosing and comparing library software is included.
Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 4001 [0.5 credit]
Archives and Special Collections
Principles and methods used by archivists and record managers in organizing their collections for better access and retrieval. Students also learn aspects of physical bibliography, the book trade, preservation and conservation of books and how to exhibit such material.
Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week.

IRM 4002 [0.5 credit]
Network Technology
Foundation knowledge for computer networks and communications. Topics include basic network design, layered communications models, IP addressing and subnets, and industry standards for networking media and protocols, with an emphasis on TCP/IP protocol suite and Ethernet environments.
Includes: Experiential Learning Activity
Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 4004 [0.5 credit]
Applied Big Data and Artificial Intelligence
Introduction to applied Big Data, Machine Learning and Artificial Intelligence. Topics include: Association Rule Mining, Classification, Clustering, Regression, basics of Artificial Neural Networks, Hadoop Distributed File System, and related technologies. Applications on other domains like networks, finance, and/or business.
Includes: Experiential Learning Activity
Prerequisite(s): IRM 3006.
Lectures three hours a week.

IRM 4900 [1.0 credit]
IRM Capstone Project
Student-initiated project developed in association with a project supervisor and external information resource management advisor. Project is supported by a written report, seminar discussions and final presentation. All proposals must be approved by the IRM Program Project Committee.
Includes: Experiential Learning Activity
Prerequisite(s): IRM 3004, IRM 3007 or LIB 2030 and LIB 2047 and fourth year standing in the IRM program.
Tutorial hours arranged.

Information Technology (BIT) Courses
BIT 1000 [0.5 credit]
Mathematics I for NET
Tailored for students in the Network Technology program, this course covers basic concepts in functions (polynomials, exponential, logarithmic) and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 1100, BIT 1200, ECON 1401, ECON 1402, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401, MATH 1402.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/labouratory one hour a week.

BIT 1001 [0.5 credit]
Mathematics II for NET
Tailored for students in the Network Technology program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 1101, BIT 1201, ECON 1401, ECON 1402, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401, MATH 1402.
Prerequisite(s): BIT 1000.
Lectures three hours a week, tutorial and laboratory one hour a week.
BIT 1002 [0.5 credit]
Physics for Information Technology I
An introductory course on energy, thermodynamics, sound and electromagnetic waves, optics, and modern physics. Practical skills are learned in the laboratory, which is a required part of the course.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1203, PHYS 1001, PHYS 1003, PHYS 1007.
Prerequisite(s): BIT 1100.
Lectures three hours a week, tutorial three hours/ laboratory three hours alternate weeks.

BIT 1006 [0.5 credit]
Achieving Success in Changing Environments
Students explore the possibilities ahead, assess their own aptitudes and strengths, and apply critical thinking and decision-making tools to help resolve some of the important issues in our complex society with its competing interests.
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week.

BIT 1007 [0.5 credit]
Physics for NET
An introductory course on energy, electrical networks (AC and DC circuits, resistance, impedance, capacitance), electrostatics (electric fields, static electricity), electromagnetism, electromagnetic waves, optics, and other topics in modern physics. Practical skills are learned in the laboratory, which is a required part of the course.
Precludes additional credit for BIT 1203 (no longer offered), BIT 1204, PHYS 1002, PHYS 1004, PHYS 1008.
Prerequisite(s): BIT 1000, Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial three hours/ laboratory three hours alternate weeks.

BIT 1100 [0.5 credit]
Mathematics I for IMD
Tailored for students in the Interactive MultiMedia Design program, this course covers basic concepts in functions (polynomials, exponential, logarithmic) and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1000, BIT 1200, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401/ECON 1401, MATH 1402/ECON 1402.
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions; or MATH 0005 and MATH 0006; or equivalent. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1101 [0.5 credit]
Mathematics II for IMD
Tailored for students in the Interactive MultiMedia Design program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1001, BIT 1201, ECON 1401, ECON 1402, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401, MATH 1402.
Prerequisite(s): BIT 1100.
Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1200 [0.5 credit]
Calculus
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1000, BIT 1100, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401/ECON 1401, MATH 1402/ECON 1402.
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005 and MATH 0006; or equivalent. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1201 [0.5 credit]
Linear Algebra
Systems of linear equations; vector space of n-tuples, subspaces and bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product. Complex numbers (including de Moivre's Theorem, and n-th roots). Eigenvalues, diagonalization and applications. Note: MATH 1119 is not an acceptable substitute for BIT 1201.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1001, BIT 1101, MATH 1102, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401/ECON 1401, MATH 1402/ECON 1402.
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial and laboratory one hour a week.
BIT 1203 [0.5 credit]
Newtonian Physics
Mechanics, properties of matter, thermodynamics.
Applications chosen in part from the life sciences.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1002, PHYS 1001, PHYS 1003, PHYS 1007.
Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent; or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or MATH 1007 or BIT 1200 (may be taken concurrently); or (iii) permission of the Department. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1204 [0.5 credit]
Electromagnetism & Modern Physics
Electricity and magnetism, DC and AC circuits, wave motion and light. Elements of modern physics. Applications chosen in part from the life sciences.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, PHYS 1002, PHYS 1004, PHYS 1008.
Prerequisite(s): BIT 1203 or PHYS 1001 or PHYS 1003 or PHYS 1007 or permission of the Department. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1400 [0.5 credit]
Introduction to Programming and Problem Solving
Introduction to basic concepts of procedural programming and algorithm design in C. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, structures, arrays, pointers, debugging, algorithmic thinking and pseudocode, computer architecture, operating systems, and libraries.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 1005, COMP 1405, ITEC 1400, ITEC 1401.
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory three hours a week.

BIT 2000 [0.5 credit]
Introduction to Statistics
This course covers data analysis, introduction to probability theory, some standard discrete and continuous distributions and their application to interval estimation and significance testing, computational aspects of statistics.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606, and STAT 3502.
Prerequisite(s): restricted to students in the BIT degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2001 [0.5 credit]
Introduction to Business
An overview of the most fundamental business functions. The management of people, human resources, marketing, accounting and finances, business law and operations.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week.

BIT 2002 [0.5 credit]
Marketing in the IT sector
Basic problems and practices in marketing. Marketing strategies, planning, packaging, branding and promotion at the level of the individual firm; distribution channels.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 2204.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week.

BIT 2006 [0.5 credit]
Elective
Students must choose from among a list of approved Electives at Algonquin College.
Precludes additional credit for BIT 3003 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, or as arranged.

BIT 2008 [0.5 credit]
Multimedia Data Management
Concepts and fundamentals of database systems. Design of relational databases, normalisation, referential integrity, structured query language (SQL), server-side scripting, organisation of multimedia content, dynamic page loading, storage and compression of media, media network considerations, digital watermarking and rights management.
Includes: Experiential Learning Activity
Precludes additional credit for ITEC 2000, IMD 2000 (no longer offered), IRM 2000 (no longer offered).
Prerequisite(s): BIT 1400 and IMD 1005 or IRM 1005.
Lecture three hours a week, tutorial/laboratory two hours a week.
BIT 2009 [0.5 credit]
Statistics for Technology
This course covers statistical data analysis with an emphasis on hypothesis testing including parametric tests (e.g., t-tests, ANOVA) and non-parametric tests (e.g., Kruskal-Wallis, Friedman, chi-square), correlation and linear regression. Provides an introduction to probability theory and distributions (e.g. binomial, normal).
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2000, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606, and STAT 3502.
Prerequisite(s): Restricted to students in the BIT degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2010 [0.5 credit]
Differential Equations & Multivariate Calculus
Prerequisite(s): BIT 1200.
Lectures three hours a week, tutorial one hour a week.

BIT 2400 [0.5 credit]
Intermediate Programming
Introduction to object-oriented programming and algorithm design in C++. Topics include code and data encapsulation using classes and objects, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists and searching.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 1006, COMP 1406, ITEC 2400, ITEC 2401.
Prerequisite(s): BIT 1400. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory three hours a week.

BIT 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

BIT 4000 [0.5 credit]
Directed Studies
Independent study under the supervision of a member of the School of Information Technology, open only to students in the B.I.T. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to one such course in their program.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School of Information Technology.

BIT 4001 [0.5 credit]
Selected Topics in Information Technology
Topics not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.
Prerequisite(s): third-year standing in the BIT Program or permission of the department.
Lecture three hours a week.

Interactive Multimedia and Design (IMD) Courses

IMD 1000 [0.5 credit]
Introduction to Interactive Multimedia Design
Overview of interactive multimedia design including copyright, user-centred design, web design and mark-up languages, general logic design, multimedia project management, design processes for animated film, video game development, visual effects in movies, ethics and current trends in the field.
Includes: Experiential Learning Activity
Precludes additional credit for ITEC 1100.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lecture three hours a week.

IMD 1001 [0.5 credit]
Visual Communication
Visual communication techniques commonly used to draft concepts and ideas to support scripts for film, animation, HCI, and/or game development. Topics include: storyboarding, composition, vanishing point, line quality, visual timing, perspective, depth of field, body language and life drawing. A digital drawing tablet is required.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 1000 and IMD 1002.
Workshop three hours a week.

IMD 1002 [0.5 credit]
Visual Dynamics
Fundamentals of composition with emphasis on realistic rendering. Students learn how to execute thumbnails and design comprehensives. Topics include illustration, type, colour, texture, proximity and unity, alignment, repetition and continuity, contrast, size relationships, balance, rhythm, negative space, cropping and view selection.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Workshop three hours a week.
IMD 1004 [0.5 credit]
Design Processes
Design fundamentals using industry standard software techniques and workflow are explored. Topics include: gestalt principles, grids systems, colour, texture, raster and vector image production, and typography. Students design for publication to output such as Web, print, and electronic book formats. Required digital drawing tablet.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Workshop three hours a week.

IMD 1005 [0.5 credit]
Web Development
Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid xHTML, cascading style sheets (CSS), JavaScript and XML structures.
Includes: Experiential Learning Activity
Precludes additional credit for ITEC 1005.
Prerequisite(s): IMD 1000 and IMD 1004.
Workshop five hours a week.

IMD 2003 [0.5 credit]
Audio and Video
The creation, production and editing of audio and video for multimedia applications. Topics include single camera recording and capture techniques through to post-production editing. Emphasis is placed on production and operation skills while adhering to industry standard costs and deadlines.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 1000 and IMD 1002.
Workshop four hours a week.

IMD 2006 [0.5 credit]
Introduction to Game Design and Development
Basic concepts in the design and development of computer games, including: fundamentals of production cycle, genres, gameplay and game mechanics, story and character development, level design, artificial intelligence for games, game user interface, and common development tools.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2400 and second-year standing in the IMD program.
Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 2900 [1.0 credit]
Design Studio 1
Advanced practical studio-based sessions in project management and web development. Topics include: project management styles, team collaboration techniques, prototyping, project and content management, marketing, testing, and product evaluation culminating into a major group web project using client-side and server-side technologies.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the IMD program.
Studio/lecture eight hours a week.

IMD 3002 [0.5 credit]
3D Computer Graphics
Technical aspects of 3D computer graphics. Homogeneous transformations, viewing pipeline, cinematography, modeling techniques (explicit and implicit), scene composition, level of detail methods, advanced lighting techniques (BRDF, IBL, subsurface-scattering), 2D/3D texturing, local/global illumination, rendering methods, and shaders.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 1101, BIT 2400 and IMD 3900.
Lectures three hours a week, tutorial/laboratory two hours per week.

IMD 3004 [0.5 credit]
Human Computer Interaction and Design
Introduction to concepts centered on Human-Computer Interaction from hardware and software perspectives. Topics include design principles, usability principles and engineering, solving user-centred problems, device interaction, and graphical user interface design (2D and 3D interfaces).
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2009 and third-year standing in the IMD program.
Lecture three hours a week, tutorial/laboratory two hours a week.
IMD 3005 [0.5 credit]
Sensor-Based Interaction
Development of interactive applications that connect the physical and virtual space. Topics include using external devices and sensor hardware, sensing objects and people, gestural input, computer vision, processing of live audio input, and networked software and devices.
Includes: Experiential Learning Activity
Precludes additional credit for IMD 2001 (no longer offered).
Prerequisite(s): BIT 2400.
Lecture/workshop four hours a week.

IMD 3006 [0.5 credit]
Software Design for Multimedia Applications
Provides students with knowledge and expertise to design and develop complex software systems and programs for common multimedia applications. Topics include: data structures, system and requirement analysis, component identification, common design patterns, and working with reusable components.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2400.
Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 3900 [1.0 credit]
Design Studio 2
Intermediate practical studio sessions covering the creative aspects of 3D graphics and animation. Topics include: environment and character modeling, texturing, using bump/displacement maps, advanced materials, 3D cameras, various lighting, keyframe animation, and rendering methods.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 2007 and third-year standing in the IMD program.
Studio/lecture eight hours a week.

IMD 3901 [1.0 credit]
Design Studio 3
Studio-based course focuses on interdisciplinary group work, and the use of reality-based/natural-based interfaces for multiuser interaction, understanding social and environmental context in physical design, basic networking, advanced sound design, and haptic feedback.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the IMD program, IMD 2900 and IMD 3005.
Studio/lecture eight hours a week.

IMD 4002 [0.5 credit]
Technology and Culture
An examination of the relationship between communication technology and society. The course examines the factors that contribute to changes in the collection, storage and distribution of information and the cultural implications of these changes.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the IMD program.
Seminar three hours a week.

IMD 4005 [0.5 credit]
Advanced Topics in Multimedia
Advanced topics in multimedia industry not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.
Includes: Experiential Learning Activity
Precludes additional credit for IMD 4004 (no longer offered).
Prerequisite(s): fourth-year standing in the IMD program.
Lecture three hours a week.

IMD 4006 [0.5 credit]
Advanced Game Design and Development
Provides students with knowledge and expertise to design and develop professional computer games with advanced and novel features. Topics include: target audience and inclusive/accessible design, interaction design and emerging technologies, artificial intelligence, interactive stories, procedural content generation, serious games and gamification.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 2006 and IMD 3002.
Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4008 [0.5 credit]
Mobile User Interface Design and Development
Design, development, and evaluation of user interfaces for mobile applications. Topics include: user-centered design methods and develop mobile applications employing the various input and output capabilities available on mobiles, e.g., multi-touch, device motion/rotation, video/audio capture, vibration.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 3004 and IMD 3006.
Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4901 [1.5 credit]
IMD Capstone Project
Student-initiated digital media project, under the supervision of a project advisor, consisting of complete end-to-end production, from design to final product. Development will be assessed via design documents, project plans, progress presentations, culminating in a final exposition in front of a panel of industry experts.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 2900, IMD 3004, IMD 3900, IMD 3901 and fourth-year standing in the IMD program.
Tutorial hours arranged.
Network Technology (NET) Courses

NET 1001 [0.5 credit]
Computer Technology Basics
Construction and function of PCs. Introduces technical concepts and terminology relating to system boards, system busses, input/output devices, memory, microprocessors and peripherals. Interaction of software and hardware; data storage; performance issues. Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

NET 1002 [0.5 credit]
Networking Fundamentals
Foundation knowledge for computer networks and communications. Topics include basic network design, layered communications models, IP addressing and subnets, and industry standards for networking media and protocols, with an emphasis on TCP/IP protocol suite and Ethernet environments.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 1006 [0.5 credit]
Routing and Switching
Introduction to routing and switching concepts including, static and dynamic routing, trunking and VLANs. Topics include configuring routers and switches and resolving common configuration and reachability issues.
Includes: Experiential Learning Activity
Precludes additional credit for NET 1005 (no longer offered).
Prerequisite(s): NET 1002.
Lecture three hours a week, tutorial/laboratory three hours a week.

NET 2000 [0.5 credit]
Intermediate Networking
Architecture, components and operations of routers and switches in Enterprise networks. Topics include configuration and troubleshooting of OSPF, including Multi-area, redundancy, NAT and troubleshooting techniques.
Includes: Experiential Learning Activity
Prerequisite(s): NET 1006.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 2007 [0.5 credit]
Basics of Transmission Systems
Introduction to the fundamentals of information transmissions systems used in physical layer of the Internet. Covers time- and frequency-domain concepts, digital and analog transmission, signal encoding, sampling, modulation, demodulation, error detection and correction. Examples: DSL, Cable modem, and wireless LAN.
Includes: Experiential Learning Activity.
Prerequisite(s): BIT 1001 and BIT 1007.
Lectures three hours a week, tutorial/laboratory three hours a week.

NET 2008 [0.5 credit]
DevOps
Exposure to unifying software development (Dev) and software operation (Ops). Use of Python to monitor and automate network management tasks.
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory three hours a week.

NET 2010 [0.5 credit]
Desktop and Server Environments I
Using Linux and Windows Server, study of the basic features such as file system, system utilities, memory management, boot process troubleshooting and UI customizations. Client-Server architecture is examined with a focus on basic Server configuration and administration.
Includes: Experiential Learning Activity.
Precludes additional credit for NET 2002 (no longer offered).
Prerequisite(s): NET 1001.
Lecture two hours a week, tutorial/laboratory two hours a week.

NET 2011 [0.5 credit]
Desktop and Server Environments II
Using Unix and Linux Operating systems, study of the command line and network Server operating environments. Configuring Services and Protocols such as DNS, NTP, SSH, SMB, SMTP, POP3, IMAP, HTTP, and DHCP. Basic Server security using firewalls is also introduced.
Includes: Experiential Learning Activity.
Precludes additional credit for NET 2003 (no longer offered).
Prerequisite(s): NET 2010.
Lecture two hours a week, tutorial/laboratory two hours a week.
NET 2012 [0.5 credit]
Networking Technologies and Automation
Enterprise technologies and QoS mechanisms used for networks access. Topics include virtualization, and automation concepts. Software-defined networking, controller-based architectures and how application programming interfaces (APIs) enable network automation.
Includes: Experiential Learning Activity
Precludes additional credit for NET 2001 (no longer offered).
Prerequisite(s): NET 2000.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 2013 [0.5 credit]
Computer Systems Foundations
Introduction to the design and implementation of digital circuits and microprocessors. Topics include: binary numbers and arithmetic, fundamentals of boolean algebra, combinational circuits, sequential circuits, computer architecture and organization: CPU, cache, memory, input/output, bus structures, interrupts, computer arithmetic, CPU assembly instruction sets.
Includes: Experiential Learning Activity
Precludes additional credit for NET 1004 (no longer offered), PLT 1007 (no longer offered), NET 2009 (no longer offered), OSS 2009.
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory one hour a week.

NET 3000 [0.5 credit]
Database Concepts and SQL
Concepts and fundamentals of relational database systems. Students learn how to design relational databases starting from a conceptual data model, following accepted logical and physical design principles. Topics include normalisation, referential integrity, SQL, DDL and SQL DML &amp; ODBC and data extraction/filtering techniques.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the Networking program.
Lecture two hours a week, tutorial/laboratory two hours a week.

NET 3001 [0.5 credit]
Real-time Systems
Includes: Experiential Learning Activity
Also listed as OSS 3001.
Prerequisite(s): NET 2013.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3004 [0.5 credit]
Data Structures
Includes: Experiential Learning Activity
Also listed as OSS 3004.
Precludes additional credit for PLT 3010 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3006 [0.5 credit]
Network Management and Measurements
Key network management models (FCAPS, TMN), protocols and standards, such as SNMP. Introduction to and use of various management tools and methodologies. Current trends in network management and measurement. Security issues in collecting networking management information.
Includes: Experiential Learning Activity
Prerequisite(s): NET 3000 and NET 3004.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3007 [0.5 credit]
Network Security
Basics of network security. Students are introduced to the goals of IT security, common threats and countermeasures including firewalls, intrusion detection and prevention systems (IDPS) and virtual private networks. Several operating environments will be studied as examples. Also includes a section on computer ethics.
Includes: Experiential Learning Activity
Prerequisite(s): NET 2012.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3008 [0.5 credit]
Advanced Network Routing
Routing IP at the enterprise level, within and between, autonomous systems. Advanced control and optimization of routing protocols and manipulation of traffic paths with multiple routing protocols. Working knowledge of Internet reachability via BGP.
Includes: Experiential Learning Activity
Prerequisite(s): NET 2012.
Lectures three hours a week, tutorial/laboratory three hours a week.
NET 3010 [0.5 credit]
Web Programming
Architectures, protocols and languages used to develop dynamic Web content, including HyperText Markup Language (HTML, DHTML), Universal Resource Identifiers (URI) and HyperText Transport Protocol (HTTP) and Common Gateway Interface (CGI). JavaScript and Java are used to model cross-platform Web programming.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2400, NET 3000.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3011 [0.5 credit]
Advanced Network Switching
Includes: Experiential Learning Activity
Prerequisite(s): NET 2012.
Lectures three hours a week, tutorial/laboratory three hours a week.

NET 3012 [0.5 credit]
IP Architectures and Solutions
An exploration of deployment options that can be implemented atop of a MPLS network. The focus is on technologies and architectures that serve to enhance IP delivery, or IP service leveraging the MPLS infrastructure. Includes Layer 2 and 3 tunneling techniques. Includes: Experiential Learning Activity.
Prerequisite(s): NET 3008.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3900 [0.5 credit]
Wireless Networks
Design and configuration of Wi-Fi networks as used in commercial and enterprise venues. Topics include 802.11 family of protocols, wireless transmission, RF design, security methods and protocols, and system design. Topologies include campus, bridge and remote access.
Includes: Experiential Learning Activity
Prerequisite(s): NET 2007.
Lectures two hours a week, tutorial/laboratory three hours a week.

NET 4000 [0.5 credit]
Emerging Network Technologies
Overview of technologies, protocols and techniques related to Information Technology networking that are either in their early stage of adoption or are not yet mainstream (i.e. beta or prototype stage). Focus will vary from year to year to reflect the evolutionary nature of this domain.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Networking program or permission of the instructor.
Also offered at the graduate level, with different requirements, as ITEC 5110, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4001 [0.5 credit]
Network Simulation
Introduction to discrete event simulation; fundamental stochastic models for networking; queueing theory; deterministic algorithms for networking; confidence intervals; introduction to network modeling. Use of simulation tools to develop and test scenarios including traffic monitoring, congestion, routing protocols, resource utilization and growth planning.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2000.
Also offered at the graduate level, with different requirements, as ITEC 5113, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4003 [0.5 credit]
Computer Systems Architecture
Includes: Experiential Learning Activity
Prerequisite(s): third year standing in the Networking program, NET 2003 and NET 3001.
Lectures three hours a week, tutorial/laboratory one hour a week.

NET 4005 [0.5 credit]
Networked Applications
Architectures for computing in modern data networks that adopt the Internet architecture. Topics covered include socket programming, RPC and RMI. Client-server and peer-to-peer models. Emerging application architectures.
Includes: Experiential Learning Activity
Prerequisite(s): NET 3004 and NET 3010.
Also offered at the graduate level, with different requirements, as ITEC 5114, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory two hours a week.
NET 4007 [0.5 credit]
**Multimedia Networking**
Prerequisite(s): fourth-year standing in Networking program or permission of the instructor.
Also offered at the graduate level, with different requirements, as ITEC 5111, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4009 [0.5 credit]
**Troubleshooting IP Networks**
Integrates planned maintenance and troubleshooting techniques, including, tools, applications and formalized methodologies. Study of issues in focused areas (such as routed vs. switched environments, addressing services, performance, security, VPN), culminating in problem resolution throughout a complex enterprise network. Includes: Experiential Learning Activity
Prerequisite(s): NET 3011, NET 3008.
Lectures three hours a week, tutorial/laboratory three hours a week.

NET 4010 [0.5 credit]
**Secure Mobile Networking**
The concept, principle and rationale of mobile networking. Mobile network architecture, protocols, mobility management, routing and mobile TCP/IP; Security challenges, vulnerabilities and threats in mobile networks; Security defense techniques and countermeasures in mobile networks.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in Networking program or permission of the instructor.
Also offered at the graduate level, with different requirements, as ITEC 5112, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory one hour a week.

NET 4011 [0.5 credit]
**Advanced Topics in Network Security**
Prerequisite(s): NET 3007.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4901 [1.0 credit]
**NET Capstone Project**
This course provides the opportunity to apply knowledge gained in previous courses towards the design and implementation of a major Networking related project. Working in teams or as individuals under the direction of faculty members, students undertake projects internally or in collaboration with industry. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Networking program.
Tutorial hours arranged.

**Optical Systems and Sensors (OSS) Courses**
OSS 1002 [0.5 credit]
**Applications in Photonics & Optoelectronics**
Survey of the history and future of photonics. Photonics benefits and impact on technology and society. Emerging applications of photonics in industry and commercial products. The forces (business, social, political, economic, technical, and educational) that influence the development, adoption and success or failure of technologies.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1002 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 1003 [0.5 credit]
**Optics/Optical Fibers (Principles)**
Principles of optics, optical fiber, waveguides and hands-on experience with optical components. Optical fiber manufacturing and variety of industrial applications. Topics covered include: optical sources, detectors, fiber modes and mode-coupling, couplers, multiplexers, optical amplifiers, physical layer of optical networks, dispersion and nonlinear effects management.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1003 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.
OSS 1005 [0.5 credit]
Introduction to Optics
Physics of waves, optics and light propagation through lectures and lab experiments. Geometrical optics, refraction and reflection, interference, diffraction and polarization, thin lens equation, laser beams, Michelson interferometer, birefringence, and Abbe theory of imaging. Electromagnetic spectrum, quantum nature of light, photons, and photoelectric effect.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1005 (no longer offered).
Prerequisite(s): BIT 1203, restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 1006 [0.5 credit]
Introduction to Automation and Simulation
Introduction to basic programming in both the Matlab and Labview environments. Program development, basic structures (loops, control structures), I/O, data visualization and graphing will be covered. Students will learn to use Labview to develop basic applications and model simple physical systems with Matlab.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1006 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hour a week, tutorial/laboratory two hours a week.

OSS 2001 [0.5 credit]
Fundamentals of Light Sources
Introduction to incoherent light sources and lasers. Lasers operation, energy levels, quantum mechanics basics. Pumping/excitation, population inversion, laser cavity design, gain and loss, and characteristics of laser emission. An extensive lab manual of relevant experiments, variety of lasers, spectrometers, and detection equipment will be used.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2001 (no longer offered).
Prerequisite(s): BIT 1201. Restricted to students in the BIT degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 2002 [0.5 credit]
Optical Communication Networks I
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2002 (no longer offered).
Prerequisite(s): OSS 1003.
Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 2003 [0.5 credit]
Laser Systems
Laser theory, devices and systems. Safety procedures, laser power supplies, and laser system applications. Solid state, gas, and other types of lasers. Basic material processing, micro machining, bio/medical, and military applications will be covered. Hands-on experience with advanced laser equipment in lab.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2003 (no longer offered).
Prerequisite(s): OSS 2001 or PLT 2001 (no longer offered).
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 2005 [0.5 credit]
Circuits and Signals
Students learn properties of electricity and measurement techniques. Topics covered include RMS, average, applied, peak-to-peak and instantaneous values. Lab experiments deal with RC and RL circuits and LC filters. RLC circuits, and series and parallel resonance are also covered.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2005 (no longer offered).
Prerequisite(s): BIT 1204 or PHYS 1004 or PHYS 1002. Restricted to students in the BIT degree program.
Lectures two hours a week, laboratory and problem analysis three hours a week.
OSS 2006 [0.5 credit]
Integrated Circuits
Fundamentals of logic circuitry in digital systems are studied including basic logic gates, Boolean algebra, signal decoding, logic circuit design, flip-flop circuits, timers and counters. The proper use of semi-conductor components is demonstrated through the use of laboratory experiments.
Includes: Experiential Learning Activity
Precludes additional credit for ELEC 2507, PLT 2006 (no longer offered).
Prerequisite(s): OSS 2005 or PLT 2005 (no longer offered). Restricted to students in the B.I.T. degree program.
Lectures two hours a week, laboratory and problem analysis three hours a week.

OSS 2008 [0.5 credit]
Manufacturing Photonics Components
Manufacturing techniques and methods used to produce photonics components and devices/systems. Micro assembly, adhesives, optical tests and measurement, lean manufacturing and quality control standards (Telcordia). Laboratory exposure to optical component production processes: grinding, polishing, coating, mounting, tolerance and accuracy.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1004 and PLT 2008 (no longer offered).
Prerequisite(s): OSS 1002 or PLT 1002 (no longer offered). Restricted to students in the B.I.T. degree program.
Lectures two hours a week, laboratory two hours a week.

OSS 2009 [0.5 credit]
Assembly and Machine Language
Structured approach to assembly language programming. Topics include data and address registers, data and address busses, condition code register and stack pointers, machine code format, instruction sizes, operand encoding, translation of source code into machine language, and how the processor executes instructions.
Includes: Experiential Learning Activity
Precludes additional credit for NET 1004 (no longer offered), NET 2013, PLT 1007 (no longer offered), PLT 2009 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory one hour a week.

OSS 2010 [0.5 credit]
Signals and Systems
This course provides a solid theoretical foundation for the analysis and processing of experimental data, and real-time experimental control methods. Topics include various properties of signals and systems, convolution, the Fourier transform, sampling theorem, z-transform, spectral analysis, filter design, and system identification.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2010 (no longer offered).
Prerequisite(s): BIT 1200 and BIT 1201. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial one hour a week.

OSS 3000 [0.5 credit]
Optical Communication Networks II
Operation, management and maintenance of metro/long-haul optical network elements and systems. Hands-on skills using GUI, Transaction Language One (TL1), optical network management to perform: alarm provisioning, line and path protection switching, security, data communications management, optical network backup and restore, load upgrade and installation management.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3000 (no longer offered).
Prerequisite(s): OSS 2002.
Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 3001 [0.5 credit]
Real-time Systems
Includes: Experiential Learning Activity
Also listed as NET 3001.
Precludes additional credit for PLT 3002 (no longer offered).
Prerequisite(s): OSS 2009 or PLT 2009 (no longer offered).
Lectures three hours a week, tutorial/laboratory two hours a week.
OSS 3002 [0.5 credit]
Design of Optical Components and Systems
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3004 (no longer offered).
Prerequisite(s): OSS 1003 or PLT 1003 (no longer offered).
Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 3003 [0.5 credit]
Fundamentals of Electromagnetics
Review of basic vector calculus followed by an introduction to electrostatics and magnetostatics. Maxwell’s equations and EM wave solutions. EM waves in dielectrics media, reflection, refraction, Fresnel relations and Brewster angle. Introduction to guided waves emphasizing slab waveguides.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3003 (no longer offered).
Prerequisite(s): BIT 1204 and BIT 2010.
Lecture and tutorial three hours a week.

OSS 3004 [0.5 credit]
Data Structures
Includes: Experiential Learning Activity
Also listed as NET 3004.
Precludes additional credit for PLT 3010 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 3009 [0.5 credit]
Project Management
Identification, selection, initiation, and organization of projects. Risk assessment, budget issues, communication, project scheduling, performance monitoring and control. Emphasis on practical techniques related to the field of photonics using case studies.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3009 (no longer offered).
Prerequisite(s): third year standing in the Optical Systems and Sensors program.
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 3012 [0.5 credit]
Digital Signal Processing
Operations-related topics including: sampling/reconstruction of continuous time signals, Fourier and Z-transforms, Discrete Fourier Transform (DFT), Fast Fourier Transform (FFT). Examination of other time and frequency domain techniques for designing and applying infinite impulse response (IIR) and finite impulse response (FIR) digital filters.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3012 (no longer offered).
Prerequisite(s): OSS 2010 or PLT 2010 (no longer offered).
Lectures three hours a week, tutorial one hour a week.

OSS 3013 [0.5 credit]
Software Design for Optical Systems and Sensors
Provides students with knowledge and expertise to design and develop complex software systems and programs for common optical systems and sensors. Topics include: system and requirement analysis, algorithms, component identification, common design patterns, and working with reusable components.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3013 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial two hours a week.

OSS 3014 [0.5 credit]
Optical Waves, Waveguides, and Sensors
Analysis of guided-wave propagation and sensors. Topics include Maxwell’s time-dependent wave equations, dielectric waveguides (slab, planar, segmented, rib, strip), optical fibres (modes, dispersion relations, propagation in dispersive media, nonlinear fibres), beam propagation methods, free space beam propagation, waveguide devices, and study of sensors technology.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3014 (no longer offered).
Prerequisite(s): OSS 3003 or PLT 3003 (no longer offered).
Lectures three hours a week, tutorial two hours a week.
OSS 4001 [0.5 credit]
Optoelectronic Devices
Includes: Experiential Learning Activity
Precludes additional credit for PLT 4001 (no longer offered).
Prerequisite(s): OSS 3004 or PLT 3004 (no longer offered).
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 4004 [0.5 credit]
Medical Imaging and Biosensors
Biological and medical photonics. Effect of light on biological systems, medical imaging, medical treatments, biological research and bio/medical applications. Laser manipulation of cells, laser surgery, and photo-therapy. Biophotonic lab experiments with scanning confocal microscopes, endoscopes, DNA scanners.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 4004 (no longer offered).
Prerequisite(s): OSS 3003 or PLT 3003 (no longer offered).
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 4006 [0.5 credit]
Image Processing
Developing and evaluating algorithms for extracting the necessary information signals. Topics include filter design, fast transforms, adaptive filters, spectrum estimation and modeling, sensor array processing, image processing, motion estimation from images, applications in biomed, computer-aided tomography, image restoration, robotic vision, and pattern recognition.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 4006 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 4008 [0.5 credit]
Remote Sensing
Introduction to the basics of remote sensing, characteristics of remote sensors, and applications. Topics include: image acquisition and data collection, LIDAR sensors and platforms and derived digital products, imagery analysis, topographic mapping, and 3D modeling of urban infrastructure for autonomous vehicles.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 4008 (no longer offered).
Prerequisite(s): OSS 3014 or PLT 3014 (no longer offered).
Lectures three hours a week, tutorial two hours a week.

OSS 4009 [0.5 credit]
Computer Vision
Introduction to topics in computer vision, including: fundamentals of image formation, camera imaging geometry, f camera models, camera calibration, structure from motion, feature detection and matching, depth and stereo, image stabilization, image classification, automated alignment, scene understanding, recognition, and image searching.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 4009 (no longer offered).
Prerequisite(s): OSS 4006 or PLT 4006 (no longer offered).
Lectures three hours a week, tutorial two hours a week.

OSS 4900 [1.0 credit]
OSS Capstone Project
Research project develops students’ ability to direct own learning and pursue advanced study in variety of subjects. Select topic, perform literature search, theoretical background, preliminary measurements, calculations, and design. Present findings in a preliminary thesis. Encourage writing technical papers. Research opportunities with industry and academia.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 4900 (no longer offered).
Prerequisite(s): fourth-year standing.
Tutorial hours arranged.

Interdisciplinary Science and Practice
This section presents the requirements for programs in:
• Interdisciplinary Science and Practice B.Sc. Honours
• Interdisciplinary Science and Practice B.Sc.

Interdisciplinary Science and Practice
B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 4.0 credits in:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISAP 1001</td>
<td>Introduction to Interdisciplinary Science</td>
<td>0.5</td>
</tr>
<tr>
<td>ISAP 1002</td>
<td>Seminar in Interdisciplinary Science</td>
<td>0.5</td>
</tr>
<tr>
<td>ISAP 2001</td>
<td>Foundations in Critical Inquiry</td>
<td>0.5</td>
</tr>
</tbody>
</table>
ISAP 2002 [0.5] Research Principles for Interdisciplinary Science
ISAP 3001 [0.5] Principles and Applications in Data Analysis
ISAP 3002 [0.5] Applications in Interdisciplinary Research
ISAP 3003 [0.5] Science Communication
ISAP 3004 [0.5] Science Policy

1.  4.0 credits in:
ISAP 1001 [0.5] Introduction to Interdisciplinary Science
ISAP 1002 [0.5] Seminar in Interdisciplinary Science
ISAP 2001 [0.5] Foundations in Critical Inquiry
ISAP 2002 [0.5] Research Principles for Interdisciplinary Science

2.  1.0 credit from:
ISAP 4906 [1.0] Capstone Course - Group Research Project
ISAP 4907 [1.0] Capstone Course - Research Essay
ISAP 4908 [1.0] Capstone Course - Individual Research Project

3.  1.0 credit in:
COMP 1005 [0.5] Introduction to Computer Science I
STAT 2507 [0.5] Introduction to Statistical Modeling I

4.  0.5 credit from:
MATH 1007 [0.5] Elementary Calculus I
MATH 1107 [0.5] Linear Algebra I

5.  0.5 credit from:
COMP 1006 [0.5] Introduction to Computer Science II
STAT 2509 [0.5] Introduction to Statistical Modeling II

6.  1.0 credit from the Faculty of Science at the 2000 level or higher
7.  2.0 credits from the Faculty of Science at the 3000 level or higher

B. Credits Not Included in the Major CGPA (10.0 credits)

8.  1.0 credit in:
ECON 1001 [0.5] Introduction to Microeconomics
ECON 1002 [0.5] Introduction to Macroeconomics

9.  2.0 credits in Approved Experimental Science Courses as defined in the Regulations for the Bachelor of Science
10.  2.0 credits from the Faculty of Science at the 2000 level or higher
11.  2.0 credits in Approved courses outside the Faculties of Science and Engineering and Design, as defined in the Regulations for the Bachelor of Science. Note: students in the ISAP program may not use NSCI 1000 in this category.
12.  3.0 credits in free electives

B. Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B. Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1.  2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Biochemistry</th>
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<tbody>
<tr>
<td>BIOC 2200 [0.5] Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOC 4001 [0.5] Methods in Biochemistry</td>
</tr>
<tr>
<td>BIOC 4201 [0.5] Advanced Cell Culture and Tissue Engineering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biology</th>
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</thead>
<tbody>
<tr>
<td>BIOL 1103 [0.5] Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5] Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 2001 [0.5] Animals: Form and Function</td>
</tr>
<tr>
<td>BIOL 2002 [0.5] Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2104 [0.5] Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2200 [0.5] Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOL 2600 [0.5] Ecology</td>
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<table>
<thead>
<tr>
<th>Chemistry</th>
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<tbody>
<tr>
<td>CHEM 1001 [0.5] General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5] General Chemistry II</td>
</tr>
<tr>
<td>CHEM 1005 [0.5] Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006 [0.5] Elementary Chemistry II</td>
</tr>
<tr>
<td>CHEM 2103 [0.5] Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2203 [0.5] Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204 [0.5] Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302 [0.5] Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303 [0.5] Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2800 [0.5] Foundations for Environmental Chemistry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Earth Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 1006 [0.5] Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5] The Earth System Through Time</td>
</tr>
<tr>
<td>ERTH 2102 [0.5] Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2404 [0.5] Engineering Geoscience</td>
</tr>
<tr>
<td>ERTH 2802 [0.5] Field Geology I</td>
</tr>
<tr>
<td>ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
</tr>
<tr>
<td>ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td>ERTH 3204 [0.5] Mineral Deposits</td>
</tr>
<tr>
<td>ERTH 3205 [0.5] Physical Hydrogeology</td>
</tr>
<tr>
<td>ERTH 3806 [0.5] Structural Geology</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Sciences</th>
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</thead>
<tbody>
<tr>
<td>FOOD 3001 [0.5] Food Chemistry</td>
</tr>
<tr>
<td>FOOD 3002 [0.5] Food Analysis</td>
</tr>
<tr>
<td>FOOD 3005 [0.5] Food Microbiology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geography</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOR 1010 [0.5] Global Environmental Systems</td>
</tr>
<tr>
<td>GEOR 3108 [0.5] Soil Properties</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neuroscience</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUR 3206 [0.5] Sensory and Motor Neuroscience</td>
</tr>
<tr>
<td>NEUR 3207 [0.5] Systems Neuroscience</td>
</tr>
<tr>
<td>NEUR 4600 [0.5] Advanced Lab in Neuroanatomy</td>
</tr>
</tbody>
</table>
Course Categories for B.Sc. Programs

**Science Geography Courses**
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth’s Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography
- GEOG 3102 [0.5] Geomorphology
- GEOG 3103 [0.5] Watershed Hydrology
- GEOG 3104 [0.5] Principles of Biogeography
- GEOG 3105 [0.5] Climate and Atmospheric Change
- GEOG 3106 [0.5] Aquatic Science and Management
- GEOG 3108 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 4005 [0.5] Directed Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Microclimatology
- GEOG 4108 [0.5] Permafrost

**Science Psychology Courses**
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 2307 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II

**Science Continuation Courses**
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student’s major discipline, and is chosen from the following:
- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)
Science Psychology Courses (see list above)
- STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

**Science Faculty Electives**
Science Faculty Electives are courses at the 1000-4000 level chosen from:
- BIOC (Biochemistry)
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001
ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering
- ENSC 2001

FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

<table>
<thead>
<tr>
<th>Physics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1001 [0.5]</td>
<td>Foundations of Physics I</td>
</tr>
<tr>
<td>PHYS 1002 [0.5]</td>
<td>Foundations of Physics II</td>
</tr>
<tr>
<td>PHYS 1003 [0.5]</td>
<td>Introductory Mechanics and Therodynamics</td>
</tr>
<tr>
<td>PHYS 1004 [0.5]</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td>PHYS 1008 [0.5]</td>
<td>Elementary University Physics II</td>
</tr>
<tr>
<td>PHYS 2202 [0.5]</td>
<td>Wave Motion and Optics</td>
</tr>
<tr>
<td>PHYS 2604 [0.5]</td>
<td>Modern Physics I</td>
</tr>
<tr>
<td>PHYS 3007 [0.5]</td>
<td>Third Year Physics Laboratory: Selected Experiments and Seminars</td>
</tr>
<tr>
<td>PHYS 3606 [0.5]</td>
<td>Modern Physics II</td>
</tr>
<tr>
<td>PHYS 3608 [0.5]</td>
<td>Modern Applied Physics</td>
</tr>
</tbody>
</table>
B.Sc. program:
The following courses are not acceptable for credit in any
Prohibited Courses

Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at
the 2000-4000 level chosen from the Science Faculty
Electives list above.

Approved Courses Outside the Faculties of Science
and Engineering and Design (may include NSCI 1000)

Free Electives
Any course is allowable as a Free Elective providing it
is not prohibited (see below). Students are expected to
comply with prerequisite requirements and enrollment
restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any
B.Sc. Program

Prohibited Courses
The following courses are not acceptable for credit in any
B.Sc. program:

MATH 1401
MATH 1119
MATH 1009
MATH 0006
MATH 1400

Co-operative Education
For more information about how to apply for the Co-op
program and how the Co-op program works please visit
the Co-op website.

All students participating in the Co-op program are
governed by the Undergraduate Co-operative Education
Policy.

Undergraduate Co-operative Education Policy
Admission Requirements
Students can apply to co-op in one of two ways; directly
from high school or after beginning a degree program at
Carleton.

If a student is admitted to co-op from high school, their
grades will be reviewed two terms to one year prior to
their first work term to ensure they continue to meet the
academic requirements after their 1st or 2nd year of study.
The time at which evaluation takes place depends on the
program of study. Students will automatically be notified
via their Carleton email account if they are permitted to
continue.

Students not admitted to Carleton University with the co-
option on their degree can apply for admission via
the co-operative education program website. To view
application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion
of 5.0 or more credits at Carleton University, the CGPA
requirement for the students’ academic program as well
as any course prerequisites. The articulated CGPA for
each program is the normal standard for assessment.
Please see the specific degree program sections for the
unique admission and continuation requirements for each
academic program.

Participation Requirements
COOP 1000
Once a student has been given admission or continuation
confirmation to the co-op option s/he must complete and
pass COOP 1000 (a mandatory online 0.0 credit course).
Students will have access to this course a minimum of two
terms prior to their first work term and will be notified when
register.

Communication with the Co-op Office
Students must maintain contact with the co-op office
during their job search and while on a work term. All
email communication will be conducted via the students’
Carleton email account.

Employment
Although every effort is made to ensure a sufficient
number of job postings for all students enrolled in the
co-op option of their degree program, no guarantee of
employment can be made. Carleton’s co-op program
operates a competitive job search process and is
dependent upon current market conditions. Academic
performance, skills, motivation, maturity, attitude and
potential will determine whether a student is offered a job.
It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts. While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:
1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Interdisciplinary Science and Practice: Co-op Admission and Continuation Requirements
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student (2.0 credits) in the Bachelor of Science Honours in Interdisciplinary Science and Practice;
2. Successfully completed, by the start date of the first work term, the following 2.0 credits: ISAP 3001, ISAP 3002, ISAP 3003, ISAP 3004.
3. Have obtained third-year standing;
4. Obtained and maintained a major CGPA of 9.0 or higher and an overall CGPA of 7.5 or higher in the first three years of academic study;

B.Sc. Honours Interdisciplinary Science and Practice students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: ISAP 3999
Work/Study Pattern:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
</tr>
<tr>
<td>Fall</td>
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<tr>
<td>Winter</td>
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<td>Winter</td>
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<td>Winter</td>
</tr>
<tr>
<td>Summer</td>
<td>S</td>
<td>Summer</td>
<td>W</td>
<td>Summer</td>
</tr>
</tbody>
</table>

Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees
• B.Sc. (Honours)
• B.Sc. (Major)
• B.Sc.

Admission Requirements
B. Sc. Honours Program

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements
For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing
For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

B.Sc. Major Program

B.Sc. Program

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics. 4U Physics is strongly recommended.
Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Interdisciplinary Science and Practice (ISAP) Courses**

**ISAP 1001 [0.5 credit]**

**Introduction to Interdisciplinary Science**

What is interdisciplinarity and what are the challenges and opportunities of collaboration within and across disciplines in science and beyond? Topics include types of biases, public datasets and science communication. Lectures and discussion three hours per week.

**ISAP 1002 [0.5 credit]**

**Seminar in Interdisciplinary Science**

Exploring the role of interdisciplinarity in discovery and innovation, and discussion of selected issues facing society and the role of science. Topics include finding information, collaboration and science communication tools. Prerequisite(s): ISAP 1001. Seminar three hours per week.

**ISAP 2001 [0.5 credit]**

**Foundations in Critical Inquiry**

What is science and the scientific method? Topics include the scientific method, credible sources of information, knowledge gaps, the impact of scientific discoveries, and discussion of their local and global implications. Prerequisite(s): ISAP 1002 or permission of the Institute. Lecture three hours per week, workshop two hours per week.

**ISAP 2002 [0.5 credit]**

**Research Principles for Interdisciplinary Science**

Exploring how research is conducted. Topics include publicly available databases, the role of communication in research, stakeholders and participants, and the process of identifying knowledge gaps and developing research questions. Prerequisite(s): ISAP 2001 or permission of the Institute. Lecture three hours per week.

**ISAP 3001 [0.5 credit]**

**Principles and Applications in Data Analysis**

Development of strategies for obtaining and analyzing data. Topics include: survey of publicly available science-data resources; identification of coincidental, correlational and causal relationships; statistical data-analysis techniques; concepts of risk and error propagation in measured and calculated values. Applications in the physical and biological sciences. Prerequisite(s): ISAP 2002, COMP 1005 and STAT 2507 or permission of the Institute. Lecture three hours per week, workshop two hours per week.

**ISAP 3002 [0.5 credit]**

**Applications in Interdisciplinary Research**

Application of skills from Interdisciplinary Science and Practice (ISAP) courses to develop a research proposal. Topics include: research ethics; identification of stakeholders; inclusive consultation, collaboration and dissemination strategies. Prerequisite(s): ISAP 2002 or permission of the Institute. Lecture three hours per week, workshop two hours per week.

**ISAP 3003 [0.5 credit]**

**Science Communication**

How is science perceived and how has science been communicated? Students will use case studies to assess examples of science communication with varying outcomes. Topics include the principles of effective science communication, the range of tools available, and knowing the audience. Includes: Experiential Learning Activity Prerequisite(s): ISAP 2002 or permission of the Institute. Lecture and seminar three hours per week.
ISAP 3004 [0.5 credit]
Science Policy
Exploration of how science-related policy is developed and the impact of policy on science. Topics include policy frameworks, stakeholder roles, power relationships, commercialization and the funding of science.
Prerequisite(s): ISAP 3003 or permission of the Institute. Lecture and seminar three hours per week.

ISAP 3700 [0.5 credit]
Topics in Interdisciplinary Science
Specific topics of current interest. Topics may vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): Second year standing in the Interdisciplinary Science and Practice program or permission of the Institute.
Seminar/workshop three hours per week.

ISAP 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ISAP 4700 [0.5 credit]
Topics in Interdisciplinary Science
Specific topics of current interest. Topics may vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): Third year standing in the Interdisciplinary Science and Practice program or permission of the Institute.
Seminar three hours per week.

ISAP 4901 [0.5 credit]
Directed Studies
Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the Interdisciplinary Science and Practice (ISAP) program and permission of the instructor.

ISAP 4906 [1.0 credit]
Capstone Course - Group Research Project
Students will collaborate on a project that addresses a real-world issue in a team environment. Focus includes: design and completion of a research project; development of communication, critical inquiry, data analysis and research skills; and the opportunity to develop initiative, creativity and self-reliance.
Includes: Experiential Learning Activity
Precludes additional credit for ISAP 4907, ISAP 4908. Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program. Lecture, seminar and workshop four hours per week, as scheduled by the instructor.

ISAP 4907 [1.0 credit]
Capstone Course - Research Essay
A substantial, independent essay or research proposal-based critical review and research proposal, using library, database and/or bioinformatic resources, under the direct supervision of the instructor. Topics include identification and critical review of resources, development of writing skills and formulation of research question and strategy.
Includes: Experiential Learning Activity
Precludes additional credit for ISAP 4906, ISAP 4908. Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program. Lecture, seminar and workshop four hours per week, as scheduled by the instructor.

ISAP 4908 [1.0 credit]
Capstone Course - Individual Research Project
An independent research project under the direct supervision of a faculty adviser. Evaluation is based on a written thesis and a poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for ISAP 4906, ISAP 4907. Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program, a major CGPA of 9.0 or higher, and permission of the Institute. Lectures and discussion as scheduled by the course coordinator; other hours as arranged with the faculty advisor.

Italian (Minor)
This section presents the requirements for programs in:
• Minor in Italian

Minor in Italian (4.0 credits)
Open to all undergraduate degree students.
Requirements:
1. 3.0 credits in ITAL 3.0
2. 1.0 credit in ITAL at the 3000-level or higher 1.0
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.
4. The remaining requirements of the major discipline(s) and degree must be satisfied.
Total Credits 4.0

Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.
Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations
In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Italian (ITAL) Courses
Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

ITAL 1010 [0.5 credit]  
First-Year Italian I  
For students with no knowledge of Italian. Oral skills, reading and writing. Compulsory attendance.  
Precludes additional credit for ITAL 1110.  
Four hours a week.

ITAL 1020 [0.5 credit]  
First-Year Italian II  
Continuation of first-year Italian. Oral skills, reading and writing. Compulsory attendance.  
Precludes additional credit for ITAL 1110.  
Prerequisite(s): grade of C or higher in ITAL 1010, or permission of the School.  
Four hours a week.

ITAL 1110 [1.0 credit]  
Intensive First-Year Italian  
For students with no knowledge of Italian. Oral skills, reading and writing. Compulsory attendance.  
Precludes additional credit for ITAL 1110.  
Prerequisite(s): grade of C or higher in ITAL 1010, or permission of the School.  
Eight hours a week (one term).

ITAL 2010 [0.5 credit]  
Second-Year Italian I  
Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.  
Precludes additional credit for ITAL 2110.  
Prerequisite(s): grade of C or higher in ITAL 1020 or ITAL 1110, or permission of the School.  
Four hours a week.

ITAL 2020 [0.5 credit]  
Second-Year Italian II  
Continuation of second-year Italian. Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.  
Precludes additional credit for ITAL 2110.  
Prerequisite(s): grade of C or higher in ITAL 2010, or permission of the School.  
Four hours a week.

ITAL 2110 [1.0 credit]  
Intensive Second-Year Italian  
Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.  
Precludes additional credit for ITAL 2010 or ITAL 2020.  
Prerequisite(s): grade of C or higher in ITAL 1020, ITAL 1110, or permission of the School.  
Eight hours a week (one term).

ITAL 3110 [1.0 credit]  
Intensive Third-Year Italian  
Further study of Italian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.  
Prerequisite(s): grade of C or higher in ITAL 2000 (no longer offered), ITAL 2020, ITAL 2110, or permission of the School.  
Six hours a week (one term).

ITAL 4110 [1.0 credit]  
Intensive Fourth-Year Italian  
Advanced spoken and written Italian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.  
Prerequisite(s): grade of C or higher in ITAL 3110, or permission of the School.  
Six hours a week (one term).

ITAL 4900 [1.0 credit]  
Independent Study  
Research in a topic in Italian language, literature or linguistics under the supervision of a member of the School.  
Includes: Experiential Learning Activity  
Prerequisite(s): third- or fourth-year standing in the Minor in Italian, grade of C or higher in ITAL 3110 or equivalent, or permission of the School.
ITAL 4901 [0.5 credit]
Independent Study
Research in a topic in Italian language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Italian, grade of C or higher in ITAL 3110 or equivalent, or permission of the School.

Japanese Language (Minor)

This section presents the requirements for programs in:

- Minor in Japanese Language

Minor in Japanese Language (4.0 credits)
Open to all undergraduate degree students.

Requirements:

1. 3.0 credits in JAPA 3.0
2. 1.0 credit in JAPA at the 3000-level or higher 1.0
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

JAPA 1010 [0.5 credit]
First-Year Japanese I
For students with no knowledge of Japanese. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for JAPA 1110.
Four hours a week.

JAPA 1020 [0.5 credit]
First-Year Japanese II
Continuation of first-year Japanese. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for JAPA 1110.
Prerequisite(s): grade of C or higher in JAPA 1010, or permission of the School.
Four hours a week.

JAPA 1110 [1.0 credit]
Intensive First-Year Japanese
For students with no knowledge of Japanese. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for JAPA 1010 and JAPA 1020.
Eight hours a week (one term).

JAPA 2110 [1.0 credit]
Intensive Second-Year Japanese
Further study of Japanese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 1020 or JAPA 1110, or permission of the School.
Eight hours a week (one term).

JAPA 3010 [0.5 credit]
Third-Year Japanese I
Further study of Japanese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 2110, or permission of the School.
Three hours a week.

JAPA 3011 [0.5 credit]
Reading in Japanese – Kanji I
Intended for students taking JAPA 3010 and those who want to learn kanji in depth and become proficient in reading various Japanese texts. The course is intended primarily for students who do not use Chinese characters in their first language.
Prerequisite(s): grade of C or higher in JAPA 2110 or permission of the School.
Three hours a week.
JAPA 3020 [0.5 credit]
Third-Year Japanese II
Continuation of third-year Japanese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 3010, or permission of the School.
Three hours a week.

JAPA 3021 [0.5 credit]
Reading in Japanese – Kanji II
Prerequisite(s): grade of C or higher in JAPA 3011 or permission of the School.
Three hours a week.

JAPA 4010 [0.5 credit]
Fourth-Year Japanese I
Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 4020, or permission of the School.
Three hours a week.

JAPA 4020 [0.5 credit]
Fourth-Year Japanese II
Continuation of fourth-year Japanese. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 4010, or permission of the School.
Three hours a week.

JAPA 4210 [0.5 credit]
Functional Contemporary Japanese I
Further study of Japanese to reach a more advanced level, aimed at developing speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Prerequisite(s): grade of C or higher in JAPA 4020 or permission of the School.
Three hours a week.

JAPA 4220 [0.5 credit]
Functional Contemporary Japanese II
Continuation of JAPA 4210. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Prerequisite(s): grade of C or higher in JAPA 4210 or permission of the School.
Three hours a week.

JAPA 4900 [1.0 credit]
Independent Study
Research in a topic in Japanese language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Japanese, a grade of C or higher in JAPA 4020 or equivalent, or permission of the School.

JAPA 4901 [0.5 credit]
Independent Study
Research in a topic in Japanese language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Japanese, JAPA 4020 or equivalent, or permission of the School.

Journalism

This section presents the requirements for programs in:

- Journalism B.J. Honours
- Journalism with Concentration in Health Sciences B.J. Honours
- Journalism B.J. Combined Honours
- Media Production and Design B.M.P.D. Honours
- Minor in News Media and Information

Program Requirements

Journalism

B.J. Honours (20.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

<table>
<thead>
<tr>
<th>1. 1.0 credit in:</th>
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<tbody>
<tr>
<td>JOUR 1001 [0.5]</td>
<td>Foundations: Journalism in Context</td>
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<tr>
<td>JOUR 1002 [0.5]</td>
<td>Foundations: Practicing Journalism in a Diverse Society</td>
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<tr>
<th>2. 2.0 credits in:</th>
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<tbody>
<tr>
<td>JOUR 2201 [1.0]</td>
<td>Fundamentals of Reporting</td>
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<td>JOUR 2202 [0.5]</td>
<td>Digital Journalism Toolkit</td>
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<td>JOUR 2501 [0.5]</td>
<td>Media Law</td>
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<th>3. 2.5 credits in:</th>
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<tr>
<td>JOUR 3207 [0.5]</td>
<td>Audio Journalism</td>
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<td>JOUR 3208 [0.5]</td>
<td>Video Journalism</td>
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<tr>
<td>JOUR 3225 [0.5]</td>
<td>Reporting in Depth</td>
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<tr>
<td>JOUR 3235 [0.5]</td>
<td>Digital Journalism</td>
</tr>
<tr>
<td>JOUR 3300 [0.5]</td>
<td>Media Ethics in a Digital World</td>
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</table>
4. 0.5 credit in:
   JOUR 4001 [0.5] Journalism Now - and Next

5. 2.0 credits from:
   Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism (at least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses)

   a. 0.5 credits from:
      JOUR 4003 [0.5] The Digital Hub: Advanced Multimedia (Journalism Publications)
      JOUR 4004 [0.5] The Digital Hub: Advanced Audio
      JOUR 4005 [0.5] The Digital Hub: Advanced Video

   b. 0.5 credits from:
      JOUR 4300 [0.5] Specialized Journalism: Special Topic
      JOUR 4301 [0.5] Specialized Journalism: Business and the Markets
      JOUR 4302 [0.5] Specialized Journalism: Business and Canadian Society
      JOUR 4303 [0.5] Specialized Journalism: Health and Science
      JOUR 4304 [0.5] Specialized Journalism: Environment and Science
      JOUR 4305 [0.5] Specialized Journalism: Canada and the U.S.
      JOUR 4306 [0.5] Specialized Journalism: Canada and the World
      JOUR 4308 [0.5] Specialized Journalism: Sports and Sport Culture
      JOUR 4309 [0.5] Specialized Journalism: Arts and Culture
      JOUR 4310 [0.5] Specialized Journalism: Justice and the Law
      JOUR 4311 [0.5] Specialized Journalism: Justice and The Supreme Court

   Professional Skills
   a. 0.5 credits from:
      JOUR 4400 [0.5] Professional Skills: Special Topic
      JOUR 4401 [0.5] Professional Skills: Data Storytelling
      JOUR 4402 [0.5] Professional Skills: Longform Writing
      JOUR 4403 [0.5] Professional Skills: Strategic Communication
      JOUR 4404 [0.5] Professional Skills: Freelancing for Media Professionals

   Investigating Journalism
   a. 0.5 credits from:
      JOUR 4500 [0.5] Investigating Journalism: Special Topic
      JOUR 4501 [0.5] Investigating Journalism: Gender, Identity and Inequality
      JOUR 4502 [0.5] Investigating Journalism: Journalism and Conflict
      JOUR 4503 [0.5] Investigating Journalism: Journalism, Indigenous Peoples and Canada
      JOUR 4504 [0.5] Investigating Journalism: The Media and International Development
      JOUR 4505 [1.0] Investigating Journalism: The Power and Politics of Government

   b. 0.5 credits from:
      HIST 1301 [0.5] Conflict and Change in Early Canadian History
      HIST 1302 [0.5] Rethinking Modern Canadian History
      HIST 2301 [0.5] Canadian Political History
      HIST 2304 [1.0] Social and Cultural History of Canada (See Item 8 below)
      HIST 2311 [0.5] Environmental History of Canada

   b. 0.5 credits from:
      INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies
      INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters
      INDG 2011 [0.5] Contemporary Indigenous Studies

8. 7.0 credits in free electives. Students who take HIST 2304 to fulfill Item 7a will have 6.5 credits in free electives. Free elective credits may include JOUR courses in the 4300 series of courses, 4400 series of courses and 4500 series of courses, JOUR 4003, JOUR 4004 and JOUR 4005.

Total Credits 20.0

Bachelor of Journalism
Combined Honours

Bachelor of Journalism students may take Combined Honours programs in which Journalism is combined with another discipline. Students may choose a Combined Honours program in Journalism and Communication and Media Studies, or from Combined Honours programs offered within the B.A. The Journalism requirements for the Combined Honours program are normally the same as those for the Bachelor of Journalism with Honours listed above. The requirements of the other discipline are the same as those listed for the B.A. Combined Honours program in that discipline. Students are advised to consult the Combined Honours entry of their second discipline in this calendar for details. Combined Honours programs in Journalism and other disciplines are available only to students registered in Journalism.

Journalism with Concentration in Health Sciences
B.J. Honours (20.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in:
   JOUR 1001 [0.5] Foundations: Journalism in Context
   JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society

2. 2.0 credits in:
   JOUR 2201 [1.0] Fundamentals of Reporting
   JOUR 2202 [0.5] Digital Journalism Toolkit
   JOUR 2501 [0.5] Media Law

3. 2.5 credits in:
   JOUR 3207 [0.5] Audio Journalism
   JOUR 3208 [0.5] Video Journalism

B. Credits Not Included in the Major CGPA (12.0 credits)

6. 4.0 credits must be taken in a field other than journalism, with at least 1.0 of these credits at the 3000 level or higher

7. a. 0.5 credits from:
   HIST 1301 [0.5] Conflict and Change in Early Canadian History
   HIST 1302 [0.5] Rethinking Modern Canadian History
   HIST 2304 [1.0] Social and Cultural History of Canada (See Item 8 below)
   HIST 2311 [0.5] Environmental History of Canada

   b. 0.5 credits from:
      INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies
      INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters
      INDG 2011 [0.5] Contemporary Indigenous Studies

8. 7.0 credits in free electives. Students who take HIST 2304 to fulfill Item 7a will have 6.5 credits in free electives. Free elective credits may include JOUR courses in the 4300 series of courses, 4400 series of courses and 4500 series of courses, JOUR 4003, JOUR 4004 and JOUR 4005.
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<th>4. 0.5 credit in:</th>
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<tr>
<td>Journalism Now - and Next</td>
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<td>5. 0.5 credit from - Journalism Publications:</td>
<td>0.5</td>
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<tr>
<td>JOUR 4003 [0.5]</td>
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<tr>
<td>The Digital Hub: Advanced Multimedia</td>
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<tr>
<td>JOUR 4004 [0.5]</td>
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<td>The Digital Hub: Advanced Audio</td>
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<tr>
<td>JOUR 4005 [0.5]</td>
<td></td>
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<tr>
<td>The Digital Hub: Advanced Video</td>
<td></td>
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<tr>
<td>6. 0.5 credit from - Specialized Journalism:</td>
<td>0.5</td>
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<tr>
<td>JOUR 4303 [0.5]</td>
<td></td>
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<tr>
<td>Specialized Journalism: Health and Science</td>
<td></td>
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<tr>
<td>JOUR 4304 [0.5]</td>
<td></td>
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<tr>
<td>Specialized Journalism: Environment and Science</td>
<td></td>
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<tr>
<td>7. 1.0 credit from - Professional Skills and/or Investigating Journalism:</td>
<td>1.0</td>
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<tr>
<td>Professional Skills</td>
<td></td>
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<tr>
<td>JOUR 4400 [0.5]</td>
<td></td>
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<tr>
<td>Professional Skills: Special Topic</td>
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<tr>
<td>JOUR 4401 [0.5]</td>
<td></td>
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<tr>
<td>Professional Skills: Data Storytelling</td>
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<tr>
<td>JOUR 4402 [0.5]</td>
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<tr>
<td>Professional Skills: Longform Writing</td>
<td></td>
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<tr>
<td>JOUR 4403 [0.5]</td>
<td></td>
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<tr>
<td>Professional Skills: Strategic Communication</td>
<td></td>
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<tr>
<td>JOUR 4404 [0.5]</td>
<td></td>
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<tr>
<td>Professional Skills: Freelancing for Media Professionals</td>
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</tr>
</tbody>
</table>

**Investigating Journalism**

| JOUR 4500 [0.5] | Investigating Journalism: Special Topic |
| JOUR 4501 [0.5] | Investigating Journalism: Gender, Identity and Inequality |
| JOUR 4502 [0.5] | Investigating Journalism: Journalism and Conflict |
| JOUR 4503 [0.5] | Investigating Journalism: Journalism, Indigenous Peoples and Canada |
| JOUR 4504 [0.5] | Investigating Journalism: The Media and International Development |
| JOUR 4505 [1.0] | Investigating Journalism: The Power and Politics of Government |

**B. Credits Not Included in the Major CGPA (12.0 credits)**

<table>
<thead>
<tr>
<th>8. 1.0 credit in:</th>
<th>1.0</th>
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<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td></td>
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<tr>
<td>Foundations of Biology I</td>
<td></td>
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<tr>
<td>BIOL 1104 [0.5]</td>
<td></td>
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<tr>
<td>Foundations of Biology II</td>
<td></td>
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<tr>
<td>9. 2.0 credits in Health Science courses:</td>
<td>2.0</td>
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<tr>
<td>HLTH 1001 [0.5]</td>
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<tr>
<td>Principles of Health I</td>
<td></td>
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<tr>
<td>HLTH 2001 [0.5]</td>
<td></td>
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<tr>
<td>Health Research Methods and Skills</td>
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<tr>
<td>HLTH 2002 [0.5]</td>
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<tr>
<td>Molecular and Cellular Pathology</td>
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<tr>
<td>HLTH 2003 [0.5]</td>
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<tr>
<td>Social Determinants of Health</td>
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<tr>
<td>10. 1.0 credit in a capstone course:</td>
<td>1.0</td>
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<tr>
<td>NSCI 4901 [1.0]</td>
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<tr>
<td>Science Journalism Independent Project</td>
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<tr>
<td>11. 2.0 credit in electives in Health Sciences, including courses from Biology, Neuroscience and Psychology</td>
<td>2.0</td>
</tr>
<tr>
<td>12 a. 0.5 credit from:</td>
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</tbody>
</table>

**Total Credits**

| 20.0 |

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**Journalism**

**B.J. Combined Honours (20.0 credits)**

**A. Credits Included in the Journalism CGPA (8.0 credits)**

<table>
<thead>
<tr>
<th>1. 1.0 credit in:</th>
<th>1.0</th>
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</thead>
<tbody>
<tr>
<td>JOUR 1001 [0.5]</td>
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<tr>
<td>Foundations: Journalism in Context</td>
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<tr>
<td>JOUR 1002 [0.5]</td>
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<tr>
<td>Foundations: Practicing Journalism in a Diverse Society</td>
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<tr>
<td>2. 2.0 credits in:</td>
<td>2.0</td>
</tr>
<tr>
<td>JOUR 2201 [1.0]</td>
<td></td>
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<tr>
<td>Fundamentals of Reporting</td>
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<tr>
<td>JOUR 2202 [0.5]</td>
<td></td>
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<tr>
<td>Digital Journalism Toolkit</td>
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<tr>
<td>JOUR 2501 [0.5]</td>
<td></td>
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<tr>
<td>Media Law</td>
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<tr>
<td>3. 2.5 credits in:</td>
<td>2.5</td>
</tr>
<tr>
<td>JOUR 3207 [0.5]</td>
<td></td>
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<tr>
<td>Audio Journalism</td>
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<tr>
<td>JOUR 3208 [0.5]</td>
<td></td>
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<tr>
<td>Video Journalism</td>
<td></td>
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<tr>
<td>JOUR 3225 [0.5]</td>
<td></td>
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<tr>
<td>Reporting in Depth</td>
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<tr>
<td>JOUR 3235 [0.5]</td>
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<tr>
<td>Digital Journalism</td>
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<tr>
<td>JOUR 3300 [0.5]</td>
<td></td>
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<tr>
<td>Media Ethics in a Digital World</td>
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<tr>
<td>4. 0.5 credit in:</td>
<td>0.5</td>
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<tr>
<td>JOUR 4001 [0.5]</td>
<td></td>
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<tr>
<td>Journalism Now - and Next</td>
<td></td>
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<tr>
<td>5. 2.0 credits from - Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism: (at least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses)</td>
<td>2.0</td>
</tr>
</tbody>
</table>

**Journalism Publications**

| JOUR 4003 [0.5] | The Digital Hub: Advanced Multimedia |
| JOUR 4004 [0.5] | The Digital Hub: Advanced Audio |
| JOUR 4005 [0.5] | The Digital Hub: Advanced Video |

**Specialized Journalism**

| JOUR 4300 [0.5] | Specialized Journalism: Special Topic |
| JOUR 4301 [0.5] | Specialized Journalism: Special Topic |

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The Academic Year (Graduate and Undergraduate Studies)
where required, an honours research essay

7. The requirements from the other discipline including,

b. 0.5 credit from:

B. Additional Requirements (12.0 credits)

6.a. 0.5 credit from:

HIST 1301 [0.5] Conflict and Change in Early Canadian History
HIST 1302 [0.5] Rethinking Modern Canadian History
HIST 2301 [0.5] Canadian Political History
HIST 2304 [1.0] Social and Cultural History of Canada (See Item 8 below)
HIST 2311 [0.5] Environmental History of Canada
b. 0.5 credit from:

INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies
INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters
INDG 2011 [0.5] Contemporary Indigenous Studies

7. The requirements from the other discipline including, where required, an honours research essay

8. Sufficient free electives to make 20.0 credits for the whole program. Students who take HIST 2304 will have 0.5 credits less to complete. Free elective credits may include JOUR courses in the 4300 series of courses, 4400 series of courses and 4500 series of courses, JOUR 4003, JOUR 4004 and JOUR 4005.

Total Credits 20.0

Note: Item 8 above may be satisfied by courses simultaneously fulfilling requirements of the other discipline.

Media Production and Design

B.M.P.D. Honours (20.0 credits)

A. Credits Included in the Major (12.0 credits)

1. 2.0 credits in:

ITEC 1005 [0.5] Web Development
ITEC 1100 [0.5] Introduction to Interactive Media Design
MPAD 1001 [0.5] Introduction to Storytelling: The Context
MPAD 1002 [0.5] Introduction to Storytelling: The Practice

2. 1.0 credits in:

ITEC 1401 [0.5] Introduction to Scripting and Problem Solving
ITEC 2401 [0.5] Intermediate Scripting

Or

ITEC 1400 [0.5] Introduction to Programming and Problem Solving
ITEC 2400 [0.5] Intermediate Programming

3. 3.5 credits in:

ITEC 2000 [0.5] Multimedia Data Management
ITEC 2100 [0.5] Data Visualization
MPAD 2001 [0.5] Basics of Visual Communication I
MPAD 2002 [0.5] Basics of Visual Communication II
MPAD 2003 [0.5] Introductory Data Storytelling
MPAD 2004 [0.5] Writing for Media
MPAD 2501 [0.5] Media Law

4. 3.0 credits in:

ITEC 3100 [0.5] Immersive Storytelling
MPAD 3001 [0.5] Storytelling and Social Media
MPAD 3002 [0.5] Civic Engagement and Public Institutions I
MPAD 3003 [0.5] Civic Engagement and Public Institutions II: Minor Design Project
MPAD 3300 [0.5] Media Ethics in a Digital World
MPAD 3501 [0.5] Internet and Big Data Law

5. 2.0 credits in:

MPAD 4000 [1.0] Capstone Project
MPAD 4001 [0.5] Media Industries Now and Next
MPAD 4200 [0.5] Freelance Media Survival Skills

6. 0.5 credit from:

MPAD 3000 [0.5] Directed Studies
MPAD 4300 [0.5] Special Topic
MPAD 4400 [0.5] Directed Studies
MPAD 4500 [0.5] Special Topic
MPAD 4501 [0.5] Gender, Identity and Inequality
MPAD 4502 [0.5] Journalism and Conflict
Honours must have:

- a candidate for the degree of Bachelor of Journalism with
  In addition to the graduation requirements of the Faculty, Graduation Requirements
  Arts in Communication in the Graduate Calendar.

Students who already hold an undergraduate degree in another field are not eligible to apply for the B.J. Note:
their program and selecting courses.

Students should consult with the School when planning the process of Academic Performance Evaluation.

Students must satisfy the University regulations including

- an Overall CGPA of at least 6.50, and
- the recommendation of the School of Journalism and Communication for graduation.

Prohibited Courses

Courses below the 1000-level may not be used for credit in Journalism programs.

Bachelor of Journalism

Students in the Bachelor of Journalism are subject to the standard Academic Performance Evaluation (APE) process with the following additions and amendments:

1. Continuation in the Journalism program requires the successful completion of 4.0 credits, including JOUR 1001 and JOUR 1002, by the first Academic Performance Evaluation.

2. Students are in Good Standing at the first APE if they have a Major CGPA of at least 7.0 and an Overall CGPA of at least 7.0.

3. Students who do not achieve Good Standing but who have a Major CGPA of at least 6.0 and an Overall CGPA of at least 6.0 are on Academic Warning. Those on Academic Warning must complete the following 2.0 credits of Journalism courses by the next APE, with a minimum final grade of C in each: JOUR 2201, JOUR 2202, JOUR 2501. (Note that the major CGPA must be 6.5 or above by the next APE to be eligible for continuation in the Bachelor of Journalism.) Students who do not meet this requirement must leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).

4. Students who do not achieve Good Standing and who have a Major CGPA of less than 6.0 or an Overall CGPA of less than 6.0 are required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).

5. Students are in Good Standing at any subsequent APE if they have a Major CGPA of at least 6.5 and an Overall CGPA of at least 6.5.

6. Students who do not receive Good Standing at any subsequent Academic Performance Evaluation will be required to withdraw from the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).

Transfer into Second Year of B.J.

The School maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA equivalent to 10.00 (A-) or better. Continuation in Good Standing at subsequent Academic Performance Evaluations requires a Major CGPA of 6.50 and an Overall CGPA of at least 6.5.

Transfer from B.J. to B.J. Hum.

A student who has completed the first year of the B.J. in Good Standing may apply to transfer into the second year of the B.J. Hum. and will be accepted at the discretion of the School of Journalism and the College of Humanities, and must normally have an overall CGPA of 10.00 (A-) or higher. Transfers into higher years will not be considered.
General Prerequisites
1. Students may continue into 3000-level Journalism production courses JOUR 3207, JOUR 3208, JOUR 3225, JOUR 3235 if they attain a minimum grade of C in each of the following: JOUR 2201, JOUR 2202, JOUR 2501. (Note that the major CGPA and overall CGPA must be 6.5 or above at each APE to be eligible for continuation in the Bachelor of Journalism.)
2. Students may continue into the 4000-level Journalism publication courses JOUR 4003, JOUR 4004 and JOUR 4005 if they attain a minimum grade of C in each of the following: JOUR 3207, JOUR 3208, JOUR 3225, JOUR 3235. (Note that the major CGPA and overall CGPA must be 6.5 or above at each APE to be eligible for continuation in the Bachelor of Journalism.)

Academic Performance Evaluation for Bachelor of Journalism and Humanities
The Bachelor of Journalism and Humanities degree distinguishes between a student's Overall CGPA and their Core Humanities CGPA.

The Core Humanities CGPA is calculated on the basis of the following four courses: HUMS 1000, HUMS 2000, HUMS 3000, HUMS 4000.

Continuation Regulations
1. Continuation in the Bachelor of Journalism and Humanities program requires the successful completion of 4.0 credits, including JOUR 1001 and JOUR 1002, by the first Academic Performance Evaluation.
   a. Students are in Good Standing at the first APE if they have an Overall CGPA of at least 7.0 and a Core Humanities CGPA of 7.00.
   b. Students who do not achieve Good Standing but who have an Overall CGPA of at least 6.0 and a Core Humanities CGPA of at least 6.00 are on Academic Warning. Those on Academic Warning must complete the following 2.0 credits of Journalism courses by the next APE, with a minimum final grade of C in each: JOUR 2201, JOUR 2202, JOUR 2501. (Note that the overall CGPA must be 7.0 or above by the next APE to be eligible to continue in Good Standing in the Bachelor of Journalism and Humanities.) Students who do not meet this requirement must leave the program with an overall CGPA equivalent to 10.00 (A-) or better.
   c. Students who do not achieve Good Standing and who have an Overall CGPA or a Core Humanities CGPA of less than 6.0 are required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).
   d. Students who do not achieve Good Standing and who have an Overall CGPA of 7.00 or higher and a Core Humanities CGPA of 7.00 or higher. A student who is not in Good Standing but who has an Overall CGPA of 6.00 or higher and Core Humanities CGPA of 6.00 or higher is on Academic Warning.
3. A student is required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP) if:
   a. the student was on Academic Warning and does not achieve Good Standing at the next Academic Performance Evaluation, OR
   b. the student has an Overall CGPA of less than 6.00 or a Core Humanities CGPA of less than 6.00 at any Academic Performance Evaluation.

Transfer into second year of the B.J.Hum.
The School maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA equivalent to 10.00 (A-) or better. Continuation in Good Standing at subsequent Academic Performance Evaluations requires an Overall CGPA of at least 7.0 and a Core Humanities CGPA of at least 7.0. An additional year may be necessary for transfer students to complete their degree requirements.

General prerequisite
1. Students may continue into 3000-level Journalism production courses JOUR 3207, JOUR 3208, JOUR 3225, JOUR 3235 if they attain a minimum grade of C in each of the following: JOUR 2201, JOUR 2202 and JOUR 2501. (Note that the overall CGPA and Core Humanities CGPA must be 6.5 or above at each APE to be eligible for continuation in the Bachelor of Journalism.)
2. Students may continue into the 4000-level Journalism publication courses JOUR 4003, JOUR 4004 and JOUR 4005 if they attain a minimum grade of C in each of the following: JOUR 3207, JOUR 3208, JOUR 3225, JOUR 3235. (Note that the major CGPA and overall CGPA must be 6.5 or above at each APE to be eligible for continuation in the Bachelor of Journalism.)
supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degree**

- B.J. (Honours)

**Admission Requirements**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include 4U English. The Bachelor of Journalism with a Concentration in Health Sciences must also include one 4U Math and either 4U Chemistry or 4U Biology.

Note: Students who already hold an undergraduate degree in another field are not eligible to apply for the B.J. (Honours) program. These students should consult the information on the Master of Journalism or the Master of Arts in Communication in the Faculty of Graduate Studies and Research Calendar.

**Advanced Standing**

The School also maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA of 10.00 (A-) or higher.

**Journalism (JOUR) Courses**

**JOUR 1001 [0.5 credit]**

*Foundations: Journalism in Context*

This course charts a history of the fourth estate in the West from the invention of the printing press to the ascendance of networked digital communication, focusing on the political, economic and technological contexts that have shaped the news media as institutions and industries.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 1000.

Prerequisite(s): for Journalism Honours students only.

Lectures and discussion three hours a week.

**JOUR 1002 [0.5 credit]**

*Foundations: Practicing Journalism in a Diverse Society*

The course introduces students to the concepts, issues and challenges in the contemporary Canadian media environment that will shape their professional role as practicing journalists. It will also provide students with an initial opportunity to practice some basic journalistic skills.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 1000.

Prerequisite(s): for Journalism Honours students only.

Lectures and discussion three hours a week.

**JOUR 1003 [0.5 credit]**

*Discovering Journalism: Traditional Tales to Tweets*

Journalism’s evolution as community creator and guardian of democracy; its greatest scoops and worst misdeeds. From ancient news-sharing to 21st-century expression in blogs, tweets and investigative masterpieces, this course surveys ethical, political and economic contexts of journalism. Not open to Journalism majors.

Lecture three hours a week.

**JOUR 2003 [0.5 credit]**

*Delivering Journalism: Innovators v. Imposters*

Activists, imposters and innovators increasingly crowd in on traditional journalism’s role of presenting reliable news and fair discussion. How is public awareness now shaped – and misshaped – and how must journalism reshape, update and defend its borders to serve communities better?.

Prerequisite(s): JOUR 1001, JOUR 1002, JOUR 1003, or permission of the School of Journalism and Communication.

Lecture and discussion three hours a week.

**JOUR 2106 [0.5 credit]**

*The Documentary*

Examination of the work of individual film makers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered. Also listed as FILM 2106.

Precludes additional credit for JOUR 2105, FILM 2105.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

**JOUR 2201 [1.0 credit]**

*Fundamentals of Reporting*

Introduction to the techniques journalists use to gather information quickly, accurately and ethically, and to present reports and features in clear, engaging ways. Newsroom exercises provide experience in reporting, writing, editing and using digital tools, including photography and social media.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.

Lectures, discussion and practicum six hours a week.
JOUR 2202 [0.5 credit]
Digital Journalism Toolkit
An introduction to the digital tools and social media journalists use to gather, verify and present material to audiences. Lab exercises provide experience producing photographs, audio, and video for journalistic storytelling and the use of social media tools and platforms for reporting and publishing.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program. Students must be enrolled in this course concurrently with JOUR 2201.
Lectures and lab three hours a week.

JOUR 2501 [0.5 credit]
Media Law
A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court.
Also listed as COMS 2501, MPAD 2501.
Precludes additional credit for COMM 2501 (no longer offered).
Prerequisite(s): JOUR 1001, JOUR 1002, COMS 1001, COMS 1002, or JOUR 1003 and enrollment in the Minor in News Media and Information, or enrollment in the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School of Journalism and Communication.
Lectures and discussion three hours a week.

JOUR 3105 [0.5 credit]
Questions of Documentary Practice
Theoretical implications of documentary film and documentary television practice.
Also listed as FILM 3105.
Prerequisite(s): 1.0 credit in Film Studies at the 2000-level, or permission of the School.

JOUR 3207 [0.5 credit]
Audio Journalism
In this workshop students will build on the principles and practices of audio journalism to produce stories and audio in various formats suitable for radio and digital publication.
Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and labs six hours a week.

JOUR 3208 [0.5 credit]
Video Journalism
In this workshop students will build on the principles and practices of video journalism to produce stories and video in various formats suitable for television and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and labs six hours a week.

JOUR 3225 [0.5 credit]
Reporting in Depth
Long-form journalistic writing skills development; techniques for thorough investigation of timely public issues. Study of outstanding feature and investigative writing examples. Students will pursue their own reporting projects.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 3205 (no longer offered).
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and practicum three hours a week.

JOUR 3235 [0.5 credit]
Digital Journalism
Further development of digital journalism skills. Students will produce journalism for online audiences using formats including written and spoken language, still and moving images.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 3205 (no longer offered).
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and labs three hours a week.

JOUR 3300 [0.5 credit]
Media Ethics in a Digital World
Ethical issues related to production and dissemination of news and other forms of content as they relate to digital environments. Different approaches to ethical decision-making and their application in contemporary settings.
Also listed as MPAD 3300.
Precludes additional credit for JOUR 3215 (no longer offered).
Prerequisite(s): JOUR 2201, JOUR 2202 and JOUR 2501 with a grade of C or higher in each.
Lectures three hours a week.
JOUR 3400 [0.5 credit]
Selected Topic in Journalism
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 3401 [0.5 credit]
Selected Topic in Journalism
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 3402 [0.5 credit]
Selected Topic in Journalism
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 3407 [0.5 credit]
Comparative Media Studies
The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.
Also listed as COMS 3407.
Precludes additional credit for COMM 3407 (no longer offered).
Prerequisite(s): third-year standing in B.J. Hons. or permission of the School of Journalism and Communication.
Lectures three hours a week.

JOUR 4001 [0.5 credit]
Journalism Now - and Next
Changes occurring in the media, in the public's relationship with the media and how journalists and news organizations respond. Practical issues and challenges in the professional life of a journalist.
Also listed as MPAD 4001.
Precludes additional credit for JOUR 4000 (no longer offered).
Prerequisite(s): fourth-year standing in the Bachelor of Journalism or in the Bachelor of Media Production and Design, or fourth-year standing and enrollment in the Minor in News Media and Information, or fourth-year standing in the Strategic Public Opinion stream of the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management.
Lectures and discussion three hours a week.

JOUR 4003 [0.5 credit]
The Digital Hub: Advanced Multimedia
A workshop designed to give students instruction in digital reporting and publishing as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3235 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5003, for which additional credit is precluded.
Workshops averaging eight hours a week.

JOUR 4004 [0.5 credit]
The Digital Hub: Advanced Audio
A workshop designed to give students instruction in audio journalism as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4206 (no longer offered).
Prerequisite(s): JOUR 3207 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5004, for which additional credit is precluded.
Workshops averaging eight hours per week.

JOUR 4005 [0.5 credit]
The Digital Hub: Advanced Video
A workshop designed to give students instruction in video journalism as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4207 (no longer offered).
Prerequisite(s): JOUR 3208 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5005, for which additional credit is precluded.
Workshops averaging eight hours a week.

JOUR 4100 [0.5 credit]
Special Topic
Examination of a topic in journalism not covered in depth in other courses. Seminar three hours a week.

JOUR 4101 [0.5 credit]
Special Topic
An examination of a topic in journalism not covered in depth in other courses. Topics may vary from year to year.
Seminar three hours a week.
JOUR 4300 [0.5 credit]
Specialized Journalism: Special Topic
Examination of a topic not covered in depth in other specialized journalism courses. Topics may vary from year to year. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.
Also listed as MPAD 4300.
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5300, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4301 [0.5 credit]
Specialized Journalism: Business and the Markets
Core skills development for business journalism: reading financial documents, covering activities of corporations, functioning of stock and other markets, trade policy and the broader economy, focus on contemporary business news and local publicly-traded companies. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5301, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4302 [0.5 credit]
Specialized Journalism: Business and Canadian Society
The intersection between business and public policy, from climate change to taxation, pensions, labour and corporate social responsibility. What business does and how the media covers it. Emphasis on explanatory/analytical reporting, production of a related data project as an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5302, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4303 [0.5 credit]
Specialized Journalism: Health and Science
The culture of health science research and major trends; key challenges confronting researchers and health science journalists around the world. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5303, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4304 [0.5 credit]
Specialized Journalism: Environment and Science
Major trends and research culture in climate and environmental sciences, focusing on key global concerns. Issues facing researchers and journalists. Focus on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5304, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4305 [0.5 credit]
Specialized Journalism: Canada and the U.S.
Exploration of the unique issues in Canada-U.S. relations, from diplomacy to trade. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5315, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.
JOUR 4306 [0.5 credit]
Specialized Journalism: Canada and the World
Diplomacy, war, terrorism, migration, the international economy, development and other issues of interest to journalists who want to write about Canada and international affairs. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5306, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4308 [0.5 credit]
Specialized Journalism: Sports and Sport Culture
Workshop equipping students with the skills to move beyond the clichés of sports writing and live event coverage. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5308, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4309 [0.5 credit]
Specialized Journalism: Arts and Culture
Students are introduced to arts and culture journalism, exploring issues and trends that are key to understanding and covering the arts and related cultural policy in Canada. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5309, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4310 [0.5 credit]
Specialized Journalism: Justice and the Law
Areas of law that journalists may encounter along with a practical explanation of how law works. Students gain the language and tools needed to successfully analyze and write about legal issues. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5310, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4311 [0.5 credit]
Specialized Journalism: Justice and The Supreme Court
Examination of the Supreme Court of Canada, and the role of journalists in covering it. Students attend hearings and gain insight into the court's role in the making and shaping of Canada. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5311, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4400 [0.5 credit]
Professional Skills: Special Topic
Examination of a topic in journalism not covered in depth in other courses.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.
Seminar three hours a week.

JOUR 4401 [0.5 credit]
Professional Skills: Data Storytelling
Instruction in telling stories from data. Focus on searching for, analyzing and mapping data, turning numbers into powerful narratives.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Lecture and practicum three hours a week.
JOUR 4402 [0.5 credit]
Professional Skills: Longform Writing
Instruction in longform story production. Focus on researching and writing, including the art and craft of writing for magazines.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Lecture and practicum three hours a week.

JOUR 4403 [0.5 credit]
Professional Skills: Strategic Communication
Workshop pairing student teams with non-profit groups that are in need of strategic communication advice. Instruction in planning and implementation.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Also offered at the graduate level, with different requirements, as JOUR 5508, for which additional credit is precluded.
Lecture and practicum three hours a week.

JOUR 4404 [0.5 credit]
Professional Skills: Freelancing for Media Professionals
Workshop preparing students to compete in a market that values the skills and mindset of entrepreneurial media workers.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Lecture and practicum three hours a week.

JOUR 4500 [0.5 credit]
Investigating Journalism: Special Topic
Examination of a topic in journalism not covered in depth in other courses.
Also listed as MPAD 4500.
Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.
Seminar three hours a week.

JOUR 4501 [0.5 credit]
Investigating Journalism: Gender, Identity and Inequality
How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis. Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations.
Includes: Experiential Learning Activity
Also listed as MPAD 4501.
Precludes additional credit for JOUR 4307 (no longer offered).
Prerequisite(s): third- or fourth-year standing in B.J. Hons. or permission of the School.
Seminar three hours a week.

JOUR 4502 [0.5 credit]
Investigating Journalism: Journalism and Conflict
For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.
Includes: Experiential Learning Activity
Also listed as MPAD 4502.
Prerequisite(s): fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4503 [0.5 credit]
Investigating Journalism: Journalism, Indigenous Peoples and Canada
Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous peoples in the era of reconciliation.
Includes: Experiential Learning Activity
Also listed as MPAD 4503.
Prerequisite(s): third- or fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4504 [0.5 credit]
Investigating Journalism: The Media and International Development
A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda?.
Includes: Experiential Learning Activity
Also listed as MPAD 4504.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.
JOUR 4505 [1.0 credit]
Investigating Journalism: The Power and Politics of Government
In-depth exploration of Canada's government, public policy and politics; parliamentary debate and committee hearings. Explanatory/analytical reporting; production of an extended work of journalism. Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4201 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4900 [1.0 credit]
Honours Tutorial
Students analyze some major achievements in contemporary journalism, through individual or group research. Students also have the opportunity to acquire background and experience in the managerial aspects and production of print and broadcast journalism. Students analyze some major achievements in contemporary journalism, through individual or group research. Students also have the opportunity to acquire background and experience in the managerial aspects and production of print and broadcast journalism. Prerequisite(s): fourth-year B.J. (Honours) standing.

Journalism and Humanities

This section presents the requirements for programs in:
• Bachelor of Journalism and Humanities B.J. Hum.

Program Requirements

Intermediate Language Requirement
1. GREK 2200 and GREK 2201
2. LATN 2200 and LATN 2201
3. FREN 1100 or FREN 2100
4. GERM 2010 and GERM 2020, or GERM 2110
5. ITAL 2010 and ITAL 2020, or ITAL 2110
6. RELI 2010
7. RUSS 2010 and RUSS 2020
8. SPAN 2010 and SPAN 2020, or SPAN 2110

Bachelor of Journalism and Humanities
B.J. Hum. (20.0 credits)

Note: students must enrol in this degree in their first year of study.

1. 1.0 credit in:
   JOUR 1001 [0.5] Foundations: Journalism in Context
   JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society

2. 2.0 credits in:
   JOUR 2201 [1.0] Fundamentals of Reporting
   JOUR 2202 [0.5] Digital Journalism Toolkit
   JOUR 2501 [0.5] Media Law

3. 2.5 credits in:
   JOUR 3207 [0.5] Audio Journalism
   JOUR 3208 [0.5] Video Journalism
   JOUR 3225 [0.5] Reporting in Depth
   JOUR 3235 [0.5] Digital Journalism
   JOUR 3300 [0.5] Media Ethics in a Digital World

4. 0.5 credit in:
   JOUR 4001 [0.5] Journalism Now - and Next

5. 2.0 credits from:
   Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism. (At least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses.)

   Journalism Publications
   JOUR 4003 [0.5] The Digital Hub: Advanced Multimedia
   JOUR 4004 [0.5] The Digital Hub: Advanced Audio
   JOUR 4005 [0.5] The Digital Hub: Advanced Video

   Specialized Journalism
   JOUR 4300 [0.5] Specialized Journalism: Special Topic
   JOUR 4301 [0.5] Specialized Journalism: Business and the Markets
   JOUR 4302 [0.5] Specialized Journalism: Business and Canadian Society
   JOUR 4303 [0.5] Specialized Journalism: Health and Science
   JOUR 4304 [0.5] Specialized Journalism: Environment and Science
   JOUR 4305 [0.5] Specialized Journalism: Canada and the U.S.
   JOUR 4306 [0.5] Specialized Journalism: Canada and the World
   JOUR 4308 [0.5] Specialized Journalism: Sports and Sport Culture
   JOUR 4309 [0.5] Specialized Journalism: Arts and Culture
   JOUR 4310 [0.5] Specialized Journalism: Justice and the Law
   JOUR 4311 [0.5] Specialized Journalism: Justice and The Supreme Court

   Professional Skills
   JOUR 4400 [0.5] Professional Skills: Special Topic
   JOUR 4401 [0.5] Professional Skills: Data Storytelling
   JOUR 4402 [0.5] Professional Skills: Longform Writing
   JOUR 4403 [0.5] Professional Skills: Strategic Communication
   JOUR 4404 [0.5] Professional Skills: Freelancing for Media Professionals

   Investigating Journalism
   JOUR 4500 [0.5] Investigating Journalism: Special Topic
   JOUR 4501 [0.5] Investigating Journalism: Gender, Identity and Inequality
   JOUR 4502 [0.5] Investigating Journalism: Journalism and Conflict
   JOUR 4503 [0.5] Investigating Journalism: Journalism, Indigenous Peoples and Canada
   JOUR 4504 [0.5] Investigating Journalism: The Media and International Development
   JOUR 4505 [1.0] Investigating Journalism: The Power and Politics of Government

6.a. 0.5 credit from:

702 The Academic Year (Graduate and Undergraduate Studies)
1.0 credit fulfilling the language requirement (see Note 3 below)

Total Credits 20.0

Notes
1. For Item 9 above, students who transfer into the B.J. Hum. may use up to 1.0 credit of any previously completed art and/or music courses (with the exception of advanced placement courses). Students normally take HUMS 2101 and HUMS 2102, or HUMS 3102 and HUMS 3103. Other combinations of these requirements may be allowed at the discretion of the College of the Humanities.

2. For Items 13 and 14 above, students who must take a beginner's level prerequisite to their intermediate language requirement should do so in place of RELI 1731 and HUMS 1005. Students who are already able to demonstrate a proficiency in a second language at an intermediate level may have the requirement waived, and in that case may be required to take an additional elective credit at the 2000-level or above in order to bring their total number of credits up to the required 20.0.

3. Students fulfilling the language requirement are not permitted to register in HIST 2304 to fulfill the requirement for Item 6a.

Regulations
In addition to the requirements listed below, students must satisfy:

1. The University regulations, including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

2. For B.J. Hum. students, the common regulations applying to all B.J. Hum. including those relating to Academic Performance Evaluation for the B.J.Hum as described in Section 7.5 of the Academic Regulations of the University section of this Calendar.

3. In addition to the graduation requirements of the University, a graduation candidate for the degree of Bachelor of Journalism and Humanities with Honours must present:
   a. a Core Humanities CGPA of at least 7.00,
   b. a minimum grade of C in each of the 2000-level and above JOUR courses presented for the degree;
   c. an overall CGPA of 7.00 or higher.

Requirement for Full Time Study
Students in second and higher years in the Bachelor of Journalism and Humanities program must complete a minimum of 4.0 credits by the end of the summer session. The School of Journalism and the College of the Humanities may permit students to study abroad for a year while remaining registered in the program. For those students permitted to study abroad, Carleton credits commensurate to studies taken abroad will be determined by the School of Journalism and the College of the Humanities and awarded towards the student's degree. In exceptional circumstances (usually financial need or sickness), the School of Journalism and the College of the Humanities may also permit students to take a leave
of absence for one year while remaining registered in the program.

Prohibited Courses
Courses below the 1000 level may not be used for credit in the Bachelor of Journalism and Humanities program.

Academic Performance Evaluation

Academic Performance Evaluation for Bachelor of Journalism and Humanities
The Bachelor of Journalism and Humanities degree distinguishes between a student's Overall CGPA and their Core Humanities CGPA.

The Core Humanities CGPA is calculated on the basis of the following four courses: HUMS 1000, HUMS 2000, HUMS 3000, HUMS 4000.

Continuation Regulations
1. Continuation in the Bachelor of Journalism and Humanities program requires the successful completion of 4.0 credits, including JOUR 1001 and JOUR 1002, by the first Academic Performance Evaluation.
   a. Students are in Good Standing at the first APE if they have an Overall CGPA of at least 7.0 and a Core Humanities CGPA of 7.00.
   b. Students who do not achieve Good Standing but who have an Overall CGPA of at least 6.0 and a Core Humanities CGPA of at least 6.00 are on Academic Warning. Those on Academic Warning must complete the following 2.0 credits of Journalism courses by the next APE, with a minimum final grade of C in each: JOUR 2201, JOUR 2202, JOUR 2501. (Note that the overall CGPA must be 7.0 or above by the next APE to be eligible to continue in Good Standing in the Bachelor of Journalism and Humanities.) Students who do not meet this requirement must leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).
   c. Students who do not achieve Good Standing and who have an Overall CGPA of at least 6.0 or a Core Humanities CGPA of less than 6.0 are required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).
2. Students are in Good Standing at any subsequent Academic Performance Evaluation if they have an Overall CGPA of 7.00 or higher and a Core Humanities CGPA of 7.00 or higher. A student who is not in Good Standing but who has an Overall CGPA of 6.00 or higher and Core Humanities CGPA of 6.00 or higher is on Academic Warning.
3. A student is required to leave the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP) if:
   a. the student was on Academic Warning and does not achieve Good Standing at the next Academic Performance Evaluation, OR
   b. the student has an Overall CGPA of less than 6.00 or a Core Humanities CGPA of less than 6.00 at any Academic Performance Evaluation.

Transfer into second year of the B.J.Hum.
The School maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA equivalent to 10.00 (A-) or better. Continuation in Good Standing at subsequent Academic Performance Evaluations requires an Overall CGPA of at least 7.0 and a Core Humanities CGPA of at least 7.0. An additional year may be necessary for transfer students to complete their degree requirements.

General prerequisite
1. Students may continue into 3000-level Journalism production courses JOUR 3207, JOUR 3208, JOUR 3225, JOUR 3235 if they attain a minimum grade of C in each of the following: JOUR 2201, JOUR 2202 and JOUR 2501. (Note that the overall CGPA must be 7.0 or above at each APE to be eligible to continue in Good Standing in the Bachelor of Journalism and Humanities.)
2. Students may continue into the 4000-level Journalism production courses JOUR 4003, JOUR 4004 and JOUR 4005 if they attain a minimum grade of C in each of the following: JOUR 3207, JOUR 3208, JOUR 3225, JOUR 3235. (Note that the overall CGPA must be 7.0 or above at each APE to be eligible to continue in Good Standing in the Bachelor of Journalism and Humanities.)

Transferring from the B.J.Hum. to the B.J. or B.Hum.
A student who wishes to transfer from the B.J.Hum. to the B.J. or the B.Hum. may apply through Admissions and will be accepted if, upon entry to the new program, they would be in Good Standing.

A student who fails any A.P.E. and who is consequently on Academic Warning or who must leave the program with Continue in Alternate (CA) may transfer into the B.J. or the B.Hum. only if they would be in Good Standing upon entry into their new degree.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.
Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree
- Bachelor of Journalism and Humanities (B.J.Hum.) (Honours)

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include 4U English. Note: students who already hold an undergraduate degree are not eligible to apply for the B.J.Hum. (Honours).

Advanced Standing
The B.J.Hum. (Honours) maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Transfers into higher years will not be considered.

Normally, offers are made to students with an overall CGPA of 10.00 (A-) or higher.

Humanities (HUMS) Courses

HUMS 1000 [1.0 credit]
Myth and Symbol
Recurring symbols in myth, epic and ritual representing the relation between the sacred and the profane, the origin of the cosmos, the basis of community, and formative human experiences. Primary sources drawn from ancient India and China, Mesopotamia, the Hebrew Bible, and Indigenous cultures.
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.

HUMS 1005 [0.5 credit]
Early Human Cultures
Cultural experiences of small scale societies, including kinship, rituals, magic, social structure, and subsistence. Reading may include the works of classic anthropologists such as Maine, Tylor, Morgan, and Boas.
Precludes additional credit for ANTH 1001 and ANTH 1003.
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week.

HUMS 1200 [0.5 credit]
Humanities and Classical Civilisation
The ideas which animated ancient Greek and Roman civilisation and which influenced later western cultural movements through a reading of literary, historical, and philosophical works. Authors include Homer, Herodotus, Thucydidies, the Greek Tragedians, Plato, Vergil, and Cicero.
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lecture three hours a week.

HUMS 1500 [0.5 credit]
Introduction to the Humanities: Five Books that Changed the World
A reading-intensive course on five influential books from Antiquity to the present day. Works may include the Bible, the Bhagavad Gita, Homer’s Odyssey, Plato’s Republic, Dante’s Inferno, Machiavelli’s The Prince, Shakespeare’s Hamlet, Mary Shelley’s Frankenstein, Nietzsche’s Beyond Good and Evil, Marx’s Communist Manifesto.
Prerequisite(s): enrolment in a degree program in the Faculty of Arts and Social Sciences, or the Faculty of Public Affairs. Students enrolled in the BHum. program are not eligible to register in this course.
Lecture three hours per week.

HUMS 2000 [1.0 credit]
Reason and Revelation
The origins of philosophy in ancient Greece and its pursuit in the medieval West, with special attention to knowledge, happiness, and love. Readings include works by Plato, Aristotle, Plotinus, Augustine, Boethius, Aquinas, and Dante.
Prerequisite(s): HUMS 1000 and enrolment in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.

HUMS 2101 [0.5 credit]
Art from Antiquity to the Medieval World
A chronological and thematic survey of the Arts from the earliest times to ca. 1400.
Precludes additional credit for HUMS 4101 (no longer offered).
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lecture three hours a week.

HUMS 2102 [0.5 credit]
Modern European Art 1527-2000
A chronological and thematic survey of the Arts from the sixteenth to the twenty-first century.
Precludes additional credit for HUMS 4101 (no longer offered) and HUMS 3101 (no longer offered).
Prerequisite(s): HUMS 2101 and restricted to students in the Bachelor of Humanities program.
Lectures three hours a week.

HUMS 3000 [1.0 credit]
Culture and Imagination
Major forms of literary, artistic, and philosophical expression from 1500-1800. Sources drawn from renaissance humanism, reformation theology, enlightenment and romantic philosophy.
Prerequisite(s): HUMS 2000 and enrolment in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.
HUMS 3102 [0.5 credit]
Western Music 1000-1850
Introduction to basic theory, harmony, history and interpretation of Western music including the Medieval, Renaissance, Baroque, Classical and early Romantic periods.
Includes: Experiential Learning Activity
Precludes additional credit for HUMS 4102 (no longer offered).
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week.

HUMS 3103 [0.5 credit]
Western Music 1850-2000
Western music from the mid-nineteenth century to the present with emphasis on the seminal contributions of Liszt, Wagner, Mahler, Debussy, Stravinsky, Schönberg and others.
Includes: Experiential Learning Activity
Precludes additional credit for HUMS 4102 (no longer offered).
Prerequisite(s): HUMS 3102 and restricted to students in the Bachelor of Humanities program.
Lecture three hours a week.

HUMS 3200 [1.0 credit]
European Literature
Major movements and works from Dante's Divine Comedy through Voltaire's Candide. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.
Also listed as ENGL 3201.
Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program.
Lectures three hours a week.

HUMS 3500 [0.5 credit]
Ancient and Medieval Intellectual History
Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from Archaic Greece to the High Middle Ages.
Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.
Lectures three hours a week.

HUMS 3550 [0.5 credit]
Renaissance and Early Modern Intellectual History
Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from the Early Renaissance to 1800.
Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.
Lectures three hours a week.

HUMS 4000 [1.0 credit]
Politics, Modernity and the Common Good
Modern and post-modern ways of thinking and doing, including revolutionary new ideas in politics, philosophy, culture, economics, and international relations. Thinkers considered include Arendt, Foucault, Hegel, Heidegger, Hobbes, Kant, Marx, Nietzsche, Polanyi, Rousseau, Said, and Taylor.
Includes: Experiential Learning Activity
Prerequisite(s): HUMS3000 and enrolment in the Bachelor of Humanities program.
Lectures three hours a week and tutorials one and a half hours a week.

HUMS 4001 [0.5 credit]
Directed Studies in the Humanities
A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.
Lecture three hours a week and tutorials one and a half hours a week.

HUMS 4002 [0.5 credit]
Directed Studies in the Humanities
A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program and Good Standing in the program.

HUMS 4103 [0.5 credit]
Science in the Modern World
An introduction to the major scientific ideas of our time (such as Big Bang theory, molecular genetics, evolution, atomic structure), and the impact of technology on society (e.g. global warming, pollution, genetically modified foods, viral infections).
Includes: Experiential Learning Activity
Precludes additional credit for HUMS 4100 (no longer offered).
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week.

HUMS 4500 [0.5 credit]
Modern Intellectual History
Examination of some of the major ideas and ideologies from 1800 to the present, including romanticism, liberalism, nationalism, symbolism, socialism, Freidianism, communism, feminism, and postmodernism.
Includes: Experiential Learning Activity
Precludes additional credit for HUMS 4104.
Prerequisite(s): restricted to students in the Bachelor of Humanities program.
Lectures three hours a week.
HUMS 4901 [0.5 credit]
Research Seminar: Antiquity to the Middle Ages
An interdisciplinary seminar on a selected topic in the humanities from Antiquity to the Middle Ages. The topic will vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.
Seminar three hours a week.

HUMS 4902 [0.5 credit]
Research Seminar: Renaissance to Enlightenment
An interdisciplinary seminar on a selected topic in the humanities from the Renaissance to the Enlightenment. The topic will vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.
Seminar three hours a week.

HUMS 4903 [0.5 credit]
Research Seminar: Romanticism to the Present
An interdisciplinary seminar on a selected topic in the humanities from Romanticism to the present. The topic will vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.
Seminar three hours a week.

HUMS 4904 [0.5 credit]
Research Seminar: Non-Western Traditions
An interdisciplinary seminar on a selected topic in the humanities as expressed in aboriginal and Non-Western cultures. The topic will vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.
Seminar three hours a week.

JOUR 1001 [0.5 credit]
Foundations: Journalism in Context
This course charts a history of the fourth estate in the West from the invention of the printing press to the ascendance of networked digital communication, focusing on the political, economic and technological contexts that have shaped the news media as institutions and industries.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 1000.
Prerequisite(s): for Journalism Honours students only.
Lectures and discussion three hours a week.

JOUR 1002 [0.5 credit]
Foundations: Practicing Journalism in a Diverse Society
The course introduces students to the concepts, issues and challenges in the contemporary Canadian media environment that will shape their professional role as practicing journalists. It will also provide students with an initial opportunity to practice some basic journalistic skills.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 1000.
Prerequisite(s): for Journalism Honours students only.
Lectures and discussion three hours a week.

JOUR 1003 [0.5 credit]
Discovering Journalism: Traditional Tales to Tweets
Journalism's evolution as community creator and guardian of democracy; its greatest scoops and worst misdeeds. From ancient news-sharing to 21st-century expression in blogs, tweets and investigative masterpieces, this course surveys ethical, political and economic contexts of journalism. Not open to Journalism majors.
Lecture three hours a week.

JOUR 1004 [0.5 credit]
Delivering Journalism: Innovators v. Imposters
Activists, imposters and innovators increasingly crowd in on traditional journalism's role of presenting reliable news and fair discussion. How is public awareness now shaped – and misshaped – and how must journalism reshape, update and defend its borders to serve communities better?
Prerequisite(s): JOUR 1001, JOUR 1002, JOUR 1003, or permission of the School of Journalism and Communication.
Lecture and discussion three hours a week.

JOUR 2106 [0.5 credit]
The Documentary
Examination of the work of individual film makers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered.
Also listed as FILM 2106.
Precludes additional credit for JOUR 2105, FILM 2105.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.
Lecture and screening three hours a week, lecture one hour a week.

JOUR 2201 [1.0 credit]
Fundamentals of Reporting
Introduction to the techniques journalists use to gather information quickly, accurately and ethically, and to present reports and features in clear, engaging ways. Newsroom exercises provide experience in reporting, writing, editing and using digital tools, including photography and social media.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.
Lectures, discussion and practicum six hours a week.
JOUR 2202 [0.5 credit]
Digital Journalism Toolkit
An introduction to the digital tools and social media journalists use to gather, verify and present material to audiences. Lab exercises provide experience producing photographs, audio, and video for journalistic storytelling and the use of social media tools and platforms for reporting and publishing.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program. Students must be enrolled in this course concurrently with JOUR 2201.
Lectures and lab three hours a week.

JOUR 2501 [0.5 credit]
Media Law
A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court.
Also listed as COMS 2501, MPAD 2501.
Precludes additional credit for COMM 2501 (no longer offered).
Prerequisite(s): JOUR 1001, JOUR 1002, COMS 1001, COMS 1002, or JOUR 1003 and enrollment in the Minor in News Media and Information, or enrollment in the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School of Journalism and Communication.
Lectures and discussion three hours a week.

JOUR 3105 [0.5 credit]
Questions of Documentary Practice
Theoretical implications of documentary film and documentary television practice.
Also listed as FILM 3105.
Prerequisite(s): 1.0 credit in Film Studies at the 2000-level, or permission of the School.

JOUR 3207 [0.5 credit]
Audio Journalism
In this workshop students will build on the principles and practices of audio journalism to produce stories and audio in various formats suitable for radio and digital publication.
Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and labs six hours a week.

JOUR 3208 [0.5 credit]
Video Journalism
In this workshop students will build on the principles and practices of video journalism to produce stories and video in various formats suitable for television and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and labs six hours a week.

JOUR 3225 [0.5 credit]
Reporting in Depth
Long-form journalistic writing skills development; techniques for thorough investigation of timely public issues. Study of outstanding feature and investigative writing examples. Students will pursue their own reporting projects.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 3205 (no longer offered).
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and practicum three hours a week.

JOUR 3300 [0.5 credit]
Media Ethics in a Digital World
Ethical issues related to production and dissemination of news and other forms of content as they relate to digital environments. Different approaches to ethical decision-making and their application in contemporary settings.
Also listed as MPAD 3300.
Precludes additional credit for JOUR 3215 (no longer offered).
Prerequisite(s): JOUR 2201, JOUR 2202 and JOUR 2501 with a grade of C or higher in each.
Lectures three hours a week.
JOUR 3400 [0.5 credit]
Selected Topic in Journalism
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 3401 [0.5 credit]
Selected Topic in Journalism
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 3402 [0.5 credit]
Selected Topic in Journalism
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 3407 [0.5 credit]
Comparative Media Studies
The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.
Also listed as COMS 3407.
Precludes additional credit for COMM 3407 (no longer offered).
Prerequisite(s): third-year standing in B.J. Hons. or permission of the School of Journalism and Communication.
Lectures three hours a week.

JOUR 4001 [0.5 credit]
Journalism Now - and Next
Changes occurring in the media, in the public’s relationship with the media and how journalists and news organizations respond. Practical issues and challenges in the professional life of a journalist.
Also listed as MPAD 4001.
Precludes additional credit for JOUR 4000 (no longer offered).
Prerequisite(s): fourth-year standing in the Bachelor of Journalism or in the Bachelor of Media Production and Design, or fourth-year standing and enrollment in the Minor in News Media and Information, or fourth-year standing in the Strategic Public Opinion stream of the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management.
Lectures and discussion three hours a week.

JOUR 4003 [0.5 credit]
The Digital Hub: Advanced Multimedia
A workshop designed to give students instruction in digital reporting and publishing as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3235 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5003, for which additional credit is precluded.
Workshops averaging eight hours a week.

JOUR 4004 [0.5 credit]
The Digital Hub: Advanced Audio
A workshop designed to give students instruction in audio journalism as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4206 (no longer offered).
Prerequisite(s): JOUR 3207 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5004, for which additional credit is precluded.
Workshops averaging eight hours per week.

JOUR 4005 [0.5 credit]
The Digital Hub: Advanced Video
A workshop designed to give students instruction in video journalism as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4207 (no longer offered).
Prerequisite(s): JOUR 3208 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5005, for which additional credit is precluded.
Workshops averaging eight hours a week.

JOUR 4100 [0.5 credit]
Special Topic
Examination of a topic in journalism not covered in depth in other courses. Seminar three hours a week.
Seminar three hours a week.

JOUR 4101 [0.5 credit]
Special Topic
An examination of a topic in journalism not covered in depth in other courses. Topics may vary from year to year.
Seminar three hours a week.
JOUR 4300 [0.5 credit]
Specialized Journalism: Special Topic
Examination of a topic not covered in depth in other specialized journalism courses. Topics may vary from year to year. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.
Also listed as MPAD 4300.
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5300, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4301 [0.5 credit]
Specialized Journalism: Business and the Markets
Core skills development for business journalism: reading financial documents, covering activities of corporations, functioning of stock and other markets, trade policy and the broader economy, focus on contemporary business news and local publicly-traded companies. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5301, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4302 [0.5 credit]
Specialized Journalism: Business and Canadian Society
The intersection between business and public policy, from climate change to taxation, pensions, labour and corporate social responsibility. What business does and how the media covers it. Emphasis on explanatory/analytical reporting, production of a related data project as an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5302, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4303 [0.5 credit]
Specialized Journalism: Health and Science
The culture of health science research and major trends; key challenges confronting researchers and health science journalists around the world. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5303, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4304 [0.5 credit]
Specialized Journalism: Environment and Science
Major trends and research culture in climate and environmental sciences, focusing on key global concerns. Issues facing researchers and journalists. Focus on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5304, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4305 [0.5 credit]
Specialized Journalism: Canada and the U.S.
Exploration of the unique issues in Canada-U.S. relations, from diplomacy to trade. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5315, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.
JOUR 4306 [0.5 credit]
Specialized Journalism: Canada and the World
Diplomacy, war, terrorism, migration, the international economy, development and other issues of interest to journalists who want to write about Canada and international affairs. Emphasis on explanatory/analytical reporting; production of an extended work of journalism. Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5306, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4308 [0.5 credit]
Specialized Journalism: Sports and Sport Culture
Workshop equipping students with the skills to move beyond the clichés of sports writing and live event coverage. Emphasis on explanatory/analytical reporting; production of an extended work of journalism. Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5308, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4309 [0.5 credit]
Specialized Journalism: Arts and Culture
Students are introduced to arts and culture journalism, exploring issues and trends that are key to understanding and covering the arts and related cultural policy in Canada. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism. Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5309, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4310 [0.5 credit]
Specialized Journalism: Justice and the Law
Areas of law that journalists may encounter along with a practical explanation of how law works. Students gain the language and tools needed to successfully analyze and write about legal issues. Emphasis on explanatory/analytical reporting; production of an extended work of journalism. Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5310, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4311 [0.5 credit]
Specialized Journalism: Justice and The Supreme Court
Examination of the Supreme Court of Canada, and the role of journalists in covering it. Students attend hearings and gain insight into the court's role in the making and shaping of Canada. Emphasis on explanatory/analytical reporting; production of an extended work of journalism. Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5311, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4400 [0.5 credit]
Professional Skills: Special Topic
Examination of a topic in journalism not covered in depth in other courses.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Seminar three hours a week.

JOUR 4401 [0.5 credit]
Professional Skills: Data Storytelling
Instruction in telling stories from data. Focus on searching for, analyzing and mapping data, turning numbers into powerful narratives. Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Lecture and practicum three hours a week.
JOUR 4402 [0.5 credit]
Professional Skills: Longform Writing
Instruction in longform story production. Focus on researching and writing, including the art and craft of writing for magazines.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Lecture and practicum three hours a week.

JOUR 4403 [0.5 credit]
Professional Skills: Strategic Communication
Workshop pairing student teams with non-profit groups that are in need of strategic communication advice. Instruction in planning and implementation.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Also offered at the graduate level, with different requirements, as JOUR 5508, for which additional credit is precluded.
Lecture and practicum three hours a week.

JOUR 4404 [0.5 credit]
Professional Skills: Freelancing for Media Professionals
Workshop preparing students to compete in a market that values the skills and mindset of entrepreneurial media workers.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Lecture and practicum three hours a week.

JOUR 4500 [0.5 credit]
Investigating Journalism: Special Topic
Examination of a topic in journalism not covered in depth in other courses.
Also listed as MPAD 4500.
Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.
Seminar three hours a week.

JOUR 4501 [0.5 credit]
Investigating Journalism: Gender, Identity and Inequality
How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis.
Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations.
Includes: Experiential Learning Activity
Also listed as MPAD 4501.
Precludes additional credit for JOUR 4307 (no longer offered).
Prerequisite(s): third- or fourth-year standing in B.J. Hons. or permission of the School.
Seminar three hours a week.

JOUR 4502 [0.5 credit]
Investigating Journalism: Journalism and Conflict
For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.
Includes: Experiential Learning Activity
Also listed as MPAD 4502.
Prerequisite(s): fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4503 [0.5 credit]
Investigating Journalism: Journalism, Indigenous Peoples and Canada
Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous peoples in the era of reconciliation.
Includes: Experiential Learning Activity
Also listed as MPAD 4503.
Prerequisite(s): third- or fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4504 [0.5 credit]
Investigating Journalism: The Media and International Development
A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda?.
Includes: Experiential Learning Activity
Also listed as MPAD 4504.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.
JOUR 4505 [1.0 credit]
Investigating Journalism: The Power and Politics of Government
In-depth exploration of Canada's government, public policy and politics; parliamentary debate and committee hearings. Explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4201 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4900 [1.0 credit]
Honours Tutorial
Students analyze some major achievements in contemporary journalism, through individual or group research. Students also have the opportunity to acquire background and experience in the managerial aspects and production of print and broadcast journalism.
Prerequisite(s): fourth-year B.J. (Honours) standing.

Korean Language (Minor)
This section presents the requirements for programs in:
• Minor in Korean Language
Minor in Korean Language (4.0 credits)
Open to all undergraduate degree students.

Requirements:
1. 3.0 credits in KORE 3.0
2. 1.0 credit in KORE at the 3000-level or higher 1.0
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.
4. The remaining requirements of the major discipline(s) and degree must be satisfied

Total Credits 4.0

Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

KORE 1010 [0.5 credit]
First-Year Korean I
For students with no knowledge of Korean. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for LANG 1010, when the language of instruction was Korean.
Four hours a week.

KORE 1020 [0.5 credit]
First-Year Korean II
Continuation of first-year Korean. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for LANG 1020, when the language of instruction was Korean.
Prerequisite(s): grade of C or higher in KORE 1010, or in LANG 1010 (when the language of instruction was Korean), or permission of the School.
Four hours a week.

KORE 2010 [0.5 credit]
Second-Year Korean I
Further study of Korean to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for LANG 2010, when the language of instruction was Korean.
Prerequisite(s): grade of C or higher in KORE 1020, or in LANG 1020 (when the language of instruction was Korean), or permission of the School.
Four hours a week.

Regulations
In addition to the requirements listed here, students must satisfy:
1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Korean (KORE) Courses
Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.
KORE 2020 [0.5 credit]
Second-Year Korean II
Continuation of second-year Korean. Further study of Korean to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for LANG 2020, when the language of instruction was Korean. Prerequisite(s): grade of C or higher in KORE 2010, or in LANG 2010 (when the language of instruction was Korean), or permission of the School. Four hours a week.

KORE 3010 [0.5 credit]
Third-Year Korean I
Continuation of the study of Korean to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Precludes additional credit for LING 3009 (when the language of instruction was Korean). Prerequisite(s): grade of C or higher in KORE 2020 or LANG 2020 (if taken in winter 2017), or permission of the School. Seminar three hours a week.

KORE 3020 [0.5 credit]
Third-Year Korean II
Continuation of third-year Korean. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Prerequisite(s): grade of C or higher in KORE 3010, or permission of the School. Seminar three hours a week.

KORE 4010 [0.5 credit]
Fourth-Year Korean I
Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Includes: Experiential Learning Activity. Prerequisite(s): grade of C or higher in KORE 3020, or permission of the School. Seminar three hours a week.

KORE 4020 [0.5 credit]
Fourth-Year Korean II
Continuation of Fourth-Year Korean. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Prerequisite(s): grade of C or higher in KORE 4010, or permission of the School. Seminar three hours a week.

Latin American and Caribbean Studies

This section presents the requirements for programs in:
- Specialization in Latin American and Caribbean Studies B.G.In.S. Honours
- Stream in Latin American and Caribbean Studies B.G.In.S.
- Minor in Latin American and Caribbean Studies

Program Requirements
Bachelor of Global and International Studies (B.G.In.S.)
Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Latin American and Caribbean Studies
B.G.In.S. Honours (20.0 credits)

A. Credits Included in Major CGPA (12.0 credits)
1. 4.5 credits in: Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation
   - GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization
   Note: Language Requirement - Students choosing the Latin America and Caribbean Studies Specialization must fulfil their language requirement with a language relevant to Latin America and the Caribbean other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.
   a. 1.0 credit in: Foundations
      - LACS 1001 [0.5] Introduction to Latin American and Caribbean Studies I
      - LACS 1002 [0.5] Introduction to Latin American and Caribbean Studies II
   b. 1.0 credit from: History
      - HIST 2308 [0.5] Colonial Latin America
      - HIST 2309 [0.5] Modern Latin America
      - HIST 2710 [0.5] Introduction to Caribbean History
   c. 0.5 credit from: Politics

714  The Academic Year (Graduate and Undergraduate Studies)
d. 3.0 credits from: Courses with LACS Content

ANTH 2670 [0.5] Andean Ethnography
ANTH 2650 [0.5] Ethnography of Mesoamerica
ANTH 4730 [0.5] Colonialism and Post-Colonialism
ENGL 2966 [0.5] Literatures of the Americas I
ENGL 2957 [0.5] Literatures of the Americas II
GEOG 3023 [0.5] Cities in a Global World
GEOG 3025 [0.5] Geographies of Selected Regions
GEOG 3030 [0.5] Regional Field Excursion
GINS 3900 [0.5] International Placement
GINS 4900 [0.5] Tutorial in Global and International Studies
GINS 4908 [1.0] Honours Research Essay
HIST 3704 [0.5] Aztecs
HIST 3710 [0.5] Themes in Caribbean History
HIST 3712 [0.5] Mexico: Aztecs to Narcos
HIST 3713 [0.5] Gender and Sexuality in Latin America
HIST 4700 [1.0] Seminar in World History
HIST 4915 [0.5] Topics in History (topics in LACS)
LACS 4001 [0.5] Issues in Latin American and Caribbean Studies (if not used toward Item f. Capstone Seminar, below)
LACS 4819 [0.5] Latin America and the World (if not used toward Item f. Capstone Seminar, below)
SOCI 4730 [0.5] Colonialism and Post-Colonialism
e. 1.5 credits from: Context
ANTH 2020 [0.5] Race and Ethnicity
ANTH 2040 [0.5] Anthropology and Gender
ANTH 2670 [0.5] Ethnography of Brazil
ANTH 2850 [0.5] Development and Underdevelopment
ANTH 3020 [0.5] Studies in Race and Ethnicity
ANTH 3027 [0.5] Studies in Globalization and Human Rights
ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples
ECON 3508 [0.5] Introduction to Economic Development
ECON 4507 [0.5] The Economics of Development
ECON 4508 [0.5] International Aspects of Economic Development
ENGL 3965 [0.5] Intro to Postcolonial Theory
ENGL 3972 [0.5] Studies in Postcolonial Literature
ENGL 4802 [0.5] Race, Ethnicity and Canadian Lit.
ENGL 4947 [0.5] Issues in Diaspora Literature
ENGL 4975 [0.5] Issues in Postcolonial Theory
ENGL 4976 [0.5] Issues in Postcolonial Literature
GEOG 2200 [0.5] Global Connections
GEOG 2300 [0.5] Space, Place and Culture
GEOG 3021 [0.5] Geographies of Culture and Identity
GEOG 3024 [0.5] Understanding Globalization
GEOG 3209 [0.5] Sustainability and Environment in the South
GEOG 3404 [0.5] Geographies of Economic Development
GEOG 4024 [0.5] Seminar in Globalization
HIST 3217 [0.5] Empire and Globalization
HUMR 2202 [0.5] Power Relations and Human Rights
HUMR 2401 [0.5] Political Repression
HUMR 3501 [0.5] Social, Economic and Cultural Rights
HUMR 3503 [0.5] Global Environmental Justice
HUMR 4201 [0.5] Citizenship and Human Rights
LAWS 3208 [0.5] International Trade Regulation
MGDS 2000 [0.5] Global Migration and Transnationalism
PSCI 2102 [0.5] Comparative Politics of the Global South
PSCI 2602 [0.5] International Relations: Global Political Economy
PSCI 3105 [0.5] Imperialism
PSCI 3307 [0.5] Politics of Human Rights
PSCI 3502 [0.5] Gender and Politics: Global South
PSCI 3600 [0.5] International Institutions
PSCI 3802 [0.5] Globalization and Human Rights
PSCI 4104 [0.5] Development in the Global South - Theory and Practice
PSCI 4105 [0.5] Selected Problems in Development in the Global South
PSCI 4500 [0.5] Gender and Globalization
PSCI 4505 [0.5] Transitions to Democracy
SOCI 2020 [0.5] Race and Ethnicity
SOCI 3020 [0.5] Studies in Race and Ethnicity
SOCI 3027 [0.5] Globalization and Human Rights
f. 0.5 credit in: Capstone Seminar
LACS 4001 [0.5] Issues in Latin American and Caribbean Studies
LACS 4819 [0.5] Latin America and the World
PSCI 4819 [0.5] Latin America and the World

B. Credits Not Included in the Major CGPA (8.0 credits)
4. 8.0 credits in: Free Electives 8.0
C. Additional Requirements
5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits 20.0

Stream in Latin American and Caribbean Studies B.G.In.S. (15.0 credits)

Credits Included in the Major CGPA (8.0 credits)
1. 4.0 credits in: Core Courses 4.0
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from: the Stream 4.0
Note: Language Requirement - Students choosing the Latin America and Caribbean Studies Stream must fulfill their language requirement with a language relevant to Latin America and the Caribbean other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

a. Foundations
LACS 1001 [0.5] Introduction to Latin American and Caribbean Studies I
LACS 1002 [0.5] Introduction to Latin American and Caribbean Studies II

b. History
HIST 2308 [0.5] Colonial Latin America
HIST 2309 [0.5] Modern Latin America
HIST 2710 [0.5] Introduction to Caribbean History

c. Politics
PSCI 3204 [0.5] Politics of Latin America
PSCI 3205 [0.5] Mexican Politics

d. Courses with LACS Content
ANTH 2640 [0.5] Andean Ethnography
ANTH 2650 [0.5] Ethnography of Mesoamerica
ENGL 2956 [0.5] Literatures of the Americas I
ENGL 2957 [0.5] Literatures of the Americas II
GEOG 2200 [0.5] Global Connections
GEOG 2300 [0.5] Space, Place and Culture
GEOG 3020 [0.5] Geographies of Culture and Identity
GEOG 3021 [0.5] Geographies of Culture and Identity
GEOG 3024 [0.5] Sustainability and Environment in the South
GEOG 3025 [0.5] Geographies of Economic Development
GEOG 3026 [0.5] Geographies of Economic Development
GEOG 3027 [0.5] Geographies of Economic Development
HIST 2710 [0.5] Introduction to Caribbean History
HIST 3705 [0.5] Mexico: Aztecs to Narcos
HUMR 2202 [0.5] Power Relations and Human Rights
HUMR 2401 [0.5] Political Repression

B. Credits Not Included in the Major CGPA (7.0 credits):
3. 7.0 credits in: Free Electives

C. Additional Requirements
4. The Language requirement must be met.

Total Credits 15.0

Minor in Latin American and Caribbean Studies (4.0 credits)
This minor is available to all undergraduate degree students with the exception of those in the B.G.In.S. Specialization or Stream in Latin American and Caribbean Studies.

Requirements
1. 1.0 credit in:
   LACS 1001 [0.5] Introduction to Latin American and Caribbean Studies I
   LACS 1002 [0.5] Introduction to Latin American and Caribbean Studies II

2. 1.0 credit from Approved Latin American and Caribbean Studies Electives at the 2000-level or higher

3. 1.0 credit from Approved Latin American and Caribbean Studies Electives at the 3000-level or higher

4. 0.5 credit from:
   LACS 4001 [0.5] Issues in Latin American and Caribbean Studies
   LACS 4819 [0.5] Latin America and the World

5. 0.5 credit from Approved Latin American and Caribbean Studies Electives at the 4000-level or higher

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Approved Latin American and Caribbean Studies Electives

Anthropology
ANTH 2020 [0.5] Race and Ethnicity
ANTH 2040 [0.5] Anthropology and Gender
ANTH 2640 [0.5] Andean Ethnography
ANTH 2650 [0.5] Ethnography of Mesoamerica
ANTH 2670 [0.5] Ethnography of Brazil
Latin American and Caribbean Studies (LACS) Courses

**LACS 1001 [0.5 credit]**
Introduction to Latin American and Caribbean Studies

An introduction to the history, culture, societies, and literatures of the region. Students will get a broad overview of the region and will be introduced to the disciplines used to study these societies.

Lectures three hours per week.

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<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ANTH 2850 [0.5]</td>
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<td>Understanding Globalization</td>
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<td>Latin America and the World (if not used toward Item 4, above)</td>
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<td>LAWS 3208 [0.5]</td>
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<td>MGDS 2000 [0.5]</td>
<td>Global Migration and Transnationalism (Migration and Diaspora Studies)</td>
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<td>PSCI 2602 [0.5]</td>
<td>International Relations: Global Political Economy</td>
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<tr>
<td>SOCI 4730 [0.5]</td>
<td>Colonialism and Post-Colonialism</td>
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</tbody>
</table>

**Regulations**

In addition to the program requirements described here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).
2. For B.G.In.S. students the regulations pertaining to the B.G.In.S. degree (see the Global and International Studies section of this Calendar).

**Latin American and Caribbean Studies (LACS) Courses**

**LACS 1001 [0.5 credit]**

Introduction to Latin American and Caribbean Studies

An introduction to the history, culture, societies, and literatures of the region. Students will get a broad overview of the region and will be introduced to the disciplines used to study these societies.

Lectures three hours per week.
LACS 1002 [0.5 credit]
Introduction to Latin American and Caribbean Studies II
An interdisciplinary introduction to the major political, economic, environmental, and geographical issues confronting the region.
Lectures three hours per week.

LACS 4001 [0.5 credit]
Issues in Latin American and Caribbean Studies
An examination of the major issues confronting Latin America and the Caribbean including democratization, economic integration, indigenous and women’s movements, human rights, social justice, and political change.
Prerequisite(s): fourth-year standing or permission from Latin American and Caribbean Studies.
Seminar three hours per week.

LACS 4819 [0.5 credit]
Latin America and the World
Latin America's changing relations with states, international institutions and non-state actors in the Global North and South. Topics may include security, South-South cooperation, trade, investment and transnational migration and drug trafficking.
Also listed as PSCI 4819.
Prerequisite(s): fourth-year standing or permission from Latin American and Caribbean Studies.
Seminar three hours a week.

Program Requirements
Law
B.A. Honours (20.0 credits)
A. Credits Included in the Major CGPA (9.0 credits)
1. 1.0 credit in:
   - LAWS 1001 [0.5] Introduction to Legal Studies 1
   - LAWS 1002 [0.5] Introduction to Legal Studies 2
2. 0.5 credit from:
   - LAWS 2201 [0.5] Persons and Property
   - LAWS 2202 [0.5] Obligations
3. 0.5 credit from:
   - LAWS 2301 [0.5] Criminal Justice System
   - LAWS 2302 [0.5] Criminal Law
4. 0.5 credit from:
   - LAWS 2105 [0.5] Social Justice and Human Rights
   - LAWS 2501 [0.5] Law, State and Constitution
   - LAWS 2502 [0.5] Law, State and Citizen
   - LAWS 2601 [0.5] Public International Law
5. 0.5 credit from:
   - Items 2-4 not already used to fulfill those items.
6. 1.0 credit in:
   - LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1
   - LAWS 3908 [0.5] Methodological Approaches in Legal Studies 2
7. 3.0 credits in LAWS at the 4000-level or above or in IPAF 4900 (with permission of the department).
8. 2.0 credits in LAWS
9. 8.0 credits in electives not in LAWS
10. 3.0 credits in free electives.
Total Credits 20.0

Notes:
1. Students with a Major in Law are encouraged, but not required, to consider completing a Minor in another discipline in order to broaden their exposure to that discipline.

Law
B.A. Combined Honours (20.0 credits)
A. Credits Included in the Law Major CGPA (6.5 credits)
1. 1.0 credit in:
   - LAWS 1001 [0.5] Introduction to Legal Studies 1
   - LAWS 1002 [0.5] Introduction to Legal Studies 2
2. 0.5 credit from:
   - LAWS 2201 [0.5] Persons and Property
   - LAWS 2202 [0.5] Obligations
3. 0.5 credit from:
   - LAWS 2301 [0.5] Criminal Justice System
   - LAWS 2302 [0.5] Criminal Law
4. 0.5 credit from:
   - LAWS 2105 [0.5] Social Justice and Human Rights
   - LAWS 2501 [0.5] Law, State and Constitution
   - LAWS 2502 [0.5] Law, State and Citizen
   - LAWS 2601 [0.5] Public International Law
Law and Human Rights

B.A. Combined Honours (20.0 credits)

Students may complete a B.A.(Honours) in Law and Human Rights. Students must complete the Law - B.A. Combined Honours requirements stated above. The Human Rights requirements are offered jointly by the Departments of Law, Philosophy, Political Science and Sociology: please consult the Human Rights program entry for details concerning the Human Rights component of the program.

Law with Concentration in Law, Policy and Government

B.A. Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Law, Policy and Government are those in Items 2, 7, 8, 9 below.

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit in:
   - LAWS 1001 [0.5] Introduction to Legal Studies 1
   - LAWS 1002 [0.5] Introduction to Legal Studies 2
2. 1.0 credit in:
   - LAWS 2501 [0.5] Law, State and Constitution
   - LAWS 2502 [0.5] Law, State and Citizen
3. 0.5 credits from:
   - LAWS 2201 [0.5] Persons and Property
   - LAWS 2202 [0.5] Obligations
4. 0.5 credit from:
   - LAWS 2301 [0.5] Criminal Justice System
   - LAWS 2302 [0.5] Criminal Law
5. 0.5 credit from:
   - LAWS 2105 [0.5] Social Justice and Human Rights
   - LAWS 2601 [0.5] Public International Law
   (or 0.5 credit from Items 3-4 not already used to fulfil those items)
6. 1.0 credit in:
   - LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1
   - LAWS 3908 [0.5] Methodological Approaches in Legal Studies 2
7. 1.5 credits in:
   - LAWS 3005 [0.5] Law and Regulation

8. 2.0 credits from:
   - LAWS 3106 [0.5] Law and Social Regulation
   - LAWS 3405 [0.5] Labour Law
   - LAWS 3500 [0.5] Constitutional Law
   - LAWS 3502 [0.5] Regulating Freedom of Expression in Canada
   - LAWS 3503 [0.5] Equality and Discrimination
   - LAWS 3504 [0.5] Law and Aboriginal Peoples
   - LAWS 3509 [0.5] The Charter of Rights Topics
   - LAWS 3800 [0.5] Law of Environmental Quality

9. 1.5 credits from:
   - LAWS 4006 [0.5] Religion and State in Canada
   - LAWS 4101 [0.5] Contemporary Justice Theories
   - LAWS 4102 [0.5] Controversies in Rights Theory
   - LAWS 4507 [0.5] Administrative Law and Control
   - LAWS 4510 [0.5] Topics in Law, Policy and Government
   - LAWS 4603 [0.5] Transitional Justice
   - LAWS 4607 [0.5] Immigration and Refugee Law
   - LAWS 4800 [0.5] Environment and Social Justice
   - LAWS 4901 [0.5] Tutorial in Law
   - LAWS 4902 [0.5] Tutorial in Law
   - LAWS 4908 [1.0] Honours Paper

10. 1.0 credit in LAWS at the 4000 level or above

B. Credits Not Included in the Major CGPA (9.5 credits)

11. 8.0 credits in electives not in LAWS

12. 1.5 credits in free electives.

Total Credits 20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 9 above must complete an approved topic related to the theme of the Concentration.

2. Students completing the B.A. (Honours) in Law with a Concentration in Law, Policy and Government are encouraged, but not required, to consider completing a Minor in another discipline (e.g. Political Science) to broaden their exposure to that discipline.

3. The Concentration in Law, Policy and Government is not available to students in the Law B.A. program.

Law with Concentration in Law, Policy and Government

B.A. Combined Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Law, Policy and Government are those in Items 2, 7, 8, 9 below.

A. Credits Included in the Law Major CGPA (8.0 credits)

1. 1.0 credit in:
   - LAWS 1001 [0.5] Introduction to Legal Studies 1
   - LAWS 1002 [0.5] Introduction to Legal Studies 2
2. 1.0 credit in:
   - LAWS 2501 [0.5] Law, State and Constitution
   - LAWS 2502 [0.5] Law, State and Citizen
3. 0.5 credits from:
   - LAWS 2201 [0.5] Persons and Property
   - LAWS 2202 [0.5] Obligations
4. 0.5 credit from:
   - LAWS 2301 [0.5] Criminal Justice System
   - LAWS 2302 [0.5] Criminal Law
5. 0.5 credit from:
   - LAWS 2105 [0.5] Social Justice and Human Rights
   - LAWS 2601 [0.5] Public International Law
   (or 0.5 credit from Items 3-4 not already used to fulfil those items)
6. 1.0 credit in:
   - LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1
   - LAWS 3908 [0.5] Methodological Approaches in Legal Studies 2
7. 1.5 credits in:
   - LAWS 3005 [0.5] Law and Regulation

8. 2.0 credits from:
   - LAWS 3106 [0.5] Law and Social Regulation
   - LAWS 3405 [0.5] Labour Law
   - LAWS 3500 [0.5] Constitutional Law
   - LAWS 3502 [0.5] Regulating Freedom of Expression in Canada
   - LAWS 3503 [0.5] Equality and Discrimination
   - LAWS 3504 [0.5] Law and Aboriginal Peoples
   - LAWS 3509 [0.5] The Charter of Rights Topics
   - LAWS 3800 [0.5] Law of Environmental Quality

9. 1.5 credits from:
   - LAWS 4006 [0.5] Religion and State in Canada
   - LAWS 4101 [0.5] Contemporary Justice Theories
   - LAWS 4102 [0.5] Controversies in Rights Theory
   - LAWS 4507 [0.5] Administrative Law and Control
   - LAWS 4510 [0.5] Topics in Law, Policy and Government
   - LAWS 4603 [0.5] Transitional Justice
   - LAWS 4607 [0.5] Immigration and Refugee Law
   - LAWS 4800 [0.5] Environment and Social Justice
   - LAWS 4901 [0.5] Tutorial in Law
   - LAWS 4902 [0.5] Tutorial in Law
   - LAWS 4908 [1.0] Honours Paper

10. 1.0 credit in LAWS at the 4000 level or above

B. Credits Not Included in the Law Major CGPA (9.5 credits)

11. 8.0 credits in electives not in LAWS

12. 1.5 credits in free electives.

Total Credits 20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 9 above must complete an approved topic related to the theme of the Concentration.

2. Students completing the B.A. (Honours) in Law with a Concentration in Law, Policy and Government are encouraged, but not required, to consider completing a Minor in another discipline (e.g. Political Science) to broaden their exposure to that discipline.

3. The Concentration in Law, Policy and Government is not available to students in the Law B.A. program.
LAWS 2502 [0.5]   Law, State and Citizen
3.  0.5 credits from:
LAWS 2201 [0.5]   Persons and Property
LAWS 2202 [0.5]   Obligations
4.  0.5 credit from:
LAWS 2301 [0.5]   Criminal Justice System
LAWS 2302 [0.5]   Criminal Law
5.  0.5 credit from:
LAWS 2105 [0.5]   Social Justice and Human Rights
LAWS 2601 [0.5]   Public International Law
(or 0.5 credit from Items 3-4 not already used to fulfil those items)
6.  1.0 credit in:
   LAWS 2908 [0.5]   Methodological Approaches in Legal Studies 1
   LAWS 3908 [0.5]   Methodological Approaches in Legal Studies 2
7.  1.5 credits in:
LAWS 3005 [0.5]   Law and Regulation
LAWS 3506 [0.5]   Administrative Law
LAWS 4801 [0.5]   Risk and the Legal Process
8.  0.5 credit from:
LAWS 3106 [0.5]   Law and Social Regulation
LAWS 3405 [0.5]   Labour Law
LAWS 3500 [0.5]   Constitutional Law
LAWS 3502 [0.5]   Regulating Freedom of Expression in Canada
LAWS 3503 [0.5]   Equality and Discrimination
LAWS 3504 [0.5]   Law and Aboriginal Peoples
LAWS 3509 [0.5]   The Charter of Rights Topics
LAWS 3800 [0.5]   Law of Environmental Quality
9.  1.5 credits from:
LAWS 4006 [0.5]   Religion and State in Canada
LAWS 4101 [0.5]   Contemporary Justice Theories
LAWS 4102 [0.5]   Controversies in Rights Theory
LAWS 4507 [0.5]   Administrative Law and Control
LAWS 4510 [0.5]   Topics in Law, Policy and Government
LAWS 4603 [0.5]   Transitional Justice
LAWS 4607 [0.5]   Immigration and Refugee Law
LAWS 4800 [0.5]   Environment and Social Justice
LAWS 4901 [0.5]   Tutorial in Law
LAWS 4902 [0.5]   Tutorial in Law
LAWS 4908 [1.0]   Honours Paper

B. Additional Requirements (12.0 credits)  12.0
10. The requirements for B.A. Combined Honours in the other discipline
11. Sufficient free electives to total 20.0 credits for the program.

Total Credits  20.0

Notes:
1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 9 above must complete an approved topic related to the theme of the Concentration.
2. Where the Combined Honours is with the School of Journalism and Communication, the degree awarded will be the Bachelor of Journalism with Law with a Concentration in Law, Policy and Government. Students are directed to the regulations of the School of Journalism and Communication in this Calendar. The Concentration in Law, Policy and Government is not available to students in the Law B.A. program.

Law with Concentration in Business Law
B.A. Honours (20.0 credits)
Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Business Law are those in Items 2, 7, 8, 9 below.

A. Credits Included in the major CGPA (10.5 credits)
1.  1.0 credit in:
   LAWS 1001 [0.5]   Introduction to Legal Studies 1
   LAWS 1002 [0.5]   Introduction to Legal Studies 2
2.  1.0 credit in:
   LAWS 2201 [0.5]   Persons and Property
   LAWS 2202 [0.5]   Obligations
3.  0.5 credits from:
   LAWS 2301 [0.5]   Criminal Justice System
   LAWS 2302 [0.5]   Criminal Law
4.  0.5 credit from:
   LAWS 2105 [0.5]   Social Justice and Human Rights
   LAWS 2501 [0.5]   Law, State and Constitution
   LAWS 2502 [0.5]   Law, State and Citizen
   LAWS 2601 [0.5]   Public International Law
5.  0.5 credit from Items 3-4 not already used to fulfil those items.
6.  1.0 credit in:
   LAWS 2908 [0.5]   Methodological Approaches in Legal Studies 1
   LAWS 3908 [0.5]   Methodological Approaches in Legal Studies 2
7.  1.5 credits in:
   LAWS 3003 [0.5]   Contracts
   LAWS 3201 [0.5]   Business Enterprise Frameworks
   LAWS 3206 [0.5]   Banking Law
8.  1.5 credits from:
   LAWS 3202 [0.5]   Intellectual Property
   LAWS 3205 [0.5]   Consumer Law
   LAWS 3207 [0.5]   International Transactions
   LAWS 3208 [0.5]   International Trade Regulation
   LAWS 3401 [0.5]   Employment Law
   LAWS 3405 [0.5]   Labour Law
9.  2.0 credits from:
   LAWS 4200 [0.5]   International Economic Law
   LAWS 4202 [0.5]   Accountability of Management
   LAWS 4204 [0.5]   Legal Issues in eCommerce
   LAWS 4209 [0.5]   Topics in Business Law
   LAWS 4302 [0.5]   Regulation of Corporate Crime
   LAWS 4402 [0.5]   Employment Dispute Resolution
   LAWS 4801 [0.5]   Risk and the Legal Process
   LAWS 4901 [0.5]   Tutorial in Law
   LAWS 4902 [0.5]   Tutorial in Law
   LAWS 4908 [1.0]   Honours Paper
10. 1.0 credit in LAWS at the 4000 level or above  1.0
B. Credits Not Included in the Major CGPA (9.5 credits)

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<tr>
<td>11.</td>
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<td>12.</td>
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</table>

Total Credits 20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward Item 9 above must complete an approved topic related to the theme of the Concentration.

2. Students completing the B.A. (Honours) in Law with a Concentration in Business Law are encouraged, but not required, to consider completing a Minor in another discipline (e.g. Business) in order to broaden their exposure to that discipline.

3. The Concentration in Business Law is not available to students in the Law B.A. program.

**Law with Concentration in Business Law**

**B.A. Combined Honours (20.0 credits)**

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Business Law are those in Items 2, 7, 8 below.

**A. Credits Included in the Law Major CGPA (8.0 credits)**

<table>
<thead>
<tr>
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<td>LAWS 4302 [0.5] Regulation of Corporate Crime</td>
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<td>LAWS 4402 [0.5] Employment Dispute Resolution</td>
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**B. Additional Requirements (12.0 credits)**

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<th>Item</th>
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<tbody>
<tr>
<td>9.</td>
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</table>

Total Credits 20.0

Notes:

1. Students counting LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward Item 8 above must complete an approved topic related to the theme of the Concentration.

2. Where the Combined Honours is with the School of Journalism and Communication, the degree awarded will be the Bachelor of Journalism with Law with a Concentration in Business Law. Students are directed to the regulations of the School of Journalism and Communication.

**Law with Concentration in Transnational Law and Human Rights**

**B.A. Honours (20.0 credits)**

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Transnational Law and Human Rights are those in Items 2, 7, 8, 9 below.

**A. Credits Included in the Major CGPA (10.5 credits)**

<table>
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<td>6.</td>
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<td>LAWS 3201 [0.5] Business Enterprise Frameworks</td>
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<td>7.</td>
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<td>LAWS 3503 [0.5] Equality and Discrimination</td>
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**B. Credits Not Included in the Major CGPA (9.5 credits)**

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<tr>
<th>Item</th>
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<tbody>
<tr>
<td>8.</td>
<td>1.5</td>
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</tr>
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</table>

Total Credits 20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward Item 9 above must complete an approved topic related to the theme of the Concentration.
Law and Human Rights are those in
The courses defining the Concentration in Transnational
CGPA of 6.50 over credits in the concentration.
Continuation in this concentration requires a minimum
B.A. Combined Honours (20.0 credits)

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<td>Religion and State in Canada</td>
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<td>LAWS 4100 [0.5]</td>
<td>Modern Legal Theory</td>
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<td>LAWS 4101 [0.5]</td>
<td>Contemporary Justice Theories</td>
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<td>LAWS 4102 [0.5]</td>
<td>Controversies in Rights Theory</td>
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<td>LAWS 4105 [0.5]</td>
<td>Global Justice Theory</td>
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<td>LAWS 4106 [0.5]</td>
<td>Law and Violence</td>
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<td>LAWS 4603 [0.5]</td>
<td>Transitional Justice</td>
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<tr>
<td>LAWS 4605 [0.5]</td>
<td>Topics in International Law</td>
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<td>LAWS 4606 [0.5]</td>
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<tr>
<td>LAWS 4908 [1.0]</td>
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| 10. 0.5 credit in LAWS at the 3000 level or above | 0.5 |
| 11. 0.5 credit in LAWS at the 4000 level | 0.5 |

B. Credits Not Included in the Major CGPA (9.5 credits)

| 12. 8.0 credits in electives not in LAWS | 8.0 |
| 13. 1.5 credits in free electives | 1.5 |

Total Credits: 20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 9 above must complete an approved topic related to the theme of the Concentration.

2. Students completing the B.A. (Honours) in Law with a Concentration in Transnational Law and Human Rights are encouraged, but not required, to consider completing a Minor in another discipline (e.g. Political Science) to broaden their exposure to that discipline.

3. The Concentration in Transnational Law and Human Rights is not available to students in the Law B.A. program.

Law with Concentration in Transnational Law and Human Rights

B.A. Combined Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration.
The courses defining the Concentration in Transnational Law and Human Rights are those in Items 2, 7, 8, 9 below.

A. Credits Included in the Major CGPA (8.0 credits)

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<tr>
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<td>LAWS 1002 [0.5]</td>
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| 2. 1.0 credit in: | 1.0 |

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<th>3. 0.5 credits in:</th>
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<td>LAWS 2601 [0.5]</td>
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<td>LAWS 2201 [0.5]</td>
<td>Persons and Property</td>
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<td>LAWS 2202 [0.5]</td>
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<tr>
<th>5. 0.5 credit from:</th>
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<tr>
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<td>Criminal Law</td>
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<td>Law, State and Constitution</td>
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<td>LAWS 3908 [0.5]</td>
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<td>LAWS 3602 [0.5]</td>
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<td>LAWS 4601 [0.5]</td>
<td>Transnational Law and Human Rights</td>
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<tr>
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<td>Modern Legal Theory</td>
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<td>Contemporary Justice Theories</td>
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</tr>
<tr>
<td>LAWS 4607 [0.5]</td>
<td>Immigration and Refugee Law</td>
</tr>
<tr>
<td>LAWS 4610 [0.5]</td>
<td>Special Topics in Transnational Law and Human Rights</td>
</tr>
<tr>
<td>LAWS 4901 [0.5]</td>
<td>Tutorial in Law</td>
</tr>
<tr>
<td>LAWS 4902 [0.5]</td>
<td>Tutorial in Law</td>
</tr>
<tr>
<td>LAWS 4908 [1.0]</td>
<td>Honours Paper</td>
</tr>
</tbody>
</table>

| 9. 0.5 credit in LAWS at the 3000 level or above | 0.5 |

B. Additional Requirements (12.0 credits) 12.0

Total Credits: 20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 8 above must complete an approved topic related to the theme of the Concentration.

2. Where the Combined Honours is with the School of Journalism and Communication, the degree awarded will be the Bachelor of Journalism with Law with a Concentration in Transnational Law and Human Rights. Students are directed to the regulations of
the School of Journalism and Communication in this Calendar.

3. Where the Combined Honours is with the Human Rights program, students are directed to the specific requirements for the Human Rights Combined Honours with Law with Concentration in Transnational Law and Human Rights. Combined Honours students should note that courses required by one major (such as Law) cannot be counted to fulfill the requirements of the second major (such as Human Rights).

**Law**

**B.A. (15.0 credits)**

A. Credits Included in the Major CGPA (6.5 credits)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.0 credit in:</td>
</tr>
<tr>
<td></td>
<td>LAWS 1001 [0.5] <em>Introduction to Legal Studies 1</em></td>
</tr>
<tr>
<td></td>
<td>LAWS 1002 [0.5] <em>Introduction to Legal Studies 2</em></td>
</tr>
</tbody>
</table>

B. Credits Not Included in the Major CGPA (8.5 credits)

6. 5.5 credits in electives not in LAWS

7. 3.0 credits in free electives.

Total Credits 15.0

**Note:** Students with a Major in Law are encouraged, but not required, to consider completing a Minor in another discipline in order to broaden their exposure to that discipline.

**Bachelor of Global and International Studies (B.G.In.S.)**

**Note:** Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

**Specialization in Global Law and Social Justice**

**B.G.In.S. Honours (20.0 credits)**

This Specialization is also available with a *Mention: français* option.

A. Credits Included in the Major CGPA (12.0 credits)

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>4.5 credits in: Core Courses 4.5</td>
</tr>
<tr>
<td></td>
<td>GINS 1000 [0.5] <em>Global History</em></td>
</tr>
<tr>
<td></td>
<td>GINS 1010 [0.5] <em>International Law and Politics</em></td>
</tr>
<tr>
<td></td>
<td>GINS 1020 [0.5] <em>Ethnography, Globalization and Culture</em></td>
</tr>
<tr>
<td></td>
<td>GINS 2000 [0.5] <em>Ethics and Globalization</em></td>
</tr>
<tr>
<td></td>
<td>GINS 2010 [0.5] <em>Globalization and International Economic Issues</em></td>
</tr>
<tr>
<td></td>
<td>GINS 2020 [0.5] <em>Global Literatures</em></td>
</tr>
<tr>
<td></td>
<td>GINS 3010 [0.5] <em>Global and International Theory</em></td>
</tr>
<tr>
<td></td>
<td>GINS 3020 [0.5] <em>Places, Boundaries, Movements and Global Environmental Change</em></td>
</tr>
<tr>
<td></td>
<td>GINS 4090 [0.5] <em>Honours Seminar in Global and International Studies</em></td>
</tr>
</tbody>
</table>

B. Credits Not Included in the Major CGPA (7.5 credits)

2. 0.0 credit in: International Experience Requirement Preparation

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>GINS 1300 [0.0] <em>International Experience Requirement Preparation</em></td>
</tr>
</tbody>
</table>

C. 7.5 credits in: the Specialization

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>a.</td>
<td>1.0 credit in: Law Foundations 1.0</td>
</tr>
<tr>
<td>LAWS 1001 [0.5] <em>Introduction to Legal Studies 1</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 1002 [0.5] <em>Introduction to Legal Studies 2</em></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>0.5 credit in: Research Methodologies 0.5</td>
</tr>
<tr>
<td>LAWS 2908 [0.5] <em>Methodological Approaches in Legal Studies 1</em></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>1.0 credit in: Second Year Core Courses 1.0</td>
</tr>
<tr>
<td>LAWS 2105 [0.5] <em>Social Justice and Human Rights</em></td>
<td></td>
</tr>
<tr>
<td>or HUMR 2001 [0.5] <em>Human Rights: Theories and Foundations</em></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>0.5 credit from: Third Year Core Courses 0.5</td>
</tr>
<tr>
<td>LAWS 3602 [0.5] <em>International Human Rights</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 3604 [0.5] <em>International Organizations</em></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>3.5 credits from: Global Law and Social Justice 3.5</td>
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<tr>
<td>(students must select at least 0.5 credit at the 4000 level from this list)</td>
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<tr>
<td>HUMR 3002 [0.5] <em>Right to the City</em></td>
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<tr>
<td>HUMR 3301 [0.5] <em>Racialization, Racism and Human Rights</em></td>
<td></td>
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<tr>
<td>HUMR 3302 [0.5] <em>Culture, Religion, and Women's Human Rights</em></td>
<td></td>
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<tr>
<td>HUMR 3303 [0.5] <em>Children's Rights</em></td>
<td></td>
</tr>
<tr>
<td>HUMR 3401 [0.5] <em>Histories of Persecution and Genocide</em></td>
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<tr>
<td>HUMR 3501 [0.5] <em>Social, Economic and Cultural Rights</em></td>
<td></td>
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<tr>
<td>HUMR 3503 [0.5] <em>Global Environmental Justice</em></td>
<td></td>
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<tr>
<td>HUMR 3504 [0.5] <em>Public Health and Human Rights</em></td>
<td></td>
</tr>
<tr>
<td>HUMR 4201 [0.5] <em>Citizenship and Human Rights (if not used in f)</em></td>
<td></td>
</tr>
<tr>
<td>HUMR 4401 [0.5] <em>Gender, Citizenship and Social Justice in a Transnational World (if not used in f)</em></td>
<td></td>
</tr>
<tr>
<td>HUMR 4502 [0.5] <em>Global Indigenous Knowledges and Movements (if not used in f)</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 3207 [0.5] <em>International Transactions</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 3208 [0.5] <em>International Trade Regulation</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 3503 [0.5] <em>Equality and Discrimination</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 3504 [0.5] <em>Law and Aboriginal Peoples</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 3509 [0.5] <em>The Charter of Rights Topics</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 3602 [0.5] <em>International Human Rights (if not used in d)</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 3604 [0.5] <em>International Organizations (if not used in d)</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 4101 [0.5] <em>Contemporary Justice Theories</em></td>
<td></td>
</tr>
<tr>
<td>LAWS 4102 [0.5] <em>Controversies in Rights Theory</em></td>
<td></td>
</tr>
</tbody>
</table>
### Stream in Global Law and Social Justice

**B.G.In.S. (15.0 credits)**

**A. Credits Included in the Major CGPA (8.0 credits)**

1. **4.0 credits in:** Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWS 4105 [0.5]</td>
<td>Global Justice Theory (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4106 [0.5]</td>
<td>Law and Violence</td>
</tr>
<tr>
<td>LAWS 4200 [0.5]</td>
<td>International Economic Law (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4601 [0.5]</td>
<td>Transnational Law and Human Rights (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4603 [0.5]</td>
<td>Transitional Justice (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4605 [0.5]</td>
<td>Topics in International Law</td>
</tr>
<tr>
<td>LAWS 4606 [0.5]</td>
<td>International Law of Armed Conflict (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4607 [0.5]</td>
<td>Immigration and Refugee Law (if not used in f)</td>
</tr>
<tr>
<td>LAWS 4610 [0.5]</td>
<td>Special Topics in Transnational Law and Human Rights</td>
</tr>
<tr>
<td>LAWS 4800 [0.5]</td>
<td>Environment and Social Justice</td>
</tr>
<tr>
<td>LAWS 4901 [0.5]</td>
<td>Tutorial in Law (topic in Global Law and Social Justice)</td>
</tr>
<tr>
<td>LAWS 4902 [0.5]</td>
<td>Tutorial in Law (topic in Global Law and Social Justice)</td>
</tr>
<tr>
<td>LAWS 4903 [0.5]</td>
<td>Advanced Legal Topics (topic in Global Law and Social Justice)</td>
</tr>
<tr>
<td>LAWS 4904 [0.5]</td>
<td>Advanced Legal Topics (topic in Global Law and Social Justice)</td>
</tr>
</tbody>
</table>

2. **4.0 credits from:** the Stream

3. **7.0 credits in:** Free Electives

4. **The language requirement must be met.**

**C. Additional Requirements**

6. **The Language requirement must be met.**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
</tbody>
</table>

### B. Credits Not Included in the Major CGPA (7.0 credits)

**4. 8.0 credits in:** free electives

**C. Additional Requirements**

5. **The International Experience requirement must be met.**

6. **The Language requirement must be met.**

| Total Credits | 20.0 |

### Minor in Law (4.0 credits)

- The Minor in Law is open to all students registered in undergraduate programs, with the exception of students registered in the B.A. in Law, the B.A. in Criminology and Criminal Justice with a concentration in Law, or the B.G.In.S. Specialization or Stream in Global Law and Social Justice.

### Requirements:

1. **1.0 credit in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWS 1001 [0.5]</td>
<td>Introduction to Legal Studies 1</td>
</tr>
<tr>
<td>LAWS 1002 [0.5]</td>
<td>Introduction to Legal Studies 2</td>
</tr>
</tbody>
</table>

2. **2.0 credits from:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWS 2105 [0.5]</td>
<td>Social Justice and Human Rights</td>
</tr>
<tr>
<td>LAWS 2201 [0.5]</td>
<td>Persons and Property</td>
</tr>
<tr>
<td>LAWS 2202 [0.5]</td>
<td>Obligations</td>
</tr>
<tr>
<td>LAWS 2301 [0.5]</td>
<td>Criminal Justice System</td>
</tr>
<tr>
<td>LAWS 2302 [0.5]</td>
<td>Criminal Law</td>
</tr>
<tr>
<td>LAWS 2501 [0.5]</td>
<td>Law, State and Constitution</td>
</tr>
</tbody>
</table>
Students admitted with a completed university degree are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**

**Subject codes:** AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**

**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAEE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**
Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political

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<table>
<thead>
<tr>
<th>Total Credits</th>
<th>4.0</th>
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</table>

**Mention : français : Law (4.0 credits)**
Students wishing to qualify for the *Mention : français* notation in Law may do so by taking the following pattern of courses in their degree program:

**Mention : Français Law**
1. 1.0 credit in the advanced study of the French language:
   - FREN 2100 [1.0] French 4
2. 1.0 credit in French-Canadian culture and heritage:
   - FREN 2202 [0.5] Introduction aux études littéraires 1
   - FREN 2203 [0.5] Introduction aux études littéraires 2
   - FREN 2401 [1.0] Introduction à la linguistique française
3. 1.0 credit at the 2000 or 3000 level in law or legal studies taught in French at the university level, and approved by the Undergraduate Supervisor
4. In addition, for B.A. (Honours) Law, Combined B.A. (Honours) Law, or B.G.In.S. (Honours) with a Specialization in Global Law and Social Justice, 1.0 credit at the 4000 level in law or legal studies taught in French at the university level, and approved by the Undergraduate Supervisor

**Total Credits**

**B.A. Regulations**
The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**
B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**
Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

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<table>
<thead>
<tr>
<th>Subject</th>
<th>Code</th>
</tr>
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<tbody>
<tr>
<td>LAW 2502</td>
<td>0.5</td>
</tr>
<tr>
<td>LAW 2601</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>3. 1.0 credit in</strong> LAWS at the 3000-level or higher</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>4. The remaining requirements of the major discipline(s) and degree must be satisfied.</strong></td>
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</tr>
</tbody>
</table>
Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

**Subject codes:** ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

**Declared and Undeclared Students**

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

**Change of Program Within the B.A. Degree**

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Co-operative Education**

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

**Undergraduate Co-operative Education Policy**

**Admission Requirements**

Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two
Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term.

Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:
1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to
accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Law (Concentration in Business Law, or Law, Policy and Government): Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the Bachelor of Arts Honours - Law (Business law Concentration or Laws, Policy and Government Concentration) program;
2. Obtained an overall CGPA of 8.00 if applying to do their first work term in the summer following the second year of study;
3. Obtained and maintained an overall CGPA of 6.5 and a major CGPA of 8.0, for the purposes of entry to any work term following completion of the third year of study;
4. Completed 3.5 credits in law, including LAWS 2908, prior to their first work term. It is strongly recommended that students complete all first and second year law requirements prior to entering their first work term.

Students in B.A. Honours Law (Concentration in Business Law, or Law, Policy and Government) must successfully complete three (3) work terms to obtain the Co-op designation. 

Co-operative Work Term Course: LAWS 3999

Work/Study Pattern:

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Legend:
- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law (Business Law), Law (Law, Policy and Government), Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Law (LAWS) Courses

Note: some graduate courses may also be open to interested fourth-year students with permission of the Department.

LAWS 1001 [0.5 credit]
Introduction to Legal Studies 1
Introduction to legal studies: concepts, sources, nature and functions of law; historical, cultural and constitutional foundations of Canadian legal system; common and civil law traditions; statutory interpretation; precedent; legal institutions; frameworks for analyzing formal and informal conceptions of law and its role in society.
Precludes additional credit for LAWS 1000 (no longer offered).
Lectures and discussion three hours a week.

LAWS 1002 [0.5 credit]
Introduction to Legal Studies 2
Introduction to legal rules and theoretical approaches for critically understanding the creation, interpretation and enforcement of those rules; the role of judges, juries, lawyers, and lay persons; adjudication and alternative dispute resolution; relationship of law with social change and justice; challenges of access to justice.
Precludes additional credit for LAWS 1000 (no longer offered).
Lectures and discussion three hours a week.

LAWS 2105 [0.5 credit]
Social Justice and Human Rights
Theories and practices of law and social justice. Issues examined may include: civil democracy and repression; global governance and the rule of law; democratic movements and social power; human rights instruments, regimes and remedies; armed conflict; and humanitarian intervention.
Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, PSCI 1100, PSCI 1200 or HUMR 1001 [1.0] or PAPM 1000 [1.0].
Lectures three hours a week.

LAWS 2201 [0.5 credit]
Persons and Property
Origins and scope of the concept of person in law and how concepts of legal personality change over time. Origins and scope of the concept of property and how concepts of property change over time.
Precludes additional credit for LAWS 2003 (no longer offered).
Prerequisite(s): LAWS 1001 and LAWS 1002.
Lectures three hours a week.

LAWS 2202 [0.5 credit]
Obligations
The concepts employed by the law for creating and enforcing legal obligations between persons within society, including contract, tort, fiduciary obligation and restitution. Consideration is given to the role of persons and the role of the state in ordering private legal obligations.
Precludes additional credit for LAWS 2003 (no longer offered).
Prerequisite(s): LAWS 1001 and LAWS 1002.
Lectures three hours a week.

LAWS 2301 [0.5 credit]
Criminal Justice System
The institutional and social production of criminal law in Canada. Processes, personnel, and agencies in the criminal legal system. The role of discretion and mechanisms of accountability. The accused and the place of the victim. Issues and problems in sentencing and punishment.
Precludes additional credit for LAWS 2004 (no longer offered).
Prerequisite(s): LAWS 1001 and LAWS 1002.
Lectures three hours a week.

LAWS 2302 [0.5 credit]
Criminal Law
The legal and social dimensions of criminal liability and responsibility in Canada, including issues and problems surrounding mens rea, actus reus, and the attachment of liability. Excuses and justifications, the Canadian Criminal Code and the role of the Charter in the criminal legal system.
Precludes additional credit for LAWS 2004 (no longer offered).
Prerequisite(s): LAWS 1001 and LAWS 1002.
Lectures three hours a week.

LAWS 2501 [0.5 credit]
Law, State and Constitution
Law relating to the state, society and the constitution, with a focus on the historical framework, federalism, and constitutional reform in Canada.
Precludes additional credit for LAWS 2005 (no longer offered).
Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, PSCI 1100, PSCI 1200, or PAPM 1000 [1.0].
Lectures three hours a week.
LAWS 2502 [0.5 credit]
Law, State and Citizen
Law relating to the state and its relationship to individuals and groups in society, with a focus on the administrative process, basic values and the Charter.
Precludes additional credit for LAWS 2005 (no longer offered).
Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, PSCI 1100, PSCI 1200, or PAPM 1000 [1.0]. Lectures three hours a week.

LAWS 2601 [0.5 credit]
Public International Law
Examination of the role of law in contemporary international relations. Nature, history and sources of international law; international personality of states; status of international organizations and individuals; creation and effect of international obligations; importance and functions of law in the settlement of international disputes.
Precludes additional credit for LAWS 3603 (no longer offered).
Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, PSCI 1100, PSCI 1200, or PAPM 1000 [1.0]. Lectures three hours a week.

LAWS 2908 [0.5 credit]
Methodological Approaches in Legal Studies 1
Introduction to the legal research process and analysis of legal methodology; finding and analyzing primary and secondary legal sources. Students are strongly encouraged to take this course in the second year of their program.
Includes: Experiential Learning Activity
Prerequisite(s): LAWS 1001 and LAWS 1002 or LAWS 1000 (no longer offered).
Lectures and tutorials three hours a week.

LAWS 3001 [0.5 credit]
Women and the Legal Process
How the legal process has affected the status of women. Areas of concentration within the Canadian context include the criminal law, citizenship and immigration, education, employment, and welfare and social services.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3003 [0.5 credit]
Contracts
The enforcement of promises and agreements; basic doctrines and underlying principles of the law of contract are studied from formation of the contract to remedies for breach of contract; role of contract for economic and social purposes is also considered.
Prerequisite(s): LAWS 2202 and 0.5 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3005 [0.5 credit]
Law and Regulation
Definitions and goals of regulation; contemporary theories and debates about legal and non-legal approaches to regulation. Approaches studied may include market mechanisms, public agency regulation, self-regulation and governance in co-operation with associations in civil society.
Prerequisite(s): 1.0 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502. Lectures three hours a week.

LAWS 3006 [0.5 credit]
Mediation
Theory and practice of mediation; historical roots and influences; contrasts with formal litigation and other dispute resolution processes; issues of social and legal control; critiques, including feminist, Marxist and critical race theory; issues of power, gender, race and class; application to contemporary issues and disputes.
Prerequisite(s): (LAWS 1001 and LAWS 1002) and (1.0 credit in LAWS at the 2000 level or 0.5 credit in LAWS at the 2000 level and BUSI 2601). Lectures three hours a week.

LAWS 3101 [0.5 credit]
Philosophy of Law: The Nature of Law
The concept of law, leading theories of law and related concepts such as rules and obligations, power and authority, coercion, and justice.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3102 [0.5 credit]
Philosophy of Law: The Logic of the Law
Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession. Also listed as PHIL 3102.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3103 [0.5 credit]
Law, Culture, and the Humanities: A Foundation
Themes, approaches and debates in the field of law, culture and the humanities. Primary materials considered may include theoretical writings/cultural criticism/literary texts/films/video/photography and music. These texts present different modes and means of inquiring into the assumptions and aspirations that we ascribe to law.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.
LAWS 3105 [0.5 credit]
Theory of Law and Politics
Theories of law and politics; prominent thinkers and schools of thought; influence on legal and political institutions. Topics include law and ethics, justice and equity, positivism and natural law, state absolutism, codifications, and anthropological and historical theories of law and society.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level, or 0.5 credit in LAWS at the 2000 level and PSCI 1100.
Lectures three hours a week.

LAWS 3106 [0.5 credit]
Law and Social Regulation
A study of sociological theories of law as well as the nature of legal institutions. Impacts of legal regulation on various social institutions and on processes of social debate and conflict.
Also listed as SOCI 3480.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3201 [0.5 credit]
Business Enterprise Frameworks
Forms of carrying on business activity: proprietorships, partnerships, corporations and Crown entities. The rights and obligations of such business enterprises both internally and in relation with other persons. The relationship between legal form and economic function. The role of state intervention.
Prerequisite(s): LAWS 2201 and LAWS 2202.
Lectures three hours a week.

LAWS 3202 [0.5 credit]
Intellectual Property
Critical assessment of copyright, patents, trademarks, trade secrets and other forms of intellectual property; regulation and governance of information technology including self-regulation, standard setting, licensing, competition policy and international dimensions.
Prerequisite(s): 1.0 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502.
Lectures three hours a week.

LAWS 3203 [0.5 credit]
The Legal Nature of Property
An examination of the nature and functions of property as a legal and social institution, with particular reference to theories of property, the scope of property interests, and the relationship between individual property rights and the state.
Prerequisite(s): LAWS 2201 and LAWS 2202.
Lectures three hours a week.

LAWS 3205 [0.5 credit]
Consumer Law
Need for consumer protection in the provision of goods and services; traditional legal protection by statute and common law; legislative responses to consumer pressures; judicial response in recent Canadian, English and American law; reform of consumer law.
Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3206 [0.5 credit]
Banking Law
The law relating to banks and banking; the nature of the legal relationship created; legal rights and duties of the parties involved. Consumer and corporate aspects of banking (including computerization and electronic funds transfers); regulations of banking.
Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3207 [0.5 credit]
International Transactions
Topics may include: the international sale of goods, finance of transnational transactions, international carriage of goods, insurance, agency and trading houses; other forms of trade, e.g., counter-trade, foreign investment; settlement of international disputes by litigation and arbitration.
Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3208 [0.5 credit]
International Trade Regulation
International regulation of trade and investment through bilateral, regional and multilateral treaties and agreements. Topics may include: WTO, NAFTA, the EU, UNCTAD, intergovernmental commodity agreements, dispute settlement.
Prerequisite(s): (0.5 credit from LAWS 2202, LAWS 2501, LAWS 2601, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3209 [0.5 credit]
Canadian Correctional Policies in Historical Perspective
History of corrections in Canada in the context of the international evolution of western penal systems, Canadian corrections in the twentieth century and expansion of alternatives to prison after WWII; criminological debates about the theoretical and empirical significance of historical milestones in corrections.
Prerequisite(s): LAWS 2301 and LAWS 2302.
Lectures three hours a week.
LAWS 3303 [0.5 credit]
Torts
Principles of legal liability for harm caused to the person or property of others; examination of policy rationales justifying and limiting liability; responsiveness to changing social values and conditions. Particular focus on negligence law; may also consider nuisance, intentional torts and other topics.
Prerequisite(s): LAWS 2201 and LAWS 2202.
Lectures three hours a week.

LAWS 3305 [0.5 credit]
Crime and State in History
The history of the relationship between the criminal law system and society. Changing issues in the criminal law and the nature of institutional responses, covering medieval to early nineteenth-century England and nineteenth to early twentieth-century Canada. Also listed as HIST 3305.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level, or 0.5 credit in LAWS at the 2000 level and 0.5 credit in HIST at the 2000 level.
Lectures three hours a week.

LAWS 3306 [0.5 credit]
Crime, Law, Process and Politics
Criminal law process in Canada; structure and use of the process examined for fairness, defects, and possible reform initiatives. Issues concerning gender, race and class bias in the implementation and application of the criminal law.
Prerequisite(s): LAWS 2301 and LAWS 2302.
Lectures three hours a week.

LAWS 3307 [0.5 credit]
Youth and Criminal Law
A review of the Youth Criminal Justice Act within the framework of the Canadian justice system, with particular emphasis on historical and philosophical developments and objectives. Current topics include: constitutional issues, procedure, confessions, transfers, sentencing options, alternative measures, reviews, and possible amendments.
Prerequisite(s): LAWS 2301 and LAWS 2302.
Lectures three hours a week.

LAWS 3308 [0.5 credit]
Punishment and the Law
This course explores justifications and practices of punishment and social control from a socio-legal perspective. Rationalizations and justifications for punishment are considered. Different forms of punishment and control within the law will be examined as well as different theoretical perspectives of punishment.
Prerequisite(s): LAWS 2301 and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3401 [0.5 credit]
Employment Law
Legal regulation of the employment relationship; its contractual basis; defining employment; rights and duties of employees and employers; termination of employment; statutory regulation through employment standards legislation, human rights codes, workers' compensation acts, occupational health and safety and related statutes.
Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3405 [0.5 credit]
Labour Law
Role of law in industrial relations; effect of law on collective bargaining relationships; recognition of bargaining agent; regulation of bargaining; administration of the collective agreement; methods of conflict resolution.
Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3500 [0.5 credit]
Constitutional Law
An investigation of the Canadian constitution. Sovereignty, the nature and units of executive, legislative, and judicial power in Canada as interpreted by the courts. The distribution of powers under the Canadian constitution, including an investigation of contemporary problems of federalism. Problems of judicial review.
Prerequisite(s): (LAWS 2501 or PSCI 2003) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3501 [0.5 credit]
Law in the Information Society
Legal responses to challenges of the information society. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, control of objectionable content, Charter and human rights issues, and security.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3502 [0.5 credit]
Regulating Freedom of Expression in Canada
The claimed relationship between freedom of expression and Canadian democracy, including the historical development of the right and various limits on it, and the regulatory structures governing contemporary media, criminalized and commercial expression, and use of media in the courtroom.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.
LAWS 3503 [0.5 credit]
Equality and Discrimination
Human rights issues and law in Canada; history and present day experiences of discrimination; critical exploration of laws effectiveness in responding to discrimination; meaning(s) of equality and discrimination; focus on Human Rights Codes - interpretation, administration, enforcement with some reference to s.15 of the Charter.
Prerequisite(s): (0.5 credit from LAWS 2105, LAWS 2302, LAWS 2502) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3504 [0.5 credit]
Law and Aboriginal Peoples
The legal situation of aboriginal peoples in Canada. Topics include status, aboriginal rights, treaties, legislative jurisdiction and the constitutional framework, aboriginal claims, and self-government. Comparative references to aboriginal policy in other countries.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3506 [0.5 credit]
Administrative Law
Structure and procedure of Canadian administrative authorities; policy, statutory and judicial environments in which they operate. Topics include techniques for implementing public policy and structuring public authorities; statutory interpretation; procedural safeguards; exercise of statutory discretion; reconciling efficiency and fairness.
Prerequisite(s): LAWS 2502 and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3508 [0.5 credit]
Health Law
Legal/ethical issues in health care regulation. Topics may include: regulation of health professions; economics of health care; informed consent/choice; regulation of drugs, devices and research; medical malpractice and other liability; mental health issues; patient/client records.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3509 [0.5 credit]
The Charter of Rights Topics
Selected issues in the Canadian Charter of Rights and Freedoms. The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): (0.5 Credit from LAWS 2105, LAWS 2201, LAWS 2302, LAWS 2502) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3602 [0.5 credit]
International Human Rights
The developing international law relating to the protection of human rights. General concepts, rules and institutions. Specific issues include self-determination, aboriginal rights, the refugee problem, and torture. The inherent problems and overall potential of international law.
Precludes additional credit for LAWS 4604 (no longer offered).
Prerequisite(s): (0.5 credit from LAWS 2105, LAWS 2502, LAWS 2601 or HUMR 2001) and 0.5 credit in LAWS at the 2000 level or PAPM 1000.
Lectures three hours a week.

LAWS 3604 [0.5 credit]
International Organizations
Prerequisite(s): LAWS 2601 and 0.5 credit in LAWS at the 2000 level or PAPM 1000.
Lectures three hours a week.

LAWS 3800 [0.5 credit]
Law of Environmental Quality
Various aspects of environmental law; pollution control, legal actions and remedies; legal foundations for participation in decision-making processes. Social, economic and political forces influencing the formulation and implementation of environmental law. Alternative forms of regulation that may articulate different demands.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3804 [0.5 credit]
Law of the Family
Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes.
Also listed as SOWK 3804.
Prerequisite(s): LAWS 2201 and LAWS 2202.
Lectures three hours a week.

LAWS 3903 [0.5 credit]
Selected Legal Topics
The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.
LAWS 3904 [0.5 credit]
Selected Legal Topics
The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level and permission of Department.
Lectures three hours a week.

LAWS 3908 [0.5 credit]
Methodological Approaches in Legal Studies 2
Advanced approaches to interdisciplinary research and analysis in law and legal studies. Methodological approaches considered will vary by section, and may include theoretical, quantitative, qualitative, literary, or historical approaches.
Prerequisite(s): LAWS 2908 and third-year Honours standing. Honours students are strongly encouraged to take this course in the third year of their program.
Lectures three hours a week.

LAWS 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
Prerequisite(s): registration in the B.A. Honours (concentration in Business Law or concentration in Law, Policy and Government) Cooperative Program, completion of Co-op preparation classes offered by the Co-op office and permission of the Department.

LAWS 4001 [0.5 credit]
Law, Family and Gender
Relationship between family law and ideology of the family, gender roles and the reproduction of family structures. Social ramifications of family law; potential for family law reform as an agency of social change.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3001 or LAWS 3804, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4002 [0.5 credit]
Feminist Theories of Law
The literature comprising feminist perspectives on law; the theoretical bases of these perspectives; place of feminist theories within other critiques of law; significance of different feminist theories for equality theory and law reform strategies; unique contributions of the various perspectives.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4006 [0.5 credit]
Religion and State in Canada
Legal nature of the interaction of religion and state within an historical framework. Emphasis on Canada after the Charter of Rights and Freedoms and on religious pluralism and resistance to state intervention in religion. Interdisciplinary readings drawn from legal, historical and theological sources.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4100 [0.5 credit]
Modern Legal Theory
Realist and post-realist legal scholarship; emphasis on Canadian, American and British approaches. Topics include the Canadian treatise tradition, American legal realism, empirical approaches to legal problems, the sociological movement in law, critical and Canadian feminist legal scholarship, Marxian theories of law, normative economic theory.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4101 [0.5 credit]
Contemporary Justice Theories
Selected major contemporary theories of justice such as those associated with Rawls, Walzer, and Habermas, with emphasis on both their procedural and substantive elements and their concrete ramifications for law, policy and political practice.
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4102 [0.5 credit]
Controversies in Rights Theory
This course examines selected controversies in rights theories, practices, and/or historiography. Illustrative questions may include: Are rights universal or culturally relative? Can rights be justified after the demise of natural rights philosophy? Do rights undermine difference? Do communities benefit from a rights-based culture?
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4103 [0.5 credit]
Special Topic in the Philosophy of Law
Detailed study of a special topic in philosophy of law. Also listed as PHIL 4407.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.
LAWS 4104 [0.5 credit]
Special Topic in the Philosophy of Law
Detailed study of a special topic in philosophy of law. Also listed as PHIL 4408.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4105 [0.5 credit]
Global Justice Theory
Selected theories of global justice as they pertain to legality, which may include questions such as the justice of military force and just war theory, global social justice and global inequality, sovereignty and cosmopolitan conceptions of justice, demands for global democracy and human rights.
Prerequisite(s): LAWS 2105, LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4106 [0.5 credit]
Law and Violence
Examination of how law defines, justifies, and addresses individual, collective and state violence: contemporary and historical case studies; theoretical inquiries into the relationship between law, legality and different forms of violence.
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4107 [0.5 credit]
Law in Modern Society
Sociological and legal theory accounts of the changing role and function of law in modern society with particular reference to advanced capitalist societies. Topics include: the welfare state and the use of regulatory law; juridification and legalization; counter-trends, deregulation, informalism, legal pluralism.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4200 [0.5 credit]
International Economic Law
Selected topics in international economic law. May include: the legal regulation of international economic activity; methods of dispute settlement; standardization and development of an autonomous international trade law; and selected conventions and institutions governing international economic law.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3207 or LAWS 3208, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4202 [0.5 credit]
Accountability of Management
Role, function, and legal regulation of persons managing business enterprises. Status, social responsibility, fiduciary obligations and rights. Control and accountability of managers, obligations owed to the enterprise unit itself, constitutional rights of members, standards imposed by statutory regulation.
Prerequisite(s): LAWS 2908, LAWS 3201 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4204 [0.5 credit]
Legal Issues in eCommerce
An examination of selected legal topics relevant to the conduct of electronic commerce. Topics include types of regulation, government support, jurisdiction challenges, contract disputes and consumer protection. Court and alternative dispute resolution policy of Domain Names challenges are also included.
Prerequisite(s): LAWS 2908, LAWS 2201, LAWS 2202 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4209 [0.5 credit]
Topics in Business Law
Examination of a selected advanced topic in business law. The topics of this course may vary from year to year and are announced in advance of registration.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 2201 or LAWS 2202, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4302 [0.5 credit]
Regulation of Corporate Crime
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4303 [0.5 credit]
Drugs, The User and The State
This course explores the state's attempts to control drugs and drug users by exploring different aspects of national and international drug control. The Canadian experience of drug control, viewed from different perspectives, will be explored within a broader socio-legal context.
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002, and 0.5 credit from LAWS 2301 or LAWS 2302, and fourth-year Honours standing.
Seminars three hours a week.
LAWS 4304 [0.5 credit]
Policing and Social Surveillance
Theoretical consideration of the emergence and transformation of "policing" activities through an examination of law and changes in social relations, with special attention to the myriad agencies involved in contemporary security provision. Evolving notions of risk, surveillance, the state, and the private-public dichotomy. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002, and 0.5 credit from LAWS 2301 or LAWS 2302, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4305 [0.5 credit]
Criminal Justice Reform
Social transformation and criminal justice reform. Theoretical and practical reasons for the use of criminal law as an instrument of social control. Specific reform initiatives and processes. Alternate responses to social problems. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4306 [0.5 credit]
Criminal Law Issues
Selected issues and problems in the area of criminal law. The topics may vary from year to year depending on demand and interest and are announced in advance of registration. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4307 [0.5 credit]
Medical Criminal Law Issues
Legal-medical issues, conflicts and relationships in the field of social control. Topics include mental disorder and criminal liability, diversion of offenders to civil commitment in hospital, insanity, automatism, fitness to stand trial, prediction of dangerousness, regulation of psychoactive drugs. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4308 [0.5 credit]
Sentencing
Theories of sentencing, current sentencing laws and practices, perceptions of sentencing. Data on sentencing practice across Canada. Reforms in other jurisdictions. Critical review of the Canadian Sentencing Commission. Multidisciplinary approach using research and theory in law, criminology, social psychology and sociology. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4309 [0.5 credit]
State Security and Dissent
Historical and contemporary analysis of legal responses of Canadian governments to dissent, political opposition, insurrection, etc. Includes trial of political offences (treason, sedition, riot), national security measures (War Measures/Emergencies Act, Official Secrets Act), and other special powers (police, labour, immigration, parliamentary privilege, etc.). Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and 0.5 credit from LAWS 3305, LAWS 3503, LAWS 3509, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4311 [0.5 credit]
Human Rights in Canadian Prisons
Correctional law in the Canadian criminal justice system; competing objectives of punishment and rehabilitation in the context of respect for the rule of law and human rights; protection of human rights of prisoners in Canada and in international and comparative contexts. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4402 [0.5 credit]
Employment Dispute Resolution
Theory and practice of dispute resolution in employment relations; analysis of such techniques as negotiation, grievance and interest arbitration, mediation, investigation and litigation applied to a range of employment disputes such as collective agreements, termination of employment, discrimination, harassment, occupational health and safety. Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3006, LAWS 3401, LAWS 3405, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4503 [0.5 credit]
Law, Disability and Society
Exploration of the ways in which law promotes or hinders the inclusion of disabled persons in society. Consideration of different theories of 'disability' and the creation of barriers faced by disabled persons. Topics may include barriers affecting education, employment, transportation, benefits, and life/death decisions. Prerequisite(s): LAWS 2908 and fourth-year Honours standing. Seminars three hours a week.
LAWS 4504 [0.5 credit]
Indigenous Criminal Justice
Indigenous peoples and the administration of Canadian
criminal justice including policing, courts, corrections
and aftercare. Content and effects of past and present
policies, processes and laws. Alternatives such as self-
government and self-determination; potential approaches
to an appropriate justice system for Indigenous peoples.
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002
and LAWS 2301, LAWS 2302 and fourth-year Honours
standing.
Seminars three hours a week.

LAWS 4507 [0.5 credit]
Administrative Law and Control
Examination of characteristics and selected problems of
control of administrative action. Topics include: varieties
of traditional and constitutional, legal and judicial control,
impact of the Charter, reforms to administrative law control
systems in Canada, and comparisons with developments
outside Canada.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3005
or LAWS 3506, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4510 [0.5 credit]
Topics in Law, Policy and Government
Examination of a selected advanced topic in the area of
law, policy and government. The topics of this course may
vary from year to year and are announced in advance of
registration.
Prerequisite(s): LAWS 2501, LAWS 2502, LAWS 2908 and
fourth-year Honours standing.
Seminars three hours a week.

LAWS 4601 [0.5 credit]
Transnational Law and Human Rights
Examination of the role of law in addressing human
rights issues that transcend traditional categories of
domestic and international law; the potential and limits
of law in addressing human rights issues; the growth of
transnational approaches to law and human rights.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3503
or LAWS 3602, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4603 [0.5 credit]
Transitional Justice
Legal and ethical responses to human rights violations
in the transition to democracy. Dilemmas of the rule of
law; truth and reconciliation; prosecution and punishment;
amnesty; retribution and revenge; restorative justice;
administrative remedy; reparations; International case
studies. Theoretical arguments about justice in context of
country.
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-
year Honours standing.
Seminars three hours a week.

LAWS 4604 [0.5 credit]
Topics in International Law
Topics vary from year to year and are announced in
advance. May include transnational environmental issues;
the international law of armed conflict, peacekeeping
and neutrality; the law of international treaties and
transnational agreements; state responsibility under
international law.
Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601
and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4605 [0.5 credit]
International Law of Armed Conflict
UN Charter prohibition of the use of force. Exceptional,
permissible uses of armed force. Role of Security Council
in determining legality of armed intervention. Collective
security, peacemaking, peacekeeping, neutrality, prohibited
means of warfare. Humanitarian International Law, Geneva Red Cross Conventions, war crimes,
International Criminal Court.
Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601
and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4607 [0.5 credit]
Immigration and Refugee Law
Examination of immigrants and refugees; demographics; Canadian,
international and human rights law and policy. The
Canadian Immigration Act. Legal and social problems
including entry and removal, family reunion, citizenship,
remedies, the rights of clandestine migrants; settlement
rights; non-discrimination; asylum; a nation’s right to
determine membership.
Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2502
and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4610 [0.5 credit]
Special Topics in Transnational Law and Human
Rights
Examination of a selected advanced topic in the area of
transnational law and human rights. The topics of this
course may vary from year to year and are announced in
advance of registration.
Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601
and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4701 [0.5 credit]
Special Topic in Criminal Justice and Social Policy
Examination of a selected topic in criminal justice and
social policy. Topics to be announced well in advance of
registration each year. This course is part of the Summer
School in Criminal Justice and Social Policy and is offered
by the Department of Law.
Also listed as SOWK 4701.
Prerequisite(s): LAWS 2908 and fourth-year Honours
standing.
Seminars three hours a week.
LAWS 4702 [0.5 credit]
Special Topic in Criminal Justice and Social Policy
Examination of a selected topic in criminal justice and social policy. Topics to be announced.
Also listed as SOWK 4702 and SOCI 4702.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4703 [0.5 credit]
Special Topic in Criminal Justice and Social Policy
Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the School of Social Work.
Also listed as SOWK 4703.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4800 [0.5 credit]
Environment and Social Justice
The potential of environmental law to protect the environment and people while promoting opportunities for informed participation in environmental decision making by groups traditionally excluded from these processes; contemporary issues of social justice raised by legal regulation of the environment.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4801 [0.5 credit]
Risk and the Legal Process
Application of risk assessment and management in various legal arenas including insurance, liability and tort, litigation management, environmental protection, and sentencing and parole.
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4802 [0.5 credit]
Criminal Jury Trials
Critical analysis of the criminal jury system including its history and context, the role of the judge, jury dynamics and jury composition. Perspectives and roles of the accused, victims, police, defence counsel, Crown attorney, judges, juries, media, politicians and the public.
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4901 [0.5 credit]
Tutorial in Law
Tutorials or reading courses conducted under the supervision of a faculty member of the Department of Law on a selected topic in which advanced courses are not available (guidelines are posted by the Department).
Prerequisite(s): LAWS 3908, fourth-year Honours standing, written acceptance by a faculty member and permission of the Undergraduate Supervisor.
Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LAWS 4902 [0.5 credit]
Tutorial in Law
Tutorials or reading courses conducted under the supervision of a faculty member of the Department of Law on a selected topic in which advanced courses are not available (guidelines are posted by the Department).
Prerequisite(s): LAWS 3908, fourth-year Honours standing, written acceptance by a faculty member and permission of the Undergraduate Supervisor.
Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LAWS 4903 [0.5 credit]
Advanced Legal Topics
The topics of this course vary from year to year and are announced in advance of registration.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4904 [0.5 credit]
Advanced Legal Topics
The topics of this course vary from year to year and are announced in advance of registration.
Prerequisite(s): LAWS 2908, fourth-year Honours standing, and permission of Department.
Seminars three hours a week.

LAWS 4905 [1.0 credit]
Full-Year Service Learning Placement
This course gives students the opportunity to work with an organization whose focus relates to law. Participating students must identify a host organization and a faculty member to provide supervision (guidelines are posted by the Department).
Includes: Experiential Learning Activity
Prerequisite(s): LAWS 2908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher, written acceptance by a faculty member, permission of the Undergraduate Supervisor and the host organization.
Work at placement site 7-10 hours per week. Regular weekly meetings with on-site supervisor or faculty supervisor.
LAWS 4906 [0.5 credit]
Service Learning Placement
This course gives students the opportunity to work with an organization whose focus relates to law. Participating students must identify a host organization and a faculty member to provide supervision (guidelines are posted by the Department).
Includes: Experiential Learning Activity
Prerequisite(s): LAWS 2908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher, written acceptance by a faculty member, permission of the Undergraduate Supervisor and the host organization. Work at placement site 7-10 hours per week. Regular weekly meetings with on-site supervisor or faculty supervisor.

LAWS 4908 [1.0 credit]
Honours Paper
Students in the BA Honours Law program may write an Honours paper under the supervision of a faculty member of the Department of Law (guidelines are posted by the Department). Students intending to undertake graduate studies are encouraged to complete an Honours paper.
Includes: Experiential Learning Activity
Prerequisite(s): LAWS 3908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher and written acceptance by a faculty member.
Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

Linguistics (Bachelor of Arts)
This section presents the requirements for programs in:
• Linguistics B.A. Honours
• B.A. Honours in Linguistics with a Concentration in Linguistic Theory
• B.A. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders
• Linguistics B.A. Combined Honours
• Linguistics and Discourse Studies B.A. Combined Honours
• Linguistics B.A.
• Minor in Linguistics

Linguistics
B.A. Honours (20.0 credits)
A. Credits Included in the Major CGPA (9.5 credits)
1. 1.5 credit in:
   LING 1001 [0.5] Introduction to Linguistics I
   ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   LING 1002 [0.5] Introduction to Linguistics II
2. 1.0 credit in:
   LING 2005 [0.5] Linguistic Analysis
   LING 2007 [0.5] Phonetics
3. 2.0 credits in:
   LING 3004 [0.5] Syntax I
   LING 3005 [0.5] Morphology I
   LING 3007 [0.5] Phonology I
   LING 3505 [0.5] Semantics

4. 2.0 credits in LING at the 4000 level 2.0
5. 3.0 credits in LING, excluding LING 1100 3.0

B. Credits Not Included in the Major CGPA (10.5 credits)
6. 5.0 credits not in LING or ALDS 5.0
7. 5.5 credits in free electives (maximum 2.5 credits in LING) 5.5

C. Additional Requirements
8. School Language Proficiency Requirement must be satisfied

Total Credits 20.0

B.A. Honours in Linguistics with a Concentration in Linguistic Theory (20.0 credits)
A. Credits Included in the Major CGPA (9.5 credits)
1. 1.0 credit in:
   ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   LING 1001 [0.5] Introduction to Linguistics I
2. 1.0 credit in:
   LING 2005 [0.5] Linguistic Analysis
   LING 2007 [0.5] Phonetics
3. 1.0 credit in:
   LING 3004 [0.5] Syntax I
   LING 3007 [0.5] Phonology I
4. 1.0 credit in LING at the 4000 level 1.0
5. 2.0 credits in LING, excluding LING 1100 2.0
6. 3.5 credits in Degree Concentration: 3.5
   a. 1.0 credit in:
      LING 3005 [0.5] Morphology I
      LING 3505 [0.5] Semantics
   b. 1.0 credit from:
      LING 4004 [0.5] Syntax II
      LING 4005 [0.5] Morphology II
      LING 4007 [0.5] Phonology II
      LING 4505 [0.5] Formal Semantics
      LING 4510 [0.5] Lexical Semantics
   c. 1.5 credits in LING, excluding LING 1100

B. Credits Not Included in the Major CGPA (10.5 credits)
7. 5.0 credits not in LING or ALDS 5.0
8. 3.0 credits not in LING 3.0
9. 2.5 credits in free electives 2.5

C. Additional Requirements
9. School Language Proficiency Requirement must be satisfied.

Total Credits 20.0

B.A. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (20.0 credits)
A. Credits Included in the Major CGPA (9.5 credits)
1. 1.0 credit in:
   ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   LING 1001 [0.5] Introduction to Linguistics I

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2. **1.0 credit in:**
   - LING 2005 [0.5] Linguistic Analysis
   - LING 2007 [0.5] Phonetics
3. **1.0 credit in:**
   - LING 3004 [0.5] Syntax I
   - LING 3007 [0.5] Phonology I
4. **1.0 credit in** LING at the 4000 level
5. **2.0 credits** in LING, excluding LING 1100
6. **3.5 credits** in Degree Concentration: 3.5
   - a. **0.5 credit in:**
     - LING 1002 [0.5] Introduction to Linguistics II
   - b. **2.0 credits in:**
     - LING 2604 [0.5] Communication Disorders I
     - LING 3601 [0.5] Language Processing and the Brain
   - c. **1.0 credit from:**
     - LING 4601 [0.5] Cognitive Neuroscience of Language
     - LING 4603 [0.5] First Language Acquisition
     - LING 4605 [0.5] Psycholinguistic Research Methods
     - LING 4606 [0.5] Statistics for Language Research

**B. Credits not Included in the Major CGPA (10.5 credits)**
7. **5.0 credits** not in LING or ALDS
8. **3.0 credits** not in LING
9. **2.5 credits** in free electives

**C. Additional Requirements**
9. School Language Proficiency Requirement must be satisfied

**Total Credits** 20.0

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**Linguistics and Discourse Studies**

**B.A. Combined Honours (20.0 credits)**

Honours Linguistics and Honours Applied Linguistics and Discourse Studies are combined into the Linguistics and Discourse Studies B.A. Combined Honours.

**A. Credits Included in the Major CGPA (12.0 credits)**
1. **1.5 credits in:**
   - LING 1001 [0.5] Introduction to Linguistics I
   - ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   - LING 1002 [0.5] Introduction to Linguistics II

2. **1.0 credit in:**
   - LING 2005 [0.5] Linguistic Analysis
   - LING 2007 [0.5] Phonetics

3. **2.0 credits in:**
   - LING 3004 [0.5] Syntax I
   - LING 3005 [0.5] Morphology I
   - LING 3007 [0.5] Phonology I
   - LING 3505 [0.5] Semantics

4. **1.0 credit in** LING at the 4000 level
5. **1.0 credit in** LING, excluding LING 1100
6. **1.0 credit in:**
   - ALDS 2201 [0.5] Analysis of Oral Language Use
   - ALDS 2202 [0.5] Analysis of Written Language Use

7. **1.0 credit in** ALDS at the 3000 level or above
8. **1.0 credit in** ALDS at the 4000 level
9. **2.5 credits** in ALDS

**B. Additional Requirements (8.0 credits)**
10. Sufficient free electives to make a total of 20.0 credits for the program
11. School Language Proficiency Requirement must be satisfied

**Total Credits** 20.0

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**Linguistics**

**B.A. (15.0 credits)**

**A. Credits Included in the Major CGPA (6.5 credits)**
1. **1.5 credit in:**
   - LING 1001 [0.5] Introduction to Linguistics I
   - ALDS 1001 [0.5] Language Matters: Introduction to ALDS

2. **1.0 credit in:**
   - LING 2005 [0.5] Linguistic Analysis
   - LING 2007 [0.5] Phonetics

3. **2.0 credits in:**
   - LING 3004 [0.5] Syntax I
   - LING 3005 [0.5] Morphology I
   - LING 3007 [0.5] Phonology I
   - LING 3505 [0.5] Semantics

4. **1.0 credit in** LING at the 4000 level
5. **1.0 credit in** LING, excluding LING 1100

**B. Additional Requirements (14.0 credits)**
6. The requirements of the other discipline must be satisfied
7. Sufficient free electives to make a total of 20.0 credits for the program
8. School Language Proficiency Requirement must be satisfied

**Total Credits** 20.0
8. School Language Proficiency Requirement must be satisfied.

| Total Credits | 15.0 |

**Minor in Linguistics (4.0 credits)**

Open to all undergraduate degree students in programs other than Linguistics.

**Requirements (4.0 credits)**

1. **1.0 credit in:**
   - LING 1001 [0.5] Introduction to Linguistics I
   - ALDS 1001 [0.5] Language Matters: Introduction to ALDS
2. **1.0 credit in:**
   - LING 2005 [0.5] Linguistic Analysis
   - LING 2007 [0.5] Phonetics
3. **1.0 credit in:**
   - LING 3004 [0.5] Syntax I
   - LING 3007 [0.5] Phonology I
4. **1.0 credit in LING, excluding LING 1100**
5. The remaining requirements of the major discipline(s) and degree must be satisfied.

| Total Credits | 4.0 |

**School Language Proficiency Requirement**

Students in B.A. Honours, Combined Honours, or 15 credit programs of the School of Linguistics and Language Studies are required, at graduation, to have a working knowledge of a language other than English. Proficiency is determined by successful completion of a 1.0 credit university course in the language or by an oral or written test given by the School.

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**


**Subject codes:** AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**


**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENV, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SRE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies,
Students in a B.A. Honours program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement.
Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Linguistics (LING) Courses

LING 1001 [0.5 credit]
Introduction to Linguistics I
Nature of language and linguistic knowledge. Formal description and analysis of language: phonetics, phonology, morphology, syntax and semantics. Lecture and tutorial three hours a week.

LING 1002 [0.5 credit]
Introduction to Linguistics II
Survey of topics in linguistics: language change, sociolinguistics, language acquisition and processing. May include language typology, language contact and writing systems. Prerequisite(s): LING 1001 (may be taken concurrently). Lectures three hours a week.

LING 1100 [0.5 credit]
The Mysteries of Language
This course explores some intriguing mysteries of language - whether it is unique to humans, how children master its complexities so easily, how the brain handles language, how languages are born and die. These questions lead us to interesting discoveries about the human mind. Lectures three hours a week.

LING 2005 [0.5 credit]
Linguistic Analysis
Phonological, morphological and syntactic analysis of linguistic data. Coursework consists primarily of practical exercises in data analysis. Includes: Experiential Learning Activity Prerequisite(s): LING 1001. Lecture and tutorial three hours a week.

LING 2007 [0.5 credit]
Phonetics
Description of speech sounds; transcription systems; articulation; acoustics of speech sounds; perception of speech sounds; cross-linguistic diversity and phonetic universals; the role of phonetics in grammar. Includes: Experiential Learning Activity Prerequisites: LING 2001 (no longer offered). Lecture and tutorial three hours a week.

LING 2504 [0.5 credit]
Language and Communication
Some of the central topics in the study of language and communication as pursued by linguists and philosophers. Topics include: the nature of meaning; the connections between language, communication and cognition; language as a social activity. Also listed as PHIL 2504, COMS 2504. Prerequisite(s): second-year standing. Lectures three hours a week.

LING 2604 [0.5 credit]
Communication Disorders I
A survey course highlighting congenital, developmental and acquired disorders of speech, language, fluency, hearing and voice; prevalence, current research, assessment and intervention approaches for each disorder will be presented. Also listed as ALDS 2604. Prerequisite(s): second-year standing or permission of the instructor. Lectures three hours a week.

LING 2802 [0.5 credit]
History of the English Language
A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions. Also listed as ENGL 2105. Prerequisite(s): second-year standing or permission of the department. Lectures three hours a week.

LING 3004 [0.5 credit]
Syntax I
Introduction to syntactic theory. Representation and analysis of sentence structure, syntactic relations and syntactic dependencies. Testing of grammatical hypotheses. Includes: Experiential Learning Activity Prerequisite(s): LING 2005. Lecture and tutorial three hours a week.

LING 3005 [0.5 credit]
Morphology I
Introduction to word structure and morphological theory. Topics include inflectional and derivational morphology, morphological processes, and interaction of morphology with phonology and syntax. Includes: Experiential Learning Activity Prerequisite(s): LING 2005 and LING 2007. Lectures three hours a week.
LING 3007 [0.5 credit]
Phonology I
The sound-systems of languages, analysis of phonological structure; generative phonology; phonological rules and derivations; cross-linguistic diversity and universals; segmental phonology; stress; tone.
Includes: Experiential Learning Activity
Precludes additional credit for LING 3002 (no longer offered).
Prerequisite(s): LING 2001 (no longer offered) or LING 2007.
Lecture and tutorial three hours a week.

LING 3009 [0.5 credit]
Special Topic in Linguistics
Selected topics in general linguistics not ordinarily treated in the regular course program. Contents of the course vary from year to year.
Lectures and discussion three hours per week.

LING 3504 [0.5 credit]
Pragmatics
The study of language in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. May include cross-cultural pragmatics.
Also listed as PHIL 3504.
Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/COMM 2504/LING 2504 or PHIL 3506, or LING 3505 or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Lectures three hours a week.

LING 3505 [0.5 credit]
Semantics
Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.
Also listed as PHIL 3505.
Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/LING 2504 or PHIL 3506, or LING 3504 or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Lectures three hours a week.

LING 3601 [0.5 credit]
Language Processing and the Brain
Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.
Includes: Experiential Learning Activity
Also listed as PSYC 3709.
Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.
Lectures three hours a week.

LING 3603 [0.5 credit]
Child Language
Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.
Includes: Experiential Learning Activity
Also listed as PSYC 3508.
Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.
Lectures three hours a week.

LING 3701 [0.5 credit]
Corpus Linguistics
Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.
Includes: Experiential Learning Activity
Also listed as ALDS 3701.
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.
LING 3702 [0.5 credit]
Sociolinguistics
The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.
Also listed as ALDS 3202.
Precludes additional credit for ALDS 2701 (no longer offered).
Prerequisite(s): ALDS 1001 and third-year standing.
Lecture three hours a week.

LING 3801 [0.5 credit]
Structure of a Specific Language
Description and analysis of the structure of a specific language applying phonology, morphology, syntax, and semantics. Language to be studied will be announced in advance by the School.
Prerequisite(s): LING 2001 (no longer offered) or LING 2005 or LING 2007.
Lectures three hours a week.

LING 3810 [0.5 credit]
Historical Linguistics I
Language change; sound change; analogy; the comparative method; internal reconstruction; the philological method; historical linguistics and pre-history; language change and theories of grammar.
Precludes additional credit for LING 3101.
Prerequisite(s): LING 2007.
Lectures three hours a week.

LING 3811 [0.5 credit]
Language Typology and Universals
Cross-linguistic survey of syntactic and morphological patterns found in the languages of the world. Typological classification and identification of language universals.
Includes: Experiential Learning Activity
Precludes additional credit for LING 3001.
Prerequisite(s): LING 2005.
Lectures three hours a week.

LING 3900 [1.0 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

LING 3901 [0.5 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

LING 4004 [0.5 credit]
Syntax II
Advanced topics in syntax.
Includes: Experiential Learning Activity
Precludes additional credit for LING 4002 (no longer offered).
Prerequisite(s): LING 3004 and third-year standing.
Seminars three hours a week.

LING 4005 [0.5 credit]
Morphology II
Advanced topics in morphology.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3005 and third-year standing.
Seminars three hours a week.

LING 4007 [0.5 credit]
Phonology II
Advanced topics in phonology.
Includes: Experiential Learning Activity
Precludes additional credit for LING 4001 (no longer offered).
Prerequisite(s): LING 3007, and third-year standing.
Seminars three hours a week.

LING 4009 [0.5 credit]
Special Topic in Linguistics
Examination of a topic or more specialized area in linguistics or language study. Topic to be announced. Repeatable for credit when the topic changes.
Prerequisite(s): third- or fourth-year standing in Linguistics or permission of the instructor.
Also offered at the graduate level, with different requirements, as LING 5009, for which additional credit is precluded.
Seminars three hours a week.

LING 4412 [0.5 credit]
Diversité du français
Études des variétés du français, dans ses dimensions spatiales. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English.
Also listed as FREN 4412.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded.
Seminars three hours a week.
LING 4413 [0.5 credit]
Diachronie du français
Étude du français, dans ses dimensions historiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Le cours est enseigné en français, mais les étudiants soumettront des assignations écrites en anglais.
Also listed as FREN 4413.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded.
Seminars three hours a week.

LING 4414 [0.5 credit]
Analyse du français
Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails.
Course is taught in French, but students submit written assignments in English.
Also listed as FREN 4414.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.
Seminars three hours a week.

LING 4415 [0.5 credit]
Variation du français
Étude des variations internes de la langue, dans des dimensions orales/ecrites. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails.
Course is taught in French, but students submit written assignments in English.
Also listed as FREN 4415.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.
Seminars three hours a week.

LING 4505 [0.5 credit]
Formal Semantics
Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.
Includes: Experiential Learning Activity
Also listed as PHIL 4505.
Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing, or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Seminars three hours a week.

LING 4510 [0.5 credit]
Lexical Semantics
Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.
Includes: Experiential Learning Activity
Also listed as PHIL 4055.
Precludes additional credit for LING 4055 (no longer offered).
Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing.
Also offered at the graduate level, with different requirements, as LING 5510, for which additional credit is precluded.
Seminar three hours a week.

LING 4601 [0.5 credit]
Cognitive Neuroscience of Language
Further study of psychological and neurolinguistic mechanisms of adult language processing. May include topics from first language acquisition.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3601 or permission of the instructor.
Also offered at the graduate level, with different requirements, as LING 5601, for which additional credit is precluded.
Seminars three hours a week.

LING 4603 [0.5 credit]
First Language Acquisition
Advanced topics in language acquisition and development and the relative contributions of the environment, cognitive development, and inborn knowledge.
Includes: Experiential Learning Activity
Prerequisite(s): LING 1001 and LING 3603.
Also offered at the graduate level, with different requirements, as LING 5603, for which additional credit is precluded.
Seminars three hours a week.

LING 4604 [0.5 credit]
Practicum in Speech Language Pathology
Through seven-hour-a-week field placements, students pursue personal learning objectives concerning the clinical application of the psycholinguistics of communication disorders and cognitive development. A term paper integrates experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the student's program of study.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3604, fourth-year Honours standing in B.A. or B.Sc. in Linguistics with a Concentration in Psycholinguistics and Communication Disorders with a CGPA of 10.0 in the major, and permission from the School of Linguistics and Language Studies.
Field placement one day a week.
LING 4605 [0.5 credit]  
**Psycholinguistic Research Methods**  
Experimental methodologies used in current psycholinguistic studies. Topics include experimental design and techniques, descriptive statistics, and interpreting and reporting research findings. Includes: Experiential Learning Activity  
Precludes additional credit for LING 4009 Section "A" (2015-16 and 2016-17) and LING 4009 Section "B" (2013-14) and LING 4009 Section "C" (2017-18).  
Prerequisite(s): third- or fourth-year Honours standing in Linguistics or Cognitive Science, or permission of the instructor.  
Also offered at the graduate level, with different requirements, as LING 5605, for which additional credit is precluded.  
Seminar three hours a week.

LING 4606 [0.5 credit]  
**Statistics for Language Research**  
Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.  
Includes: Experiential Learning Activity  
Also listed as ALDS 4606.  
Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.  
Prerequisite(s): Third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.  
Also offered at the graduate level, with different requirements, as LING 5606 and ALDS 5604, for which additional credit is precluded.  
Seminar three hours a week.

LING 4801 [0.5 credit]  
**Linguistic Field Methods**  
With a language consultant, students discover the phonological, morphological, and syntactic structures of the target language using linguistic elicitation. Language will vary from year to year, but will normally be a non-European language. Language documentation, data management, ethical issues surrounding research in Indigenous communities.  
Includes: Experiential Learning Activity  
Prerequisite(s): LING 2005 and LING 2007.  
Also offered at the graduate level, with different requirements, as ALDS 5801, for which additional credit is precluded.  
Lectures three hours a week.

LING 4802 [0.5 credit]  
**Historical Linguistics: English**  
A theory-intensive course that will study the development of English starting with Proto-Indo-European progressing through Common Germanic to the stages of English itself. Topics include phonological sound changes, phonemic inventories, and morphological and syntactic typology. Precludes additional credit for LING 4101.  
Prerequisite(s): LING 2005 and LING 2007, and one of LING 3005, LING 3810 or LING 3811.  
Also offered at the graduate level, with different requirements, as LING 5802, ENGL 5101, for which additional credit is precluded.  
Seminars three hours a week.

LING 4805 [0.5 credit]  
**Old English**  
Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language. Also listed as ENGL 4105.  
Precludes additional credit for ENGL 3102 (no longer offered).  
Prerequisite(s): fourth-year standing or permission of the department.  
Seminar or lecture three hours a week.

LING 4900 [1.0 credit]  
**Independent Study in Linguistics**  
Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.  
Prerequisite(s): permission of the instructor.

LING 4901 [0.5 credit]  
**Independent Study in Linguistics**  
Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.  
Prerequisite(s): permission of the instructor.

LING 4905 [1.0 credit]  
**Honours Project in Experimental Linguistics**  
Students choose existing study in linguistic literature, replicate the study, present findings, compare to original study. Practical experience gathering and preparing materials, running experiments, analyzing data, interpreting findings; real, important contributions to the field of linguistics via replication studies (as mandated by the scientific method).  
Includes: Experiential Learning Activity  
Precludes additional credit for LING 4910.  
Prerequisite(s): fourth-year Honours standing in Linguistics, with a Major CGPA of 9.0, and permission of the instructor.  
Unscheduled.
LING 4910 [1.0 credit]
Honours Thesis in Linguistics
Open to all candidates for the B.A. (Honours) in Linguistics. A thesis project selected in consultation with the School and carried out under the direction of a faculty supervisor. Includes: Experiential Learning Activity
Precludes additional credit for LING 4905.
Prerequisite(s): fourth-year Honours standing in Linguistics with a CGPA of 10.0 in the major; one of LING 3004, LING 3007, LING 3505, or LING 3601; and permission of the instructor.

Linguistics (Bachelor of Science)
This section presents the requirements for programs in:
• B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science)
• B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Neuroscience)
• B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Psychology)
• B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science)
• B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Neuroscience)
• B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Psychology)

B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science) (20.0 credits)
A. Credits Included in the Major CGPA (9.0 credits)
1. 1.0 credit in:
   ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   LING 1001 [0.5] Introduction to Linguistics I
2. 1.0 credit in:
   LING 2005 [0.5] Linguistic Analysis
   LING 2007 [0.5] Phonetics
3. 1.0 credit in:
   LING 3004 [0.5] Syntax I
   LING 3007 [0.5] Phonology I
4. 1.0 credit in LING at the 4000-level 1.0
5. 1.5 credits in LING, excluding LING 1100 1.5
6. 3.5 credits from the Concentration 3.5
   a. 1.0 credit in:
      LING 3005 [0.5] Morphology I
      LING 3505 [0.5] Semantics
   b. 1.0 credit from:
      LING 4004 [0.5] Syntax II
      LING 4005 [0.5] Morphology II
      LING 4007 [0.5] Phonology II
      LING 4505 [0.5] Formal Semantics
      LING 4510 [0.5] Lexical Semantics

B. Credits Not Included in the Major CGPA (11.0 credits)
7. 4.0 credits in Computer Science Requirements 4.0
   a. 1.5 credits in:
      COMP 1005 [0.5] Introduction to Computer Science I
      COMP 1006 [0.5] Introduction to Computer Science II
      COMP 1805 [0.5] Discrete Structures I
   b. 1.5 credits in:
      COMP 2401 [0.5] Introduction to Systems Programming
      COMP 2402 [0.5] Abstract Data Types and Algorithms
      COMP 2404 [0.5] Introduction to Software Engineering
   c. 1.0 credit from:
      COMP 2406 [0.5] Fundamentals of Web Applications
      COMP 2804 [0.5] Discrete Structures II
      COMP 3000 [0.5] Operating Systems
      COMP 3002 [0.5] Compiler Construction
      COMP 3004 [0.5] Object-Oriented Software Engineering
      COMP 3005 [0.5] Database Management Systems
      COMP 3007 [0.5] Programming Paradigms
      COMP 3008 [0.5] Human-Computer Interaction
8. 1.0 credit in:
   MATH 1007 [0.5] Elementary Calculus I
   MATH 1107 [0.5] Linear Algebra I
9. 6.0 credits in free electives 6.0
C. Additional Requirements
10. School Language Proficiency Requirement must be satisfied
11. Bachelor of Science Experimental Science Requirement must be satisfied

Total Credits 20.0

B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Neuroscience) (20.0 credits)
A. Credits Included in the Major CGPA (9.0 credits)
1. 1.0 credit in:
   ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   LING 1001 [0.5] Introduction to Linguistics I
2. 1.0 credit in:
   LING 2005 [0.5] Linguistic Analysis
   LING 2007 [0.5] Phonetics
3. 1.0 credit in:
   LING 3004 [0.5] Syntax I
   LING 3007 [0.5] Phonology I
4. 1.0 credit in LING at the 4000-level 1.0
5. 1.5 credits in LING, excluding LING 1100 1.5
6. 3.5 credits from the Concentration 3.5
   a. 1.0 credit in:
      LING 3005 [0.5] Morphology I
      LING 3505 [0.5] Semantics
   b. 1.0 credit from:
      LING 4004 [0.5] Syntax II
LING 4005 [0.5] Morphology II
LING 4007 [0.5] Phonology II
LING 4505 [0.5] Formal Semantics
LING 4510 [0.5] Lexical Semantics

c. 1.5 credits in LING, excluding LING 1100

B. Credits Not Included in the Major CGPA (11.0 credits)

7. 3.5 credits in Neuroscience  3.5
   a. 2.0 credits in:
      NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease
      NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease
      NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience
      NEUR 2002 [0.5] Introduction to Statistics in Neuroscience
   b. 1.5 credits from:
      NEUR 2201 [0.5] Cellular and Molecular Neuroscience
      NEUR 2202 [0.5] Neurodevelopment and Plasticity
      NEUR 3206 [0.5] Sensory and Motor Neuroscience
      NEUR 3207 [0.5] Systems Neuroscience
      NEUR 3303 [0.5] The Neuroscience of Consciousness

8. 1.5 credits in:
   BIOL 1103 [0.5] Foundations of Biology I
   BIOL 1104 [0.5] Foundations of Biology II
   BIOL 3306 [0.5] Human Anatomy and Physiology

9. 1.0 credit from:
   CHEM 1001 [0.5] General Chemistry I
   & CHEM 1002 [0.5] General Chemistry II
   CHEM 1005 [0.5] Elementary Chemistry I
   & CHEM 1006 [0.5] Elementary Chemistry II

10. 1.0 credit in:
     MATH 1007 [0.5] Elementary Calculus I
     MATH 1107 [0.5] Linear Algebra I

11. 4.0 credits in free electives  4.0

C. Additional Requirements

12. School Language Proficiency Requirement must be satisfied

Total Credits  20.0

B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Psychology) (20.0 credits)

A. Credits included in the Major CGPA (9.0 credits)

1. 1.0 credit in:
   ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   LING 1001 [0.5] Introduction to Linguistics I

2. 1.0 credit in:
   LING 2005 [0.5] Linguistic Analysis
   LING 2007 [0.5] Phonetics

3. 1.0 credit in:
   LING 3004 [0.5] Syntax I
   LING 3007 [0.5] Phonology I

4. 1.0 credit in LING at the 4000 level  1.0

5. 1.5 credits in LING, excluding LING 1100  1.5

6. 3.5 credits from the Concentration:  3.5
   a. 1.0 credit in:
      LING 3005 [0.5] Morphology I
      LING 3505 [0.5] Semantics
   b. 1.0 credit from:
      LING 4004 [0.5] Syntax II
      LING 4005 [0.5] Morphology II
      LING 4007 [0.5] Phonology II
      LING 4505 [0.5] Formal Semantics
      LING 4510 [0.5] Lexical Semantics
   c. 1.5 credits in LING (excluding LING 1100)

B. Credits Not Included in the Major CGPA (11.0 credits)

7. 3.5 credits in Psychology:  3.5
   a. 2.0 credits in:
      PSYC 1001 [0.5] Introduction to Psychology I
      PSYC 1002 [0.5] Introduction to Psychology II
      PSYC 2001 [0.5] Introduction to Research Methods in Psychology
      PSYC 2002 [0.5] Introduction to Statistics in Psychology
   b. 1.5 credits from:
      PSYC 2307 [0.5] Human Neuropsychology I
      PSYC 2700 [0.5] Introduction to Cognitive Psychology
      PSYC 3307 [0.5] Human Neuropsychology II
      PSYC 3506 [0.5] Cognitive Development
      PSYC 3702 [0.5] Perception

8. 1.5 credits in:
   BIOL 1103 [0.5] Foundations of Biology I
   BIOL 1104 [0.5] Foundations of Biology II
   BIOL 3306 [0.5] Human Anatomy and Physiology

9. 1.0 credit from:
   CHEM 1001 [0.5] General Chemistry I
   & CHEM 1002 [0.5] General Chemistry II
   CHEM 1005 [0.5] Elementary Chemistry I
   & CHEM 1006 [0.5] Elementary Chemistry II

10. 1.0 credit in:
     MATH 1007 [0.5] Elementary Calculus I
     MATH 1107 [0.5] Linear Algebra I

11. 4.0 credits in free electives  4.0

C. Additional Requirements

12. School Language Proficiency Requirement must be satisfied

Total Credits  20.0

B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science) (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit in:
   ALDS 1001 [0.5] Language Matters: Introduction to ALDS
   LING 1001 [0.5] Introduction to Linguistics I

2. 1.0 credit in:
   LING 2005 [0.5] Linguistic Analysis
   LING 2007 [0.5] Phonetics

3. 1.0 credit in:
   LING 3004 [0.5] Syntax I
   LING 3007 [0.5] Phonology I

4. 1.0 credit in LING at the 4000 level  1.0

5. 1.5 credits in LING, excluding LING 1100  1.5

6. 3.5 credits from the Concentration:  3.5
   a. 1.0 credit in:
      LING 3005 [0.5] Morphology I
      LING 3505 [0.5] Semantics
   b. 1.0 credit from:
      LING 4004 [0.5] Syntax II
      LING 4005 [0.5] Morphology II
      LING 4007 [0.5] Phonology II
      LING 4505 [0.5] Formal Semantics
      LING 4510 [0.5] Lexical Semantics
   c. 1.5 credits in LING (excluding LING 1100)

B. Credits Not Included in the Major CGPA (11.0 credits)

7. 3.5 credits in Psychology:  3.5
   a. 2.0 credits in:
      PSYC 1001 [0.5] Introduction to Psychology I
      PSYC 1002 [0.5] Introduction to Psychology II
      PSYC 2001 [0.5] Introduction to Research Methods in Psychology
      PSYC 2002 [0.5] Introduction to Statistics in Psychology
   b. 1.5 credits from:
      PSYC 2307 [0.5] Human Neuropsychology I
      PSYC 2700 [0.5] Introduction to Cognitive Psychology
      PSYC 3307 [0.5] Human Neuropsychology II
      PSYC 3506 [0.5] Cognitive Development
      PSYC 3702 [0.5] Perception

8. 1.5 credits in:
   BIOL 1103 [0.5] Foundations of Biology I
   BIOL 1104 [0.5] Foundations of Biology II
   BIOL 3306 [0.5] Human Anatomy and Physiology

9. 1.0 credit from:
   CHEM 1001 [0.5] General Chemistry I
   & CHEM 1002 [0.5] General Chemistry II
   CHEM 1005 [0.5] Elementary Chemistry I
   & CHEM 1006 [0.5] Elementary Chemistry II

10. 1.0 credit in:
     MATH 1007 [0.5] Elementary Calculus I
     MATH 1107 [0.5] Linear Algebra I

11. 4.0 credits in free electives  4.0

C. Additional Requirements

12. School Language Proficiency Requirement must be satisfied

Total Credits  20.0

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3. 1.0 credit in:
   - LING 3004 [0.5] Syntax I
   - LING 3007 [0.5] Phonology I

4. 1.0 credit in LING at the 4000-level 1.0

5. 1.5 credits in LING, excluding LING 1100 1.5

6. 3.5 credits from the Concentration 3.5
   a. 0.5 credit in:
      - LING 1002 [0.5] Introduction to Linguistics II
   b. 2.0 credits in:
      - LING 2604 [0.5] Communication Disorders I
      - LING 3601 [0.5] Language Processing and the Brain
      - LING 3603 [0.5] Child Language
      - LING 3604 [0.5] Communication Disorders II
   c. 1.0 credit from:
      - LING 4601 [0.5] Cognitive Neuroscience of Language
      - LING 4603 [0.5] First Language Acquisition
      - LING 4605 [0.5] Psycholinguistic Research Methods
      - LING 4606 [0.5] Statistics for Language Research

B. Credits Not Included in the Major CGPA (11.0 credits)

7. 4.0 credits in Computer Science Requirements 4.0
   a. 1.5 credits in:
      - COMP 1005 [0.5] Introduction to Computer Science I
      - COMP 1006 [0.5] Introduction to Computer Science II
      - COMP 1805 [0.5] Discrete Structures I
   b. 1.5 credits in:
      - COMP 2401 [0.5] Introduction to Systems Programming
      - COMP 2402 [0.5] Abstract Data Types and Algorithms
      - COMP 2404 [0.5] Introduction to Software Engineering
   c. 1.0 credit from:
      - COMP 2406 [0.5] Fundamentals of Web Applications
      - COMP 2804 [0.5] Discrete Structures II
      - COMP 3000 [0.5] Operating Systems
      - COMP 3002 [0.5] Compiler Construction
      - COMP 3004 [0.5] Object-Directed Software Engineering
      - COMP 3005 [0.5] Database Management Systems
      - COMP 3007 [0.5] Programming Paradigms
      - COMP 3008 [0.5] Human-Computer Interaction

8. 1.0 credit in:
   - MATH 1007 [0.5] Elementary Calculus I
   - MATH 1107 [0.5] Linear Algebra I

9. 6.0 credits in free electives 6.0

C. Additional Requirements

10. School Language Proficiency Requirement must be satisfied
11. Bachelor of Science Experimental Science Requirement must be satisfied

Total Credits 20.0

B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Neuroscience) (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)
   1. 1.0 credit in:
      - ALDS 1001 [0.5] Language Matters: Introduction to ALDS
      - LING 1001 [0.5] Introduction to Linguistics I
   2. 1.0 credit in:
      - LING 2005 [0.5] Linguistic Analysis
      - LING 2007 [0.5] Phonetics
   3. 1.0 credit in:
      - LING 3004 [0.5] Syntax I
      - LING 3007 [0.5] Phonology I
   4. 1.0 credit in LING at the 4000 level 1.0
   5. 1.5 credits in LING, excluding LING 1100 1.5
   6. 3.5 credits from the Concentration:
      a. 0.5 credit in:
         - LING 1002 [0.5] Introduction to Linguistics II
      b. 2.0 credits in:
         - LING 2604 [0.5] Communication Disorders I
         - LING 3601 [0.5] Language Processing and the Brain
         - LING 3603 [0.5] Child Language
         - LING 3604 [0.5] Communication Disorders II
      c. 1.0 credit from:
         - LING 4601 [0.5] Cognitive Neuroscience of Language
         - LING 4603 [0.5] First Language Acquisition
         - LING 4605 [0.5] Psycholinguistic Research Methods
         - LING 4606 [0.5] Statistics for Language Research

B. Credits Not Included in the Major CGPA (11.0 credits)

7. 3.5 credits in Neuroscience: 3.5
   a. 2.0 credits in:
      - NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease
      - NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease
      - NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience
      - NEUR 2002 [0.5] Introduction to Statistics in Neuroscience
   b. 1.5 credits from:
      - NEUR 2201 [0.5] Cellular and Molecular Neuroscience
      - NEUR 2202 [0.5] Neurodevelopment and Plasticity
      - NEUR 3206 [0.5] Sensory and Motor Neuroscience
      - NEUR 3207 [0.5] Systems Neuroscience
      - NEUR 3303 [0.5] The Neuroscience of Consciousness

8. 1.5 credits in:
   - BIOL 1103 [0.5] Foundations of Biology I
   - BIOL 1104 [0.5] Foundations of Biology II
   - BIOL 3306 [0.5] Human Anatomy and Physiology

9. 1.0 credit from: 1.0
B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Psychology) (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

<table>
<thead>
<tr>
<th>1. 1.0 credit in:</th>
<th>1.0</th>
</tr>
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<tbody>
<tr>
<td>ALDS 1001 [0.5]</td>
<td>Language Matters: Introduction to ALDS</td>
</tr>
<tr>
<td>LING 1001 [0.5]</td>
<td>Introduction to Linguistics I</td>
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<thead>
<tr>
<th>2. 1.0 credit in:</th>
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<tbody>
<tr>
<td>LING 2005 [0.5]</td>
<td>Linguistic Analysis</td>
</tr>
<tr>
<td>LING 2007 [0.5]</td>
<td>Phonetics</td>
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<thead>
<tr>
<th>3. 1.0 credit in:</th>
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<tbody>
<tr>
<td>LING 3004 [0.5]</td>
<td>Syntax I</td>
</tr>
<tr>
<td>LING 3007 [0.5]</td>
<td>Phonology I</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>4. 1.0 credit in LING at the 4000 level</th>
<th>1.0</th>
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| 5. 1.5 credits in LING, excluding LING 1100 | 1.5 |

<table>
<thead>
<tr>
<th>6. 3.5 credits from the Concentration</th>
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<tbody>
<tr>
<td>a. 0.5 credit in:</td>
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<tr>
<td>LING 1002 [0.5]</td>
<td>Introduction to Linguistics II</td>
</tr>
<tr>
<td>b. 2.0 credits in:</td>
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</tr>
<tr>
<td>LING 2604 [0.5]</td>
<td>Communication Disorders I</td>
</tr>
<tr>
<td>LING 3601 [0.5]</td>
<td>Language Processing and the Brain</td>
</tr>
<tr>
<td>LING 3603 [0.5]</td>
<td>Child Language</td>
</tr>
<tr>
<td>LING 3604 [0.5]</td>
<td>Communication Disorders II</td>
</tr>
<tr>
<td>c. 1.0 credit from:</td>
<td>1.0</td>
</tr>
<tr>
<td>LING 4601 [0.5]</td>
<td>Cognitive Neuroscience of Language</td>
</tr>
<tr>
<td>LING 4603 [0.5]</td>
<td>First Language Acquisition</td>
</tr>
<tr>
<td>LING 4605 [0.5]</td>
<td>Psycholinguistic Research Methods</td>
</tr>
<tr>
<td>LING 4606 [0.5]</td>
<td>Statistics for Language Research</td>
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</table>

B. Credits Not Included in the Major CGPA (11.0 credits)

<table>
<thead>
<tr>
<th>7. 3.5 credits in Psychology:</th>
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<tbody>
<tr>
<td>a. 2.0 credits in:</td>
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<tr>
<td>PSYC 1001 [0.5]</td>
<td>Introduction to Psychology I</td>
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<tr>
<td>PSYC 1002 [0.5]</td>
<td>Introduction to Psychology II</td>
</tr>
<tr>
<td>PSYC 2001 [0.5]</td>
<td>Introduction to Research Methods in Psychology</td>
</tr>
<tr>
<td>PSYC 2002 [0.5]</td>
<td>Introduction to Statistics in Psychology</td>
</tr>
<tr>
<td>b. 1.5 credits from:</td>
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</tr>
<tr>
<td>PSYC 2307 [0.5]</td>
<td>Human Neuropsychology I</td>
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</table>

<table>
<thead>
<tr>
<th>8. 1.5 credits in:</th>
<th>1.5</th>
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</thead>
<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 3306 [0.5]</td>
<td>Human Anatomy and Physiology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. 1.0 credit from:</th>
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<tbody>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
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<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
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<table>
<thead>
<tr>
<th>10. 1.0 credit in:</th>
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<tbody>
<tr>
<td>MATH 1007 [0.5]</td>
<td>Elementary Calculus I</td>
</tr>
<tr>
<td>MATH 1107 [0.5]</td>
<td>Linear Algebra I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. 4.0 credits in free electives</th>
<th>4.0</th>
</tr>
</thead>
</table>

C. Additional Requirements

12. School Language Proficiency Requirement must be satisfied

Total Credits 20.0

School Language Proficiency Requirement

Students in B.A. Honours, Combined Honours, or 15 credit programs of the School of Linguistics and Language Studies are required, at graduation, to have a working knowledge of a language other than English. Proficiency is determined by successful completion of a 1.0 credit university course in the language or by an oral or written test given by the School.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline: students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors

2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):
1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.

2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

**Declared and Undeclared Students**

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students.

The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

**Change of Program within the B.Sc. Degree**

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

**Experimental Science Requirement**

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

**Approved Experimental Science Courses**

<table>
<thead>
<tr>
<th>Biochemistry</th>
<th></th>
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<tbody>
<tr>
<td>BIOC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
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<table>
<thead>
<tr>
<th>Biology</th>
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</thead>
<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
</tr>
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<table>
<thead>
<tr>
<th>Chemistry</th>
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<tbody>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
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<table>
<thead>
<tr>
<th>Earth Sciences</th>
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<tbody>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
</tr>
<tr>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2404 [0.5]</td>
<td>Engineering Geoscience</td>
</tr>
<tr>
<td>ERTH 2802 [0.5]</td>
<td>Field Geoscience</td>
</tr>
<tr>
<td>ERTH 3111 [0.5]</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
</tr>
<tr>
<td>ERTH 3112 [0.5]</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td>ERTH 3204 [0.5]</td>
<td>Mineral Deposits</td>
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<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
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<td>ERTH 3806 [0.5]</td>
<td>Structural Geology</td>
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<table>
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<tr>
<th>Food Sciences</th>
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<tbody>
<tr>
<td>FOOD 3001 [0.5]</td>
<td>Food Chemistry</td>
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<tr>
<td>FOOD 3002 [0.5]</td>
<td>Food Analysis</td>
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<tr>
<td>FOOD 3005 [0.5]</td>
<td>Food Microbiology</td>
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<table>
<thead>
<tr>
<th>Geography</th>
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<tbody>
<tr>
<td>GEOG 1010 [0.5]</td>
<td>Global Environmental Systems</td>
</tr>
<tr>
<td>GEOG 3108 [0.5]</td>
<td>Soil Properties</td>
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<table>
<thead>
<tr>
<th>Neuroscience</th>
<th></th>
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<tbody>
<tr>
<td>NEUR 3206 [0.5]</td>
<td>Sensory and Motor Neuroscience</td>
</tr>
<tr>
<td>NEUR 3207 [0.5]</td>
<td>Systems Neuroscience</td>
</tr>
<tr>
<td>NEUR 4600 [0.5]</td>
<td>Advanced Lab in Neuroanatomy</td>
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<table>
<thead>
<tr>
<th>Physics</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>PHYS 1001 [0.5]</td>
<td>Foundations of Physics I</td>
</tr>
<tr>
<td>PHYS 1002 [0.5]</td>
<td>Foundations of Physics II</td>
</tr>
<tr>
<td>PHYS 1003 [0.5]</td>
<td>Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td>PHYS 1004 [0.5]</td>
<td>Introductory Electromagnetism and Wave Motion</td>
</tr>
<tr>
<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
</tr>
<tr>
<td>PHYS 1008 [0.5]</td>
<td>Elementary University Physics II</td>
</tr>
<tr>
<td>PHYS 2202 [0.5]</td>
<td>Wave Motion and Optics</td>
</tr>
<tr>
<td>PHYS 2604 [0.5]</td>
<td>Modern Physics I</td>
</tr>
</tbody>
</table>
Course Categories for B.Sc. Programs

Science Geography Courses
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth's Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography
- GEOG 3102 [0.5] Geomorphology
- GEOG 3103 [0.5] Watershed Hydrology
- GEOG 3104 [0.5] Principles of Biogeography
- GEOG 3105 [0.5] Climate and Atmospheric Change
- GEOG 3106 [0.5] Aquatic Science and Management
- GEOG 3108 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 4005 [0.5] Directed Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Micrometeorology
- GEOG 4108 [0.5] Permafrost

Science Psychology Courses
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 2307 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II

Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 2000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
- ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 2903
- Science Geography Courses (see list above)
- Science Psychology Courses (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives
Science Faculty Electives are courses at the 1000-4000 level chosen from:
- BIOL (Biological) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering
- ENSC 2001
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)
### Admission Requirements

**B. Sc. Honours Program**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

### Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

### Advanced Standing

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

### B.Sc. Major Program

**B.Sc. Program**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics. 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.
Advanced Standing
For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Linguistics (LING) Courses
LING 1001 [0.5 credit]
Introduction to Linguistics I
Nature of language and linguistic knowledge. Formal description and analysis of language: phonetics, phonology, morphology, syntax and semantics. Lecture and tutorial three hours a week.

LING 1002 [0.5 credit]
Introduction to Linguistics II
Survey of topics in linguistics: language change, sociolinguistics, language acquisition and processing. May include language typology, language contact and writing systems. Prerequisite(s): LING 1001 (may be taken concurrently). Lectures three hours a week.

LING 1100 [0.5 credit]
The Mysteries of Language
This course explores some intriguing mysteries of language - whether it is unique to humans, how children master its complexities so easily, how the brain handles language, how languages are born and die. These questions lead us to interesting discoveries about the human mind. Lectures three hours a week.

LING 2005 [0.5 credit]
Linguistic Analysis
Phonological, morphological and syntactic analysis of linguistic data. Coursework consists primarily of practical exercises in data analysis. Includes: Experiential Learning Activity
Prerequisite(s): LING 1001.
Lecture and tutorial three hours a week.

LING 2007 [0.5 credit]
Phonetics
Description of speech sounds; transcription systems; articulation; acoustics of speech sounds; perception of speech sounds; cross-linguistic diversity and phonetic universals; the role of phonetics in grammar. Includes: Experiential Learning Activity
Precludes additional credit for LING 2001 (no longer offered).
Prerequisite(s): LING 1001.
Lecture and tutorial three hours a week.

LING 2504 [0.5 credit]
Language and Communication
Some of the central topics in the study of language and communication as pursued by linguists and philosophers. Topics include: the nature of meaning; the connections between language, communication and cognition; language as a social activity. Also listed as PHIL 2504, COMS 2504.
Prerequisite(s): second-year standing.
Lectures three hours a week.

LING 2604 [0.5 credit]
Communication Disorders I
A survey course highlighting congenital, developmental and acquired disorders of speech, language, fluency, hearing and voice; prevalence, current research, assessment and intervention approaches for each disorder will be presented. Also listed as ALDS 2604.
Prerequisite(s): second year standing or permission of the instructor.
Lectures three hours a week.

LING 2802 [0.5 credit]
History of the English Language
A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions. Also listed as ENGL 2105.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.
LING 3004 [0.5 credit]
Syntax I
Introduction to syntactic theory. Representation and analysis of sentence structure, syntactic relations and syntactic dependencies. Testing of grammatical hypotheses.
Includes: Experiential Learning Activity
Prerequisite(s): LING 2005.
Lecture and tutorial three hours a week.

LING 3005 [0.5 credit]
Morphology I
Introduction to word structure and morphological theory. Topics include inflectional and derivational morphology, morphological processes, and interaction of morphology with phonology and syntax.
Includes: Experiential Learning Activity
Prerequisite(s): LING 2005 and LING 2007.
Lectures three hours a week.

LING 3007 [0.5 credit]
Phonology I
The sound-systems of languages, analysis of phonological structure; generative phonology; phonological rules and derivations; cross-linguistic diversity and universals; segmental phonology; stress; tone.
Includes: Experiential Learning Activity
Precludes additional credit for LING 3002 (no longer offered).
Prerequisite(s): LING 2001 (no longer offered) or LING 2007.
Lecture and tutorial three hours a week.

LING 3009 [0.5 credit]
Special Topic in Linguistics
Selected topics in general linguistics not ordinarily treated in the regular course program. Contents of the course vary from year to year.
Lectures and discussion three hours per week.

LING 3004 [0.5 credit]
Pragmatics
The study of language in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker’s reference; speech acts. May include cross-cultural pragmatics.
Also listed as PHIL 3504.
Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/LING 2504 or PHIL 3504/LING 3504, or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Lectures three hours a week.

LING 3505 [0.5 credit]
Semantics
Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.
Also listed as PHIL 3506.
Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/LING 2504/COMM 2504 or PHIL 3504/LING 3504, or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Lectures three hours a week.

LING 3601 [0.5 credit]
Language Processing and the Brain
Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.
Includes: Experiential Learning Activity
Also listed as PSYC 3709.
Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.
Lectures three hours a week.

LING 3603 [0.5 credit]
Child Language
Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.
Includes: Experiential Learning Activity
Also listed as PSYC 3508.
Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.
Lectures three hours a week.

LING 3604 [0.5 credit]
Communication Disorders II
In-depth evaluation of current psycholinguistic models of processes underlying communication disorders and the biomedical support for such models. Emphasis on contrasting developmental disorders with acquired disorders. Additional exploration of other modalities (sign language, reading).
Also listed as ALDS 3604.
Precludes additional credit for LING 3009 Section "A", if taken Winter 2013.
Prerequisite(s): LING 2604.
Lectures three hours a week.
LING 3701 [0.5 credit]
Corpus Linguistics
Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.
Includes: Experiential Learning Activity
Also listed as ALDS 3701.
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

LING 3702 [0.5 credit]
Sociolinguistics
The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.
Also listed as ALDS 3202.
Prerequisite(s): ALDS 1001 and third-year standing.
Lecture three hours a week.

LING 3801 [0.5 credit]
Structure of a Specific Language
Description and analysis of the structure of a specific language applying phonology, morphology, syntax, and semantics. Language to be studied will be announced in advance by the School.
Prerequisite(s): LING 2001 (no longer offered) or LING 2005 or LING 2007.
Lectures three hours a week.

LING 3810 [0.5 credit]
Historical Linguistics I
Language change; sound change; analogy; the comparative method; internal reconstruction; the philological method; historical linguistics and pre-history; language change and theories of grammar.
Prerequisite(s): LING 3101.
Lectures three hours a week.

LING 3811 [0.5 credit]
Language Typology and Universals
Cross-linguistic survey of syntactic and morphological patterns found in the languages of the world. Typological classification and identification of language universals.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3001.
Lectures three hours a week.

LING 3900 [1.0 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

LING 3901 [0.5 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

LING 4004 [0.5 credit]
Syntax II
Advanced topics in syntax.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3004 and third-year standing.
Seminars three hours a week.

LING 4005 [0.5 credit]
Morphology II
Advanced topics in morphology.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3005 and third-year standing.
Seminars three hours a week.

LING 4007 [0.5 credit]
Phonology II
Advanced topics in phonology.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3007, and third-year standing.
Seminars three hours a week.

LING 4009 [0.5 credit]
Special Topic in Linguistics
Examination of a topic or more specialized area in linguistics or language study. Topic to be announced.
Repeatable for credit when the topic changes.
Prerequisite(s): third- or fourth-year standing in Linguistics or permission of the instructor.
Also offered at the graduate level, with different requirements, as LING 5009, for which additional credit is precluded.
Seminars three hours a week.
LING 4412 [0.5 credit]
**Diversité du français**
Études des variétés du français, dans ses dimensions spatiales. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Le cours est taught in French, but students will submit written assignments in English. Also listed as FREN 4412.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded.
Seminars three hours a week.

LING 4413 [0.5 credit]
**Diachronie du français**
Étude du français, dans ses dimensions historiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Le cours est taught in French, but students will submit written assignments in English. Also listed as FREN 4413.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded.
Seminars three hours a week.

LING 4414 [0.5 credit]
**Analyse du français**
Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Le cours est taught in French, but students will submit written assignments in English. Also listed as FREN 4414.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.
Seminars three hours a week.

LING 4415 [0.5 credit]
**Variation du français**
Étude des variations internes de la langue, dans des dimensions orales/écrites. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Le cours est taught in French, but students submit assignments in English. Also listed as FREN 4415.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded.
Seminars three hours a week.

LING 4505 [0.5 credit]
**Formal Semantics**
Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.
Includes: Experiential Learning Activity
Also listed as PHIL 4505.
Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing, or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Seminars three hours a week.

LING 4510 [0.5 credit]
**Lexical Semantics**
Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.
Includes: Experiential Learning Activity
Also listed as PHIL 4055.
Precludes additional credit for LING 4055 (no longer offered).
Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing.
Also offered at the graduate level, with different requirements, as LING 5510, for which additional credit is precluded.
Seminars three hours a week.

LING 4601 [0.5 credit]
**Cognitive Neuroscience of Language**
Further study of psychological and neurolinguistic mechanisms of adult language processing. May include topics from first language acquisition.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3601 or permission of the instructor.
Also offered at the graduate level, with different requirements, as LING 5601, for which additional credit is precluded.
Seminars three hours a week.

LING 4603 [0.5 credit]
**First Language Acquisition**
Advanced topics in language acquisition and development and the relative contributions of the environment, cognitive development, and inborn knowledge.
Includes: Experiential Learning Activity
Prerequisite(s): LING 1001 and LING 3603.
Also offered at the graduate level, with different requirements, as LING 5603, for which additional credit is precluded.
Seminars three hours a week.
**LING 4604 [0.5 credit]**

Practicum in Speech Language Pathology

Through seven-hour-a-week field placements, students pursue personal learning objectives concerning the clinical application of the psycholinguistics of communication disorders and cognitive development. A term paper integrates experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the student’s program of study.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3604, fourth-year Honours standing in B.A. or B.Sc. in Linguistics with a Concentration in Psycholinguistics and Communication Disorders with a CGPA of 10.0 in the major, and permission from the School of Linguistics and Language Studies.

Field placement one day a week.

**LING 4605 [0.5 credit]**

Psycholinguistic Research Methods

Experimental methodologies used in current psycholinguistic studies. Topics include experimental design and techniques, descriptive statistics, and interpreting and reporting research findings.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4009 Section "A" (2015-16 and 2016-17) and LING 4009 Section "B" (2013-14) and LING 4009 Section "C" (2017-18).

Prerequisite(s): third- or fourth-year Honours standing in Linguistics or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5605, for which additional credit is precluded.

Seminar three hours a week.

**LING 4606 [0.5 credit]**

Statistics for Language Research

Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.

Includes: Experiential Learning Activity

Also listed as ALDS 4606.

Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.

Prerequisite(s): Third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5606 and ALDS 5604, for which additional credit is precluded.

Seminar three hours a week.

**LING 4604 [0.5 credit]**

Practicum in Speech Language Pathology

Through seven-hour-a-week field placements, students pursue personal learning objectives concerning the clinical application of the psycholinguistics of communication disorders and cognitive development. A term paper integrates experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the student’s program of study.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3604, fourth-year Honours standing in B.A. or B.Sc. in Linguistics with a Concentration in Psycholinguistics and Communication Disorders with a CGPA of 10.0 in the major, and permission from the School of Linguistics and Language Studies.

Field placement one day a week.

**LING 4605 [0.5 credit]**

Psycholinguistic Research Methods

Experimental methodologies used in current psycholinguistic studies. Topics include experimental design and techniques, descriptive statistics, and interpreting and reporting research findings.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4009 Section "A" (2015-16 and 2016-17) and LING 4009 Section "B" (2013-14) and LING 4009 Section "C" (2017-18).

Prerequisite(s): third- or fourth-year Honours standing in Linguistics or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5605, for which additional credit is precluded.

Seminar three hours a week.

**LING 4606 [0.5 credit]**

Statistics for Language Research

Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.

Includes: Experiential Learning Activity

Also listed as ALDS 4606.

Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.

Prerequisite(s): Third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5606 and ALDS 5604, for which additional credit is precluded.

Seminar three hours a week.

**LING 4801 [0.5 credit]**

Linguistic Field Methods

With a language consultant, students discover the phonological, morphological, and syntactic structures of the target language using linguistic elicitation. Language will vary from year to year, but will normally be a non-European language. Language documentation, data management, ethical issues surrounding research in Indigenous communities.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005 and LING 2007.

Also offered at the graduate level, with different requirements, as ALDS 5801, for which additional credit is precluded.

Lectures three hours a week.

**LING 4802 [0.5 credit]**

Historical Linguistics: English

A theory-intensive course that will study the development of English starting with Proto-Indo-European progressing through Common Germanic to the stages of English itself. Topics include phonological sound changes, phonemic inventories, and morphological and syntactic typology.

Precludes additional credit for LING 4101.

Prerequisite(s): LING 3005, LING 3810 or LING 3811.

Also offered at the graduate level, with different requirements, as LING 5802, ENGL 5101., for which additional credit is precluded.

Seminars three hours a week.

**LING 4805 [0.5 credit]**

Old English

Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.

Also listed as ENGL 4105.

Precludes additional credit for ENGL 3102 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminor or lecture three hours a week.

**LING 4900 [1.0 credit]**

Independent Study in Linguistics

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.

Prerequisite(s): permission of the instructor.

**LING 4901 [0.5 credit]**

Independent Study in Linguistics

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.

Prerequisite(s): permission of the instructor.
LING 4905 [1.0 credit]
Honours Project in Experimental Linguistics
Students choose existing study in linguistic literature, replicate the study, present findings, compare to original study. Practical experience gathering and preparing materials, running experiments, analyzing data, interpreting findings; real, important contributions to the field of linguistics via replication studies (as mandated by the scientific method).
Includes: Experiential Learning Activity
Precludes additional credit for LING 4910.
Prerequisite(s): fourth-year Honours standing in Linguistics, with a Major CGPA of 9.0, and permission of the instructor.
Unscheduled.

LING 4910 [1.0 credit]
Honours Thesis in Linguistics
Open to all candidates for the B.A. (Honours) in Linguistics. A thesis project selected in consultation with the School and carried out under the direction of a faculty supervisor.
Includes: Experiential Learning Activity
Precludes additional credit for LING 4905.
Prerequisite(s): fourth-year Honours standing in Linguistics with a CGPA of 10.0 in the major; one of LING 3004, LING 3007, LING 3505, or LING 3601; and permission of the instructor.

Mandarin Chinese (Minor)
This section presents the requirements for programs in:
- Minor in Mandarin Chinese

Minor in Mandarin Chinese (4.0 credits)
Open to all undergraduate degree students.

Requirements:
1. 3.0 credits in CHIN
2. 1.0 credit in CHIN at the 3000-level or higher
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations
In addition to the requirements listed here, students must satisfy:
1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Chinese (CHIN) Courses
Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

CHIN 1010 [0.5 credit]
First-Year Mandarin Chinese I
For students with no knowledge of Mandarin. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language.
Compulsory attendance.
Precludes additional credit for CHIN 1110.
Four hours a week.

CHIN 1020 [0.5 credit]
First-Year Mandarin Chinese II
Continuation of first-year Mandarin Chinese. Oral skills; basic reading and writing skills. Compulsory attendance.
Precludes additional credit for CHIN 1110.
Prerequisite(s): grade of C or higher in CHIN 1010, or permission of the School.
Four hours a week.

CHIN 1110 [1.0 credit]
Intensive First-Year Mandarin Chinese
For students with no knowledge of Mandarin Chinese. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language.
Compulsory attendance.
Precludes additional credit for CHIN 1010 and CHIN 1020.
Eight hours a week (one term).
CHIN 2010 [0.5 credit]
Second-Year Mandarin Chinese I
Further study of Mandarin Chinese to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for CHIN 2110. Prerequisite(s): grade of C or higher in CHIN 1020 or CHIN 1110, or permission of the School. Four hours a week.

CHIN 2020 [0.5 credit]
Second-Year Mandarin Chinese II
Continuation of second-year Mandarin Chinese. Further study of Mandarin Chinese to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for CHIN 2110. Prerequisite(s): grade of C or higher in CHIN 2010 or permission of the School. Four hours a week.

CHIN 2110 [1.0 credit]
Intensive Second-Year Mandarin Chinese
Further study of Mandarin Chinese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for CHIN 2010 and CHIN 2020. Prerequisite(s): grade of C or higher in CHIN 1020 or CHIN 1110, or permission of the School. Eight hours a week (one term).

CHIN 3010 [0.5 credit]
Third-Year Mandarin Chinese I
Continuation of the study of Mandarin Chinese to reach a more advanced level, including ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 2020, or CHIN 2110, or permission of the School. Three hours a week.

CHIN 3015 [0.5 credit]
Mandarin Chinese for Heritage Speakers
For students who have attained Mandarin Chinese proficiency in an informal setting, this course provides an opportunity to build on their existing language skills and to develop them in a formal academic setting. The course will formalize grammar awareness and enhance Mandarin Chinese literacy skills. Precludes additional credit for 1000 and 2000 level CHIN courses, and also for CHIN 3010. Prerequisite(s): permission of the School. Three hours a week.

CHIN 3020 [0.5 credit]
Third-Year Mandarin Chinese II
Continuation of third-year Mandarin Chinese. Progress toward reaching a more advanced level, including ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 3010 or CHIN 3015, or permission of the School. Three hours a week.

CHIN 4010 [0.5 credit]
Fourth-Year Mandarin Chinese I
Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 3020, or permission of the School. Three hours a week.

CHIN 4020 [0.5 credit]
Fourth-Year Mandarin Chinese II
Continuation of fourth-year Mandarin Chinese. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 4010, or permission of the School. Three hours a week.

CHIN 4210 [0.5 credit]
Functional Contemporary Mandarin Chinese I
Further study of Mandarin Chinese to reach a more advanced level, aimed at developing speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 4020, or permission of the School. Three hours a week.

CHIN 4220 [0.5 credit]
Functional Contemporary Mandarin Chinese II
Continuation of CHIN 4210. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains. Prerequisite(s): grade of C or higher in CHIN 4210 or permission of the School. Three hours a week.
Mathematics and Statistics

This section presents the requirements for programs in:

- Minor in Mathematics
- Minor in Statistics

Program Requirements

Course Prerequisites

The following courses central to B.Math. programs have grade requirements in their prerequisites:

- MATH 2000 requires C+ in (MATH 1002 (no longer offered) or MATH 2052), or B+ in (MATH 2007 or MATH 1005), and C+ in (MATH 1102 (no longer offered) or MATH 2152), or B+ in (MATH 1107 or MATH 1104).
- MATH 2100 requires C+ in (MATH 1102 (no longer offered) or MATH 2152), or B+ in MATH 2107.
- MATH 2454 requires C+ in (MATH 1002 (no longer offered) or MATH 2052 or MATH 2007 or MATH 1005), and C+ in (MATH 1102 (no longer offered) or MATH 2152 or MATH 2107).
- STAT 2655 requires C+ in (MATH 1002 (no longer offered) or MATH 2052 or MATH 2007 or MATH 1005), and C+ in (MATH 1102 (no longer offered) or MATH 2152 or MATH 1107 or MATH 1104).
- MATH 2007 requires MATH 1004 or C- in (MATH 1007 or MATH 1009).
- MATH 2107 requires MATH 1104 or C- in MATH 1107

Course Categories for B.Math. Programs

2000-level Honours Sequence

The following courses constitute the 2000-level Honours Sequence:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2000</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
<td>1.0</td>
</tr>
<tr>
<td>MATH 2100</td>
<td>Advanced Calculus</td>
<td>1.0</td>
</tr>
<tr>
<td>MATH 2454</td>
<td>Ordinary Differential Equations</td>
<td>0.5</td>
</tr>
<tr>
<td>STAT 2559</td>
<td>Basics of Statistical Modeling</td>
<td>0.5</td>
</tr>
<tr>
<td>STAT 2655</td>
<td>Introduction to Probability with Applications</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 2907</td>
<td>Directed Studies</td>
<td>0.5</td>
</tr>
</tbody>
</table>

3000-level Honours Sequence

The following courses constitute the 3000-level Honours Sequence. Courses in the 3000-level Honours Sequence have grade levels in their prerequisites:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3001</td>
<td>Real Analysis I (Honours)</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3002</td>
<td>Real Analysis II (Honours)</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3003</td>
<td>Advanced Differential Calculus</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3057</td>
<td>Functions of a Complex Variable</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3008</td>
<td>Ordinary Differential Equations</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3106</td>
<td>Introduction to Group Theory</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3158</td>
<td>Rings and Fields (Honours)</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3306</td>
<td>Elements of Set Theory (Honours)</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3355</td>
<td>Number Theory and Applications</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 3806</td>
<td>Numerical Analysis (Honours)</td>
<td>0.5</td>
</tr>
</tbody>
</table>
GEOMATIC, GEOGRAPHY, ECONOMICS

item 3 under Prohibited and Restricted Courses below as Arts or Social Sciences Electives except for the Sciences and the Faculty of Public Affairs are acceptable. All courses offered by the Faculty of Arts and Social Sciences are acceptable. All courses with the following subject codes:

**Natural Science Electives**
- BIOL, CHEM, ENSC, ERTH, ISCI, NSCI, PHYS

**APPROVED ARTS OR SOCIAL SCIENCES ELECTIVES**
- All courses offered by the Faculty of Arts and Social Sciences are acceptable. All courses with the following subject codes:
  - **Natural Science Electives**
  - **ECON**
  - **INFT**
  - **MATH**
  - **ENVE**
  - **ENST**
  - **PSYC**
  - **SOWK**
  - **SYSC**
  - **BUSI**
  - **MATH**
  - **COMS**
  - **BIOL**
  - **ENST**
  - **PSYC**
  - **SOWK**
  - **SYSC**
  - **PSYC**
  - **SOWK**
  - **SYSC**

**Prohibited and Restricted Courses**
1. MATH 1805/COMP 1805 can be counted only as a half-credit free elective in Mathematics and Statistics programs.
2. The following courses may not be counted for academic credit (even as free electives) in any program offered by the School of Mathematics and Statistics: BIOL 3604, COMS 3001, CRCJ 3001, ECON 1401, ECON 1402, ECON 2201 (no longer offered), ECON 2202 (no longer offered), ECON 2210, ECON 2220, ECON 2400 (no longer offered), ECON 3001, ECON 4001, ECON 4002, ECON 4004, ECON 4025, ECON 4706, ECON 4707, ECON 4713, ECON 2606, ECON 2607, ECON 3003, NEUR 2001, NEUR 2002, NEUR 3001, NEUR 3002, PSCI 2702, PSYC 2001, PSYC 2002, PSYC 3000 [1.0], SOCI 3000, SOCI 3002, SOCI 4009, SOWK 3001, SYSC 2510.

Students who have completed ECON 2201 (no longer offered) and ECON 2202 (no longer offered) and enter a B.Math. program may be exempted from taking STAT 2507 and STAT 2509 only with permission of the School of Mathematics and Statistics, and provided the grade in ECON 2201 (no longer offered) and ECON 2202 (no longer offered) is B- or higher in each.
3. BUSI 1402, BUSI 2402, and COMP 1001 may not count for credit in a B.Math or a Computer Science and Mathematics B.Math Combined Honours program, even as free electives.
4. Only one of MATH 3806, COMP 3806 (no longer offered), COMP 3800 (no longer offered), or MATH 3800 may count for credit in a B.Math program.

**Mathematics**

**B. Math. Honours (20.0 credits)**

A. Credits Included in the Major CGPA (11.5 credits)

1. **2.5 credits in:**
   - MATH 1052 [0.5] Calculus and Introductory Analysis I
   - MATH 1152 [0.5] Introduction to Mathematical Reasoning
   - MATH 1800 [0.5] Introduction to Mathematical Analysis I
   - MATH 2052 [0.5] Calculus and Introductory Analysis II
   - MATH 2152 [0.5] Introductory Algebra II

2. **3.5 credits in:**
   - MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis
MATH 2100 [1.0] Algebra
MATH 2454 [0.5] Ordinary Differential Equations (Honours)
STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
STAT 2655 [0.5] Introduction to Probability with Applications (Honours)

3. 2.0 credits in: 2.0
   MATH 3001 [0.5] Real Analysis I (Honours)
   MATH 3057 [0.5] Functions of a Complex Variable (Honours)
   MATH 3106 [0.5] Introduction to Group Theory (Honours)
   MATH 3158 [0.5] Rings and Fields (Honours)

4. 0.5 credit from: 0.5
   MATH 3002 [0.5] Real Analysis II (Honours)
   MATH 3003 [0.5] Advanced Differential Calculus (Honours)
   MATH 3008 [0.5] Ordinary Differential Equations (Honours)

5. 1.0 credit from 3000-level Honours Sequence 1.0
   MATH 3801 [0.5] Linear Programming
   STAT 3553 [0.5] Regression Modeling (Honours)
   MATH 3806 [0.5] Linear Programming

6. 1.5 credits in MATH or STAT at the 4000-level or higher 1.5
   MATH 4905 [0.5] Honours Project (Honours)
   STAT 4905 [0.5] Honours Project (Honours)

B. Credits Not Included in the Major CGPA (8.5 credits)

7. 0.5 credit in: 0.5
   MATH 4905 [0.5] Honours Project (Honours)

B. Credits Not Included in the Major CGPA (8.5 credits)

8. 4.0 credits not in MATH, STAT or COMP, consisting of: 4.0
   a. 1.0 credit in Natural Science Electives
   b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives

9. 4.5 credits in free electives 4.5

Total Credits 20.0

Mathematics with Concentration in Stochastics
B. Math. Honours (20.0 credits)

Items 3, 4, 5 and 6 in the Mathematics degree requirements are replaced by:

3. 3.0 credits in: 3.0
   MATH 3001 [0.5] Real Analysis I (Honours)
   MATH 3008 [0.5] Ordinary Differential Equations (Honours)
   STAT 3506 [0.5] Stochastic Processes and Applications (Honours)
   STAT 3558 [0.5] Elements of Probability Theory (Honours)
   STAT 3559 [0.5] Mathematical Statistics (Honours)
   STAT 4501 [0.5] Probability Theory (Honours)

4. 0.5 credit from: 0.5
   STAT 3553 [0.5] Regression Modeling (Honours)
   MATH 3801 [0.5] Linear Programming

5. 0.5 credit in STAT at the 4000-level 0.5
   MATH 3806 [0.5] Linear Programming

6. 1.0 credit in MATH or STAT at the 4000-level or higher 1.0

Total Credits 5.0

Computational and Applied Mathematics and Statistics with Concentration
B. Math. Honours (20.0 credits)

A. Credits included in the Major CGPA (14.5 credits)
1. 7.5 credits in: 7.5
   MATH 2100 [1.0] Algebra
   MATH 2454 [0.5] Ordinary Differential Equations (Honours)
   STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
   STAT 2655 [0.5] Introduction to Probability with Applications (Honours)
   MATH 3001 [0.5] Real Analysis I (Honours)
   MATH 3057 [0.5] Functions of a Complex Variable (Honours)
   MATH 3106 [0.5] Introduction to Group Theory (Honours)
   MATH 3158 [0.5] Rings and Fields (Honours)
   MATH 3002 [0.5] Real Analysis II (Honours)
   MATH 3003 [0.5] Advanced Differential Calculus (Honours)
   MATH 3008 [0.5] Ordinary Differential Equations (Honours)
   MATH 4905 [0.5] Honours Project (Honours)
   STAT 4905 [0.5] Honours Project (Honours)
   MATH 3806 [0.5] Linear Programming
   STAT 3553 [0.5] Regression Modeling (Honours)
   MATH 3801 [0.5] Linear Programming

COMP 1405 [0.5] Introduction to Computer Science I
COMP 1406 [0.5] Introduction to Computer Science II
COMP 2401 [0.5] Introduction to Systems Programming
COMP 2402 [0.5] Abstract Data Types and Algorithms
MATH 1052 [0.5] Calculus and Introductory Analysis I
MATH 1152 [0.5] Introductory Algebra I
STAT 1500 [0.5] Introduction to Statistical Computing
MATH 1800 [0.5] Introduction to Mathematical Reasoning
MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis
MATH 2052 [0.5] Calculus and Introductory Analysis II
MATH 2152 [0.5] Introductory Algebra II
MATH 2454 [0.5] Ordinary Differential Equations (Honours)
STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
STAT 2655 [0.5] Introduction to Probability with Applications (Honours)

6. 1.0 credit from: 1.0
   MATH 4700 [0.5] Partial Differential Equations (Honours)
   MATH 4701 [0.5] Topics in Differential Equations (Honours)
   MATH 4703 [0.5] Dynamical Systems (Honours)
   MATH 4708 [0.5] Asymptotic Methods of Applied Mathematics (Honours)
   MATH 4806 [0.5] Numerical Linear Algebra (Honours)
   MATH 4816 [0.5] Numerical Analysis for Differential Equations (Honours)
2c. 0.5 credit in MATH at the 4000 level 0.5
2d. 2.0 credits in MATH or STAT at the 3000 level or above 2.0

Total Credits 6.5

Concentration in Applied Statistics and Probability (6.5 credits)

Requirements:
2a. 2.5 credits in:
   MATH 3107 [0.5] Linear Algebra III
   STAT 3506 [0.5] Stochastic Processes and Applications (Honours)
   STAT 3553 [0.5] Regression Modeling (Honours)
   STAT 3558 [0.5] Elements of Probability Theory (Honours)
   STAT 3559 [0.5] Mathematical Statistics (Honours)
2b. 1.5 credits from:
   STAT 4500 [0.5] Parametric Estimation (Honours)
   STAT 4502 [0.5] Survey Sampling (Honours)
   STAT 4503 [0.5] Applied Multivariate Analysis (Honours)
   STAT 4504 [0.5] Statistical Design and Analysis of Experiments (Honours)
   STAT 4506 [0.5] Nonparametric Statistics (Honours)
   STAT 4508 [0.5] Stochastic Models (Honours)
   STAT 4509 [0.5] Advanced Mathematical Modeling (Honours)
   STAT 4555 [0.5] Monte Carlo Simulation (Honours)
   STAT 4601 [0.5] Data Mining I (Honours)
   STAT 4603 [0.5] Time Series and Forecasting (Honours)
   STAT 4604 [0.5] Statistical Computing (Honours)
2c. 2.5 credits in MATH or STAT at the 3000 level or above 2.5

Total Credits 6.5

Concentration in Discrete Mathematics (6.5 credits)

Requirements:
2a. 3.0 credits in:
   MATH 2100 [1.0] Algebra
   MATH 3801 [0.5] Linear Programming
   MATH 3802 [0.5] Combinatorial Optimization
   MATH 3806 [0.5] Numerical Analysis (Honours)
   MATH 3855 [0.5] Discrete Structures and Applications (Honours)
2b. 1.0 credit from:
   MATH 4109 [0.5] Fields and Coding Theory (Honours)
   MATH 4801 [0.5] Topics in Combinatorics (Honours)
   MATH 4802 [0.5] Introduction to Mathematical Logic (Honours)
   MATH 4803 [0.5] Computable Functions (Honours)
   MATH 4805 [0.5] Theory of Automata (Honours)
   MATH 4807 [0.5] Game Theory (Honours)
   MATH 4808 [0.5] Graph Theory and Algorithms (Honours)
   MATH 4811 [0.5] Combinatorial Design Theory (Honours)
2c. 0.5 credit in MATH at the 4000 level 0.5
2d. 2.0 credits in MATH or STAT at the 3000 level or above 2.0

Total Credits 6.5

Statistics

B. Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)
1. 3.0 credits in:
   MATH 1052 [0.5] Calculus and Introductory Analysis I
   MATH 1152 [0.5] Introductory Algebra I
   MATH 1800 [0.5] Introduction to Mathematical Reasoning
   MATH 2052 [0.5] Calculus and Introductory Analysis II
   MATH 2152 [0.5] Introductory Algebra II
   STAT 1500 [0.5] Introduction to Statistical Computing
2. 1.0 credit in:
   COMP 1005 [0.5] Introduction to Computer Science I
   COMP 1006 [0.5] Introduction to Computer Science II
3. 6.0 credits in:
   MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis
   MATH 2454 [0.5] Ordinary Differential Equations (Honours)
   MATH 3806 [0.5] Numerical Analysis (Honours)
   STAT 4905 [0.5] Honours Project (Honours)
   STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
   STAT 2655 [0.5] Introduction to Probability with Applications (Honours)
   STAT 3506 [0.5] Stochastic Processes and Applications (Honours)
   STAT 3553 [0.5] Regression Modeling (Honours)
   STAT 3558 [0.5] Elements of Probability Theory (Honours)
   STAT 3559 [0.5] Mathematical Statistics (Honours)
   STAT 4500 [0.5] Parametric Estimation (Honours)
4. 1.0 credit from:
   MATH 2100 [1.0] Algebra
   or
   MATH 3107 [0.5] Linear Algebra III
   and 0.5 credit from:
   3000-level Honours Sequence, or:
   MATH 3705 [0.5] Mathematical Methods I
   MATH 3801 [0.5] Linear Programming
   MATH 3807 [0.5] Mathematical Software (Honours)
   MATH 3809 [0.5] Introduction to Number Theory and Cryptography
   or Mathematics or Statistics at the 4000-level or higher
5. 0.5 credit from the 3000-level Honours Sequence or MATH or STAT at the 4000-level or higher
6. 1.5 credits in STAT at the 4000-level
7. B. Credits Not Included in the Major CGPA (7.0 credits)
   4.0 credits not in MATH, STAT or COMP, consisting of:
   a. 1.0 credit in Natural Science Electives
   b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives
8. 3.0 credits in free electives

Total Credits 20.0
### Statistics with Concentration in Actuarial Science

**B. Math. Honours (20.0 credits)**

#### A. Credits Included in the Major CGPA (14.0 credits)

**1. 3.0 credits in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1052 [0.5]</td>
<td>Calculus and Introductory Analysis I</td>
</tr>
<tr>
<td>MATH 1152 [0.5]</td>
<td>Introductory Algebra I</td>
</tr>
<tr>
<td>MATH 1800 [0.5]</td>
<td>Introduction to Mathematical Reasoning</td>
</tr>
<tr>
<td>MATH 2052 [0.5]</td>
<td>Calculus and Introductory Analysis II</td>
</tr>
<tr>
<td>STAT 1500 [0.5]</td>
<td>Introduction to Statistical Computing</td>
</tr>
</tbody>
</table>

**2. 0.5 credit in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1005 [0.5]</td>
<td>Introduction to Computer Science I</td>
</tr>
</tbody>
</table>

**3. 6.5 credits in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2000 [1.0]</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
</tr>
<tr>
<td>MATH 2454 [0.5]</td>
<td>Ordinary Differential Equations (Honours)</td>
</tr>
<tr>
<td>MATH 3806 [0.5]</td>
<td>Numerical Analysis (Honours)</td>
</tr>
<tr>
<td>STAT 2559 [0.5]</td>
<td>Basics of Statistical Modeling (Honours)</td>
</tr>
<tr>
<td>STAT 2655 [0.5]</td>
<td>Introduction to Probability with Applications (Honours)</td>
</tr>
<tr>
<td>STAT 2660 [0.5]</td>
<td>Mathematics for Finance (Honours)</td>
</tr>
<tr>
<td>STAT 3506 [0.5]</td>
<td>Stochastic Processes and Applications (Honours)</td>
</tr>
<tr>
<td>STAT 3553 [0.5]</td>
<td>Regression Modeling (Honours)</td>
</tr>
<tr>
<td>STAT 3558 [0.5]</td>
<td>Elements of Probability Theory (Honours)</td>
</tr>
<tr>
<td>STAT 3559 [0.5]</td>
<td>Mathematical Statistics (Honours)</td>
</tr>
<tr>
<td>STAT 4500 [0.5]</td>
<td>Parametric Estimation (Honours)</td>
</tr>
<tr>
<td>STAT 4905 [0.5]</td>
<td>Honours Project (Honours)</td>
</tr>
</tbody>
</table>

**4. 1.0 credit in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3107 [0.5]</td>
<td>Linear Algebra III</td>
</tr>
<tr>
<td>and 0.5 credit from:</td>
<td></td>
</tr>
<tr>
<td>3000-level Honours Sequence, or:</td>
<td></td>
</tr>
<tr>
<td>MATH 3705 [0.5]</td>
<td>Mathematical Methods I</td>
</tr>
<tr>
<td>MATH 3801 [0.5]</td>
<td>Linear Programming</td>
</tr>
<tr>
<td>MATH 3807 [0.5]</td>
<td>Mathematical Software (Honours)</td>
</tr>
<tr>
<td>MATH 3809 [0.5]</td>
<td>Introduction to Number Theory and Cryptography</td>
</tr>
</tbody>
</table>

or Mathematics or Statistics at the 4000-level or higher

**5. 1.0 credit in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 3660 [0.5]</td>
<td>Actuarial Mathematics I</td>
</tr>
<tr>
<td>STAT 3661 [0.5]</td>
<td>Life Contingent Risk Modelling I</td>
</tr>
</tbody>
</table>

**6. 2.0 credit in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 4508 [0.5]</td>
<td>Stochastic Models (Honours)</td>
</tr>
<tr>
<td>STAT 4603 [0.5]</td>
<td>Time Series and Forecasting (Honours)</td>
</tr>
<tr>
<td>STAT 4660 [0.5]</td>
<td>Actuarial Mathematics II</td>
</tr>
<tr>
<td>STAT 4661 [0.5]</td>
<td>Life Contingent Risk Modelling II</td>
</tr>
</tbody>
</table>

#### B. Credits Not Included in the Major CGPA (7.0 credits):

**7. 3.0 credits in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSI 1001 [0.5]</td>
<td>Principles of Financial Accounting</td>
</tr>
<tr>
<td>BUSI 1002 [0.5]</td>
<td>Management Accounting</td>
</tr>
<tr>
<td>ECON 1001 [0.5]</td>
<td>Introduction to Microeconomics</td>
</tr>
<tr>
<td>ECON 1002 [0.5]</td>
<td>Introduction to Macroeconomics</td>
</tr>
<tr>
<td>ECON 2020 [0.5]</td>
<td>Intermediate Microeconomics I: Producers and Market Structure</td>
</tr>
<tr>
<td>ECON 2102 [0.5]</td>
<td>Intermediate Macroeconomics I</td>
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</tbody>
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**8. 2.0 credits in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSI 2504 [0.5]</td>
<td>Business Finance I</td>
</tr>
<tr>
<td>BUSI 2505 [0.5]</td>
<td>Business Finance II</td>
</tr>
<tr>
<td>BUSI 3500 [0.5]</td>
<td>Applied Corporate Finance</td>
</tr>
<tr>
<td>BUSI 3512 [0.5]</td>
<td>Derivatives</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>ECON 2030 [0.5]</td>
<td>Intermediate Microeconomics II: Consumers and General Equilibrium</td>
</tr>
<tr>
<td>ECON 3050 [0.5]</td>
<td>Introduction to Financial Economics</td>
</tr>
<tr>
<td>ECON 4051 [0.5]</td>
<td>Financial Asset Pricing</td>
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<tr>
<td>ECON 4052 [0.5]</td>
<td>Corporate Financial Economics</td>
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</table>

#### 9. 1.0 credit in Natural Science electives 1.0

**Total Credits: 20.0**

### Mathematics

**B. Math. (15.0 credits)**

#### A. Credits Included in the Major CGPA (7.5 credits)

**1. 0.5 credit in:**

<table>
<thead>
<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>MATH 1800 [0.5]</td>
<td>Introduction to Mathematical Reasoning</td>
</tr>
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</table>

**2. 1.0 credit in:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MATH 1007 [0.5]</td>
<td>Elementary Calculus I</td>
</tr>
<tr>
<td>or MATH 1004 [0.6]</td>
<td>Calculus for Engineering or Physics</td>
</tr>
<tr>
<td>and MATH 1052 [0.6]</td>
<td>Calculus and Introductory Analysis I</td>
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or

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>MATH 2007 [0.5]</td>
<td>Elementary Calculus II</td>
</tr>
<tr>
<td>or MATH 1005 [0.6]</td>
<td>Differential Equations and Infinite Series for Engineering or Physics</td>
</tr>
<tr>
<td>or MATH 2052 [0.6]</td>
<td>Calculus and Introductory Analysis II</td>
</tr>
</tbody>
</table>

**3. 1.0 credit in:**

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MATH 1107 [0.5]</td>
<td>Linear Algebra I</td>
</tr>
<tr>
<td>or MATH 1104 [0.6]</td>
<td>Linear Algebra for Engineering or Science</td>
</tr>
<tr>
<td>or MATH 1152 [0.6]</td>
<td>Introductory Algebra I</td>
</tr>
</tbody>
</table>

and

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2107 [0.5]</td>
<td>Linear Algebra II</td>
</tr>
<tr>
<td>or MATH 2152 [0.5]</td>
<td>Introductory Algebra II</td>
</tr>
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**4. 2.0 credits in:**

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MATH 2008 [0.5]</td>
<td>Intermediate Calculus</td>
</tr>
<tr>
<td>MATH 2108 [0.5]</td>
<td>Abstract Algebra I</td>
</tr>
<tr>
<td>MATH 2404 [0.5]</td>
<td>Ordinary Differential Equations I</td>
</tr>
<tr>
<td>STAT 2507 [0.5]</td>
<td>Introduction to Statistical Modeling I</td>
</tr>
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**5. 3.0 credits from:**

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<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>STAT 2509 [0.5]</td>
<td>Introduction to Statistical Modeling II</td>
</tr>
<tr>
<td>MATH or STAT at the 3000-level or higher</td>
<td></td>
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**Excluding:**

<table>
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<tbody>
<tr>
<td>MATH 3101 [0.5]</td>
<td>Algebraic Structures with Computer Applications</td>
</tr>
<tr>
<td>STAT 3502 [0.5]</td>
<td>Probability and Statistics</td>
</tr>
</tbody>
</table>

**B. Credits Not Included in the Major CGPA (7.5 credits)**
6. 4.0 credits not in MATH, STAT or COMP, consisting of: 4.0
   a. 1.0 credit in Natural Science Electives
   b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives
7. 3.5 credits in free electives. 3.5

Total Credits 15.0

Computer Mathematics
B. Math. (15.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)
1. 0.5 credit in: 0.5
   MATH 1800 [0.5] Introduction to Mathematical Reasoning
2. 1.0 credit in: 1.0
   MATH 1007 [0.5] Elementary Calculus I
   or MATH 1004 [0.5] Calculus for Engineering or Physics
   or MATH 1052 [0.5] Calculus and Introductory Analysis I
   and
   MATH 2007 [0.5] Elementary Calculus II
   or MATH 1005 [0.5] Differential Equations and Infinite Series
   for Engineering or Physics
   or MATH 2052 [0.5] Calculus and Introductory Analysis II
3. 1.0 credit in: 1.0
   MATH 1107 [0.5] Linear Algebra I
   or MATH 1104 [0.5] Linear Algebra for Engineering or Science
   or MATH 1152 [0.5] Introductory Algebra I
   and
   MATH 2107 [0.5] Linear Algebra II
   or MATH 2152 [0.5] Introductory Algebra II
4. 2.5 credits in: 2.5
   COMP 1005 [0.5] Introduction to Computer Science I
   COMP 1006 [0.5] Introduction to Computer Science II
   COMP 2401 [0.5] Introduction to Systems Programming
   COMP 2402 [0.5] Abstract Data Types and Algorithms
   COMP 2404 [0.5] Introduction to Software Engineering
5. 2.5 credits in: 2.5
   MATH 2008 [0.5] Intermediate Calculus
   MATH 3804 [0.5] Design and Analysis of Algorithms I
   MATH 3825 [0.5] Discrete Structures and Applications
   STAT 2507 [0.5] Introduction to Statistical Modeling I
   STAT 2605 [0.5] Probability Models
6. 0.5 credit from: 0.5
   MATH 2108 [0.5] Abstract Algebra I
   MATH 3101 [0.5] Algebraic Structures with Computer Applications
7. 1.0 credit from: 1.0
   MATH 3801 [0.5] Linear Programming
   MATH 3802 [0.5] Combinatorial Optimization
   MATH 3800 [0.5] Mathematical Modeling and Computational Methods
   MATH 3807 [0.5] Mathematical Software (Honours)
   MATH 3809 [0.5] Introduction to Number Theory and Cryptography
8. 1.0 credit in MATH or STAT at the 3000 level 1.0

Statistics
B. Math. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1. 1.0 credit in: 1.0
   MATH 1800 [0.5] Introduction to Mathematical Reasoning
   STAT 1500 [0.5] Introduction to Statistical Computing
2. 1.0 credit in: 1.0
   MATH 1007 [0.5] Elementary Calculus I
   or MATH 1004 [0.5] Calculus for Engineering or Physics
   or MATH 1052 [0.5] Calculus and Introductory Analysis I
   and
   MATH 2007 [0.5] Elementary Calculus II
   or MATH 1005 [0.5] Differential Equations and Infinite Series
   for Engineering or Physics
   or MATH 2052 [0.5] Calculus and Introductory Analysis II
3. 1.0 credit in: 1.0
   MATH 1107 [0.5] Linear Algebra I
   or MATH 1104 [0.5] Linear Algebra for Engineering or Science
   or MATH 1152 [0.5] Introductory Algebra I
   and
   MATH 2107 [0.5] Linear Algebra II
   or MATH 2152 [0.5] Introductory Algebra II
4. 4.0 credits in: 4.0
   MATH 2008 [0.5] Intermediate Calculus
   STAT 2507 [0.5] Introduction to Statistical Modeling I
   STAT 2509 [0.5] Introduction to Statistical Modeling II
   STAT 3503 [0.5] Regression Analysis
   STAT 3504 [0.5] Analysis of Variance and Experimental Design
   STAT 3507 [0.5] Sampling Methodology
   STAT 3508 [0.5] Elements of Probability Theory
   STAT 3509 [0.5] Mathematical Statistics
5. 0.5 credit from: 0.5
   BUSI 1402 [0.5] Introduction to Business Information and Communication Technologies
   COMP 1005 [0.5] Introduction to Computer Science I
   ECOR 1606 [0.5] Problem Solving and Computers
6. 0.5 credit in MATH or STAT at the 2000 level 0.5
B. Credits Not Included in the Major CGPA (7.0 credits)
7. 4.0 credits not in MATH, STAT or COMP, consisting of: 4.0
   a. 1.0 credit in Natural Science Electives
   b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives
B. Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (16.0 credits)

1. 4.5 credits in:
   - MATH 1052 [0.5] Calculus and Introductory Analysis I
   - MATH 1152 [0.5] Introductory Algebra I
   - MATH 1800 [0.5] Introduction to Mathematical Reasoning
   - MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis
   - MATH 2052 [0.5] Calculus and Introductory Analysis II
   - MATH 2100 [1.0] Algebra
   - MATH 2152 [0.5] Introductory Algebra II

2. 6.0 credits in:
   - COMP 1405 [0.5] Introduction to Computer Science I
   - COMP 1406 [0.5] Introduction to Computer Science II
   - COMP 2401 [0.5] Introduction to Systems Programming
   - COMP 2402 [0.5] Abstract Data Types and Algorithms
   - COMP 2404 [0.5] Introduction to Software Engineering
   - COMP 2406 [0.5] Fundamentals of Web Applications
   - COMP 2804 [0.5] Discrete Structures II
   - COMP 3000 [0.5] Operating Systems
   - COMP 3004 [0.5] Object-Oriented Software Engineering
   - COMP 3005 [0.5] Database Management Systems
   - COMP 3804 [0.5] Design and Analysis of Algorithms I
   - COMP 3805 [0.5] Discrete Structures and Applications (Honours)

3. 0.5 credit from:
   - COMP 4905 [0.5] Honours Project
   - MATH 4905 [0.5] Honours Project (Honours)

4. 3.0 credits from:
   - MATH 2454 [0.5] Ordinary Differential Equations (Honours)
   - STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
   - STAT 2655 [0.5] Introduction to Probability with Applications (Honours)
   - MATH 3801 [0.5] Linear Programming
   - MATH 3806 [0.5] Numerical Analysis (Honours)
   - COMP 4804 [0.5] Design and Analysis of Algorithms II

5. 0.5 credit from:
   - MATH 3001 [0.5] Real Analysis I (Honours)
   - MATH 3002 [0.5] Real Analysis II (Honours)
   - MATH 3003 [0.5] Advanced Differential Calculus (Honours)
   - MATH 3007 [0.5] Functions of a Complex Variable (Honours)
   - MATH 3008 [0.5] Ordinary Differential Equations (Honours)
   - MATH 4109 [0.5] Fields and Coding Theory (Honours)
   - MATH 4801 [0.5] Topics in Combinatorics (Honours)
   - MATH 4802 [0.5] Introduction to Mathematical Logic (Honours)
   - MATH 4803 [0.5] Computable Functions (Honours)
   - MATH 4805 [0.5] Theory of Automata (Honours)
   - MATH 4806 [0.5] Numerical Linear Algebra (Honours)
   - MATH 4807 [0.5] Game Theory (Honours)
   - MATH 4808 [0.5] Graph Theory and Algorithms (Honours)
   - MATH 4811 [0.5] Combinatorial Design Theory (Honours)
   - MATH 4816 [0.5] Numerical Analysis for Differential Equations (Honours)
   - MATH 4821 [0.5] Quantum Computing (Honours)
   - MATH 4822 [0.5] Wavelets and Digital Signal Processing (Honours)

6. 1.0 credit from:
   - MATH 4805 [0.5] Theory of Automata (Honours)
   - MATH 4806 [0.5] Numerical Linear Algebra (Honours)
   - MATH 4807 [0.5] Game Theory (Honours)
   - MATH 4808 [0.5] Graph Theory and Algorithms (Honours)
   - MATH 4811 [0.5] Combinatorial Design Theory (Honours)
   - MATH 4816 [0.5] Numerical Analysis for Differential Equations (Honours)
   - MATH 4821 [0.5] Quantum Computing (Honours)
   - MATH 4822 [0.5] Wavelets and Digital Signal Processing (Honours)

7. 0.5 credit in COMP at the 3000 level or above.

B. Credits Not Included in the Major CGPA (4.0 credits)

8. 4.0 credits not in MATH, STAT, or COMP consisting of:
   - 1.0 credit in Natural Science electives
   - 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives

Total Credits: 20.0

Note:

The following courses offered by the School of Business and the Faculty of Engineering are treated as Computer Science courses in this program:

**Business**
- BUSI 2400 [0.5] Foundations of Information Systems
- BUSI 4400 [0.5] IS Strategy, Management and Acquisition
- BUSI 4406 [0.5] Business Analytics

**Engineering**
- SYSC 3303 [0.5] Real-Time Concurrent Systems
- SYSC 4005 [0.5] Discrete Simulation/Modeling
- SYSC 4507 [0.5] Computer Systems Architecture

Computer Science and Mathematics: Concentration in Statistics and Computing

B. Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (16.5 credits)

1. 5.0 credits in:
   - MATH 1052 [0.5] Calculus and Introductory Analysis I
   - MATH 1152 [0.5] Introductory Algebra I
   - MATH 1800 [0.5] Introduction to Mathematical Reasoning
   - MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis

2. 4.0 credits from:
   - MATH 2454 [0.5] Ordinary Differential Equations (Honours)
   - STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
   - STAT 2655 [0.5] Introduction to Probability with Applications (Honours)
   - MATH 3801 [0.5] Linear Programming
   - MATH 3806 [0.5] Numerical Analysis (Honours)
   - COMP 4804 [0.5] Design and Analysis of Algorithms II

3. 0.5 credit from:
   - MATH 3001 [0.5] Real Analysis I (Honours)
   - MATH 3002 [0.5] Real Analysis II (Honours)
   - MATH 3003 [0.5] Advanced Differential Calculus (Honours)
**B.Sc. Double Honours (21.5 credits)**

**Mathematics and Physics**

**B.Sc. Double Honours (21.5 credits)**

Note that the following courses have minimum grade requirements in their prerequisites. Refer to the section Course Prerequisites under the Mathematics and Statistics programs sections of the calendar.

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2000</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
<td>1.0</td>
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<tr>
<td>MATH 2100</td>
<td>Algebra</td>
<td>1.0</td>
</tr>
<tr>
<td>MATH 2152</td>
<td>Introductory Algebra II</td>
<td>0.5</td>
</tr>
<tr>
<td>STAT 1500</td>
<td>Introduction to Statistical Computing</td>
<td>0.5</td>
</tr>
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<td>MATH 2052</td>
<td>Calculus and Introductory Analysis II</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 2100</td>
<td>Algebra</td>
<td>1.0</td>
</tr>
<tr>
<td>MATH 2454</td>
<td>Ordinary Differential Equations</td>
<td>0.5</td>
</tr>
<tr>
<td>STAT 2655</td>
<td>Introduction to Probability with Applications</td>
<td>0.5</td>
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<tr>
<td>PHYS 2401</td>
<td>Introduction to Computer Science II</td>
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<td>PHYS 2100</td>
<td>Electric and Magnetic Fields</td>
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<tr>
<td>PHYS 2305</td>
<td>Waves and Optics</td>
<td>0.5</td>
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**A. Credits Included in the Major CGPA (17.0 credits)**

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<tr>
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<tr>
<td>MATH 1052</td>
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</tr>
<tr>
<td>MATH 1152</td>
<td>Introductory Algebra I</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 1800</td>
<td>Introduction to Mathematical Reasoning</td>
<td>0.5</td>
</tr>
<tr>
<td>MATH 2000</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
<td>1.0</td>
</tr>
<tr>
<td>MATH 2052</td>
<td>Calculus and Introductory Analysis II</td>
<td>1.0</td>
</tr>
<tr>
<td>MATH 2100</td>
<td>Algebra</td>
<td>1.0</td>
</tr>
<tr>
<td>MATH 2152</td>
<td>Introductory Algebra II</td>
<td>0.5</td>
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<tr>
<td>MATH 2454</td>
<td>Ordinary Differential Equations</td>
<td>0.5</td>
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<tr>
<td>MATH 3001</td>
<td>Real Analysis I (Honours)</td>
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<tr>
<td>MATH 3008</td>
<td>Ordinary Differential Equations</td>
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<tr>
<td>MATH 3057</td>
<td>Functions of a Complex Variable (Honours)</td>
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<td>Mathematical Methods I</td>
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<tr>
<td>STAT 2655</td>
<td>Introduction to Probability with Applications (Honours)</td>
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**B. Credits Not Included in the Major CGPA (3.5 credits)**

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<td>PHYS 3308</td>
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<td>PHYS 3701</td>
<td>Elements of Quantum Mechanics</td>
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<td>Advanced Dynamics</td>
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<td>PHYS 2202</td>
<td>Wave Motion and Optics</td>
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<tr>
<td>PHYS 2305</td>
<td>Electricity and Magnetism</td>
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<td>PHYS 2401</td>
<td>Thermal Physics</td>
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<td>Modern Physics I</td>
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<td>PHYS 1008</td>
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**Total Credits**

20.0
## Economics and Mathematics

### B.Math. Combined Honours (20.0 credits)

#### A. Credits Included in the Major CGPA (15.5 credits)

<table>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
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<td>Calculus and Introductory Analysis I</td>
</tr>
<tr>
<td>MATH 1152</td>
<td>Introductory Algebra I</td>
</tr>
<tr>
<td>MATH 1800</td>
<td>Introduction to Mathematical Reasoning</td>
</tr>
<tr>
<td>MATH 2000</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
</tr>
<tr>
<td>MATH 2052</td>
<td>Calculus and Introductory Analysis II</td>
</tr>
<tr>
<td>MATH 2100</td>
<td>Algebra</td>
</tr>
<tr>
<td>MATH 2152</td>
<td>Introductory Algebra II</td>
</tr>
<tr>
<td>MATH 2454</td>
<td>Ordinary Differential Equations (Honours)</td>
</tr>
<tr>
<td>MATH 3001</td>
<td>Real Analysis I (Honours)</td>
</tr>
<tr>
<td>STAT 2655</td>
<td>Introduction to Probability with Applications (Honours)</td>
</tr>
<tr>
<td>STAT 2559</td>
<td>Basics of Statistical Modeling (Honours)</td>
</tr>
<tr>
<td>STAT 3558</td>
<td>Elements of Probability Theory (Honours)</td>
</tr>
<tr>
<td>STAT 3559</td>
<td>Mathematical Statistics (Honours)</td>
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1. 7.5 credits in:

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>MATH 1052</td>
<td>Calculus and Introductory Analysis I</td>
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<tr>
<td>MATH 1152</td>
<td>Introductory Algebra I</td>
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<tr>
<td>MATH 2000</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
</tr>
<tr>
<td>MATH 2052</td>
<td>Calculus and Introductory Analysis II</td>
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#### B. Credits Not Included in the Major CGPA (4.5 credits)

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<tr>
<td>BIOL 1104</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>CHEM 1001</td>
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</tr>
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<td>CHEM 1002</td>
<td>General Chemistry II</td>
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<td>CHEM 1005</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006</td>
<td>Elementary Chemistry II</td>
</tr>
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<td>MATH 1152</td>
<td>Calculus and Introductory Analysis I</td>
</tr>
<tr>
<td>MATH 1800</td>
<td>Introduction to Mathematical Reasoning</td>
</tr>
<tr>
<td>STAT 2655</td>
<td>Introduction to Probability with Applications (Honours)</td>
</tr>
<tr>
<td>STAT 2559</td>
<td>Basics of Statistical Modeling (Honours)</td>
</tr>
<tr>
<td>STAT 3558</td>
<td>Elements of Probability Theory (Honours)</td>
</tr>
<tr>
<td>STAT 3559</td>
<td>Mathematical Statistics (Honours)</td>
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</table>

1. 1.0 credit from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>MATH 1052</td>
<td>Calculus and Introductory Analysis I</td>
</tr>
<tr>
<td>MATH 1152</td>
<td>Introductory Algebra I</td>
</tr>
<tr>
<td>MATH 1800</td>
<td>Introduction to Mathematical Reasoning</td>
</tr>
<tr>
<td>MATH 2000</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
</tr>
</tbody>
</table>

#### Notes:

1. An Honours Essay (ECON 4908 [1.0]) may be written by students with Overall and Major CGPAS of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may count for 1.0 credit in ECON at the 4000-level. Qualified students who choose to pursue the Honours Essay option must first complete an Honours Essay prospectus to the satisfaction of both their adviser and the Department of Economics Undergraduate Supervisor.

2. The following courses do not count for credit in this program: ECON 1401, ECON 1402, ECON 2201 (no longer offered), ECON 2202 (no longer offered), ECON 2210, ECON 2220, ECON 2400 (no longer offered), ECON 3001, ECON 4001, ECON 4002, ECON 4004, ECON 4025, ECON 4706, ECON 4707, and ECON 4713.

### Economics and Statistics

#### B.Math. Combined Honours (20.0 credits)

#### A. Credits Included in the Major CGPA (16.0 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1052</td>
<td>Calculus and Introductory Analysis I</td>
</tr>
<tr>
<td>MATH 1152</td>
<td>Introductory Algebra I</td>
</tr>
<tr>
<td>MATH 1800</td>
<td>Introduction to Mathematical Reasoning</td>
</tr>
<tr>
<td>MATH 2000</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
</tr>
<tr>
<td>MATH 2052</td>
<td>Calculus and Introductory Analysis II</td>
</tr>
</tbody>
</table>

1. 9.0 credits in:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1052</td>
<td>Calculus and Introductory Analysis I</td>
</tr>
<tr>
<td>MATH 1152</td>
<td>Introductory Algebra I</td>
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<tr>
<td>MATH 1800</td>
<td>Introduction to Mathematical Reasoning</td>
</tr>
<tr>
<td>MATH 2000</td>
<td>Multivariable Calculus and Fundamentals of Analysis</td>
</tr>
<tr>
<td>MATH 2052</td>
<td>Calculus and Introductory Analysis II</td>
</tr>
</tbody>
</table>

#### B. Credits Not Included in the Major CGPA (4.5 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 1001</td>
<td>Introduction to Microeconomics</td>
</tr>
<tr>
<td>ECON 1002</td>
<td>Introduction to Macroeconomics</td>
</tr>
<tr>
<td>ECON 2020</td>
<td>Intermediate Microeconomics I: Producers and Market Structure</td>
</tr>
<tr>
<td>ECON 2030</td>
<td>Intermediate Microeconomics II: Consumers and General Equilibrium</td>
</tr>
<tr>
<td>ECON 2102</td>
<td>Intermediate Macroeconomics I</td>
</tr>
<tr>
<td>ECON 2103</td>
<td>Intermediate Macroeconomics II</td>
</tr>
<tr>
<td>ECON 4020</td>
<td>Advanced Microeconomic Theory</td>
</tr>
<tr>
<td>ECON 4021</td>
<td>Advanced Macroeconomic Theory</td>
</tr>
</tbody>
</table>

#### Notes:

1. An Honours Essay (ECON 4908 [1.0]) may be written by students with Overall and Major CGPAS of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may count for 1.0 credit in ECON at the 4000-level. Qualified students who choose to pursue the Honours Essay option must first complete an Honours Essay prospectus to the satisfaction of both their adviser and the Department of Economics Undergraduate Supervisor.

2. The following courses do not count for credit in this program: ECON 1401, ECON 1402, ECON 2201 (no longer offered), ECON 2202 (no longer offered), ECON 2210, ECON 2220, ECON 2400 (no longer offered), ECON 3001, ECON 4001, ECON 4002, ECON 4004, ECON 4025, ECON 4706, ECON 4707, and ECON 4713.
Program Requirements for Combined B.Math./M.Sc.

This "fast-track" program combines the requirements for Bachelor of Mathematics in Mathematics or Statistics, and Master of Science in Mathematics, into a sequence that will enable exceptional students to complete in four years of study.

Entry to this program directly from an Ontario High School requires both of the following:

1. an average of 90 per cent or better on Grade 12 Mathematics: Advanced Functions and Grade 12 Mathematics: Calculus and Vectors;
2. an average of 85 per cent or better over six credits in Grade 12 courses of University or University/College type.

Admission, continuation and graduation from the undergraduate portion of the program requires a Major CGPA of 11.0 or better and Overall CGPA of 10.00 or better.

Before entry into the fourth year of this program, students must: obtain a recommendation from the School of Mathematics and Statistics to continue, apply to graduate with a B.Math. degree, by the end of January of their third year, and submit an application for graduate studies to the School by mid-February.

Undergraduate Portion

Students may apply for admission to either the Mathematics or the Statistics versions of the program.

Mathematics (Combined B.Math./M.Sc.)

B.Math. (15.0 credits)

<table>
<thead>
<tr>
<th>A. Credits Included in the Major CGPA (10.0 credits)</th>
<th>7.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1052 [0.5] Calculus and Introductory Analysis I</td>
<td></td>
</tr>
<tr>
<td>MATH 1152 [0.5] Introductory Algebra I</td>
<td></td>
</tr>
<tr>
<td>MATH 1800 [0.5] Introduction to Mathematical Reasoning</td>
<td></td>
</tr>
<tr>
<td>MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis</td>
<td></td>
</tr>
<tr>
<td>MATH 2052 [0.5] Calculus and Introductory Analysis II</td>
<td></td>
</tr>
<tr>
<td>MATH 2100 [1.0] Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 2152 [0.5] Introductory Algebra II</td>
<td></td>
</tr>
<tr>
<td>MATH 2454 [0.5] Ordinary Differential Equations (Honours)</td>
<td></td>
</tr>
<tr>
<td>MATH 3001 [0.5] Real Analysis I (Honours)</td>
<td></td>
</tr>
<tr>
<td>MATH 3057 [0.5] Functions of a Complex Variable (Honours)</td>
<td></td>
</tr>
<tr>
<td>MATH 3106 [0.5] Introduction to Group Theory (Honours)</td>
<td></td>
</tr>
<tr>
<td>MATH 3158 [0.5] Rings and Fields (Honours)</td>
<td></td>
</tr>
<tr>
<td>STAT 2655 [0.5] Introduction to Probability with Applications (Honours)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. 0.5 credit from:</th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3002 [0.5] Real Analysis II (Honours)</td>
<td></td>
</tr>
<tr>
<td>MATH 3003 [0.5] Advanced Differential Calculus (Honours)</td>
<td></td>
</tr>
<tr>
<td>MATH 3008 [0.5] Ordinary Differential Equations (Honours)</td>
<td></td>
</tr>
</tbody>
</table>

| 3. 0.5 credit from 3000-level Honours Sequence or MATH or STAT at the 4000-level or higher | 0.5 |

Notes:

1. An Honours Essay ECON 4908 [1.0] may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may count for 1.0 credit in ECON at the 4000-level. Qualified students who choose to pursue the Honours Essay option must first complete an Honours Essay prospectus to the satisfaction of both their adviser and the Department of Economics Undergraduate Supervisor.

2. MATH 2100 [1.0] may replace MATH 3107 and 0.5 credit in free electives in this program.
4. 1.5 credits at the 4000-level or higher in MATH or STAT 1.5

B. Credits Not Included in the Major CGPA (5.0 credits)

5. 4.0 credits not in MATH, STAT or COMP, consisting of:
   a. 1.0 credit in Natural Science Electives
   b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives 4.0

6. 1.0 credit in free electives 1.0

Total Credits 15.0

Students wishing to specialize in Stochastics may, with the permission of the School, replace Credits Included in the Major CGPA of the Mathematics version with:

1. 6.0 credits in:
   a. MATH 1052 [0.5] Calculus and Introductory Analysis I
   b. MATH 1152 [0.5] Introductory Algebra I
   c. MATH 1800 [0.5] Introduction to Mathematical Reasoning
   d. MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis
   e. MATH 2052 [0.5] Calculus and Introductory Analysis II
   f. MATH 2100 [1.0] Algebra
   g. MATH 2152 [0.5] Introductory Algebra II
   h. MATH 2454 [0.5] Ordinary Differential Equations (Honours)
   i. STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
   j. STAT 2655 [0.5] Introduction to Probability with Applications (Honours)
   k. MATH 3001 [0.5] Real Analysis I (Honours)
   l. STAT 3506 [0.5] Stochastic Processes and Applications (Honours)
   m. STAT 3553 [0.5] Regression Modeling (Honours)
   n. STAT 3558 [0.5] Elements of Probability Theory (Honours)
   o. MATH 3002 [0.5] Real Analysis II (Honours)
   p. STAT 3559 [0.5] Mathematical Statistics (Honours)
   q. MATH 3003 [0.5] Advanced Differential Calculus (Honours)
   r. STAT 355 [0.5] Stochastic Processes and Applications (Honours)
   s. MATH 3057 [0.5] Functions of a Complex Variable (Honours)
   t. STAT 3558 [0.5] Elements of Probability Theory (Honours)
   u. MATH 3008 [0.5] Ordinary Differential Equations (Honours)
   v. STAT 3059 [0.5] Mathematical Statistics (Honours)
   w. 1.5 credits at the 4000-level or higher in MATH or STAT 1.5

Total Credits 10.0

Statistics (Combined B.Math./M.Sc.)

B.Math. (15.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 8.5 credits in:
   a. MATH 1052 [0.5] Calculus and Introductory Analysis I
   b. MATH 1152 [0.5] Introductory Algebra I
   c. MATH 1800 [0.5] Introduction to Mathematical Reasoning
   d. MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis
   e. MATH 2052 [0.5] Calculus and Introductory Analysis II
   f. MATH 2100 [1.0] Algebra
   g. MATH 2152 [0.5] Introductory Algebra II
   h. MATH 2454 [0.5] Ordinary Differential Equations (Honours)
   i. STAT 1500 [0.5] Introduction to Statistical Computing
   j. STAT 2559 [0.5] Basics of Statistical Modeling (Honours)
   k. STAT 2655 [0.5] Introduction to Probability with Applications (Honours)
   l. MATH 3001 [0.5] Real Analysis I (Honours)
   m. STAT 3506 [0.5] Stochastic Processes and Applications (Honours)
   n. STAT 3553 [0.5] Regression Modeling (Honours)
   o. STAT 3558 [0.5] Elements of Probability Theory (Honours)

Total Credits 15.0

Graduate Portion - M.Sc.

During the graduate portion of the “fast-track” program, the student is registered as a graduate student and is covered by the regulations of the Faculty of Graduate Studies.

5. 1.5 credits at the 5000-level or higher in MATH or STAT 1.5

6. 1.0 credit at the 5000-level or higher in mathematics or statistics from another department or school 1.0

7. Either:
   a. MATH 4905 or STAT 4905 and 1.5 credits in MATH or STAT at the 5000-level or higher
   b. an M.Sc. thesis in Mathematics

Total Credits 4.5

Minor in Mathematics (4.0 credits)

This minor is open to students in all undergraduate programs except programs of the School of Mathematics and Statistics.

Requirements

1. 1.0 credit from:
   a. MATH 1007 [0.5] Elementary Calculus I
   b. MATH 2007 [0.5] Elementary Calculus II
   c. MATH 1004 [0.5] Calculus for Engineering or Physics
   d. MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics

Total Credits 4.5
### Minor in Statistics (4.0 credits)

This minor is open to students in all undergraduate programs except programs of the School of Mathematics and Statistics.

**Requirements:**

1. **0.5 credit from:** *MATH 1004 [0.5] Calculus for Engineering or Physics*  
   *MATH 1007 [0.5] Elementary Calculus I*  
   *MATH 1009 [0.5] Mathematics for Business*  
   *MATH 1052 [0.5] Calculus and Introductory Analysis I*

2. **0.5 credit from:** *MATH 1104 [0.5] Linear Algebra for Engineering or Science*  
   *MATH 1107 [0.5] Linear Algebra I*  
   *MATH 1119 [0.5] Linear Algebra: with Applications to Business*  
   *MATH 1152 [0.5] Introductory Algebra I*

3. **1.0 credit from:** *STAT 2507 [0.5] Introduction to Statistical Modeling I*  
   *STAT 2509 [0.5] Introduction to Statistical Modeling II*

   or

4. **1.5 credits in:** *STAT 3503 [0.5] Regression Analysis*  
   *STAT 3504 [0.5] Analysis of Variance and Experimental Design*  
   *STAT 3507 [0.5] Sampling Methodology*

5. **0.5 credit from:** *BUSI 1402 [0.5] Introduction to Business Information and Communication Technologies (Business students only)*  
   *ECOR 1606 [0.5] Problem Solving and Computers (Engineering students only)*  
   *STAT 1500 [0.5] Introduction to Statistical Computing*

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

### Regulations

In addition to the program requirements described here and academic performance evaluation requirements listed below, students must satisfy the University regulations common to all undergraduate students (see the Academic Regulations section of this Calendar).

Students should consult with the School of Mathematics and Statistics when planning their program and selecting courses.

#### Academic Performance Evaluation for Bachelor of Mathematics

The standard procedures for Academic Performance Evaluation are followed with the following additions:

*Good Standing* at any Academic Performance Evaluation requires that the CGPA over the following courses be at least 7.00 for Honours programs and at least 5.00 for General programs:

- MATH 1007 [0.5] Elementary Calculus I  
- MATH 1004 [0.5] Calculus for Engineering or Physics

**B.Sc. Regulations**

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

#### Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in**
science continuation courses in each of the two majors

2. 2.0 credits in courses outside of the faculties of Science and Engineering Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to begin a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Biochemistry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIQC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIQC 4001 [0.5]</td>
<td>Methods in Biochemistry</td>
</tr>
<tr>
<td>BIQC 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIQC 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIQC 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIQC 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td>BIQC 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td>BIQC 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td>BIQC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIQC 2600 [0.5]</td>
<td>Ecology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemistry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Earth Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
</tr>
<tr>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2404 [0.5]</td>
<td>Engineering Geoscience</td>
</tr>
<tr>
<td>ERTH 2802 [0.5]</td>
<td>Field Geology I</td>
</tr>
<tr>
<td>ERTH 3111 [0.5]</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
</tr>
<tr>
<td>ERTH 3112 [0.5]</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td>ERTH 3204 [0.5]</td>
<td>Mineral Deposits</td>
</tr>
<tr>
<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
</tr>
<tr>
<td>ERTH 3806 [0.5]</td>
<td>Structural Geology</td>
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</table>

<table>
<thead>
<tr>
<th>Food Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD 3001 [0.5]</td>
<td>Food Chemistry</td>
</tr>
<tr>
<td>FOOD 3002 [0.5]</td>
<td>Food Analysis</td>
</tr>
<tr>
<td>FOOD 3005 [0.5]</td>
<td>Food Microbiology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geography</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 1010 [0.5]</td>
<td>Global Environmental Systems</td>
</tr>
<tr>
<td>GEOG 3108 [0.5]</td>
<td>Soil Properties</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neuroscience</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUR 3206 [0.5]</td>
<td>Sensory and Motor Neuroscience</td>
</tr>
<tr>
<td>NEUR 3207 [0.5]</td>
<td>Systems Neuroscience</td>
</tr>
</tbody>
</table>
## Course Categories for B.Sc. Programs

### Science Geography Courses
- **GEOG 1010 [0.5]** Global Environmental Systems
- **GEOG 2006 [0.5]** Introduction to Quantitative Research
- **GEOG 2013 [0.5]** Weather and Water
- **GEOG 2014 [0.5]** The Earth's Surface
- **GEOG 3003 [0.5]** Quantitative Geography
- **GEOG 3010 [0.5]** Field Methods in Physical Geography
- **GEOG 3102 [0.5]** Geomorphology
- **GEOG 3103 [0.5]** Watershed Hydrology
- **GEOG 3104 [0.5]** Principles of Biogeography
- **GEOG 3105 [0.5]** Climate and Atmospheric Change
- **GEOG 3106 [0.5]** Aquatic Science and Management
- **GEOG 3108 [0.5]** Soil Properties
- **GEOG 4000 [0.5]** Field Studies
- **GEOG 4005 [0.5]** Directed Studies in Geography
- **GEOG 4013 [0.5]** Cold Region Hydrology
- **GEOG 4017 [0.5]** Global Biogeochemical Cycles
- **GEOG 4101 [0.5]** Two Million Years of Environmental Change
- **GEOG 4103 [0.5]** Water Resources Engineering
- **GEOG 4104 [0.5]** Microclimatology
- **GEOG 4108 [0.5]** Permafrost

### Science Psychology Courses
- **PSYC 2001 [0.5]** Introduction to Research Methods in Psychology
- **PSYC 2002 [0.5]** Introduction to Statistics in Psychology
- **PSYC 2700 [0.5]** Introduction to Cognitive Psychology
- **PSYC 3000 [1.0]** Design and Analysis in Psychological Research
- **PSYC 3506 [0.5]** Cognitive Development
- **PSYC 3700 [1.0]** Cognition (Honours Seminar)
- **PSYC 3702 [0.5]** Perception
- **PSYC 2307 [0.5]** Human Neuropsychology I
- **PSYC 3307 [0.5]** Human Neuropsychology II

### Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP excluding COMP 1001 may be used as Science Continuation credits.
- ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

### Engineering Electives
Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 2903
- Science Geography Courses (see list above)
- Science Psychology Courses (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

### Science Faculty Electives
Science Faculty Electives are courses at the 1000-4000 level chosen from:

- BIOC (Biochemistry)
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering
- ENSC 2001
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
The following courses are not acceptable for credit in any B.Sc. program:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1001</td>
<td>Introduction to Computational Thinking for Arts and Social Science</td>
<td>Students may use these courses only as free electives.</td>
</tr>
<tr>
<td>MATH 0005</td>
<td>Precalculus: Functions and Graphs</td>
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<tr>
<td>MATH 0006</td>
<td>Precalculus: Trigonometric Functions and Complex Numbers</td>
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<td>Elementary Mathematics for Economics</td>
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</tbody>
</table>

**Advanced Science Faculty Electives**

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

**Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)**

- All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above), NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

**Free Electives**

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

**Courses Allowable Only as Free Electives in any B.Sc. Program**

- BIOL 4810: Education Research in Biology
- CHEM 1003: The Chemistry of Food, Health and Drugs
- CHEM 1004: Drugs and the Human Body
- CHEM 1007: Chemistry of Art and Artifacts
- ERTH 1010: Our Dynamic Planet Earth
- ERTH 1011: Evolution of the Earth
- ERTH 2415: Natural Disasters
- ISCI 1001: Introduction to the Environment
- ISCI 2000: Natural Laws
- ISCI 2002: Human Impacts on the Environment
- MATH 0107: Algebra and Geometry
- PHYS 1901: Planetary Astronomy
- PHYS 1902: From our Star to the Cosmos
- PHYS 1905: Physics Behind Everyday Life
- PHYS 2903: Physics Towards the Future

**Prohibited Courses**

The following courses are not acceptable for credit in any B.Sc. program:

- COMP 1001: Introduction to Computational Thinking for Arts and Social Science
- MATH 0005: Precalculus: Functions and Graphs
- MATH 0006: Precalculus: Trigonometric Functions and Complex Numbers
- MATH 1009: Mathematics for Business
- MATH 1119: Linear Algebra: with Applications to Business
- MATH 1401: Elementary Mathematics for Economics

**Co-operative Education**

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

**Undergraduate Co-operative Education Policy**

**Admission Requirements**

Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

**Employment**

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job.
It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts. While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:
1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student has applied

Students are advised to discuss the application process with their academic department.

Bachelor of Mathematics Honours, Combined B.Math./M.Sc.: Co-op Admission and Continuation Requirements
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to:
Students in any of these programs (excluding Biostatistics) must satisfy the following:

1. Completion of 5.0 or more credits (at least 2.0 in Mathematics/Statistics) at Carleton in any Honours program (excluding Biostatistics), or the Combined B.Math./M.Sc. ("Fast Track") programs, offered by the School of Mathematics and Statistics
2. A major CGPA of 8.00 or higher and an overall CGPA of 6.50 or higher

Students in the B.Math. (Combined Honours) Biostatistics program must satisfy the following:

1. Full-time student in the B.Math. Biostatistics program;
2. An overall CGPA of 8.00 or higher;
3. Successfully completed all required first year courses before beginning the first work term
4. Students must be eligible for third-year standing when they return for a study term after their first work term.

Students in these programs must successfully complete four (4) work terms to obtain the co-op designation.

Co-op Work Term Course: MATH 3999 or STAT 3999

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<tr>
<th>Year 1</th>
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<td>Term</td>
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<td>Summer</td>
<td>O/W</td>
<td>Summer</td>
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</tbody>
</table>

Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree
- Bachelor of Mathematics (B. Math.) (Honours)
- Bachelor of Mathematics (B.Math.)

Admission Requirements

B.Math Honours Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include two prerequisite courses (Advanced Functions and Calculus and Vectors).

The overall admission cut-off average and/or the prerequisite course average may be considerably higher than the stated minimum requirements for admission to the combined B.Math/M.Sc in Mathematics or Statistics.

Advanced Standing
Applications for admission beyond first year will be assessed on their individual merits. Applicants must normally be in Good Standing (see Undergraduate Calendar Section 3.0 - Academic Regulations for Degree Students) for their year level. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

B.Math Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include two prerequisite courses (Advanced Functions and Calculus and Vectors). Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing
Applications for admission beyond first year will be assessed on their individual merits. Applicants must normally be in Good Standing (see Undergraduate Calendar Section 3.0 - Academic Regulations for Degree Students) for their year level. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Mathematics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after
beginning the program are described in the Cooperative Education Regulations section of this Calendar.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degrees**

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

**Admission Requirements**

**B. Sc. Honours Program**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Science or Physics. (Calculus and Vectors is strongly recommended).

**Specific Honours Admission Requirements**

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

**Advanced Standing**

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**B.Sc. Major Program**

**B.Sc. Program**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics. 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**

Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The
prevailing job market may limit enrollment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Mathematics (MATH) Courses

Note:

• See also the course listings under Statistics (STAT) in this Calendar.

Prerequisites for First-year Mathematics Courses in B.Math. Programs

Students who do not have the required Ontario Grade 12 Mathematics courses or equivalents may take MATH 0005 Precalculus: Functions and Graphs and MATH 0006 Precalculus: Trigonometric Functions and Complex Numbers in lieu of Advanced Functions, MATH 1007 Algebra and Geometry in lieu of the algebra component of Calculus and Vectors. These 0000-level mathematics courses serve as alternate prerequisites for MATH 1052 Calculus and Introductory Analysis I and MATH 1152 Introductory Algebra I. These courses would be in addition to the minimum 15.0 credits required for B.Math programs, or 20.0 credits required for B.Math Honours programs.

MATH 0005 [0.5 credit]
Pre-calculus: Functions and Graphs
Review of algebraic manipulations. Polynomials: the remainder theorem, and the factor theorem; graphing. Real and Complex roots. Absolute values. Inequalities. Functions, including composition of functions, and Inverse functions. Logarithmic and exponential functions. Not available for degree credit for students who have successfully completed: Grade 12 Mathematics - Advanced Functions, or an equivalent High School functions course. Prerequisite(s): Grade 11 Functions (University/College Preparation), or equivalent. Lectures three hours a week, tutorial one hour a week.

MATH 0006 [0.5 credit]
Pre-calculus: Trigonometric Functions and Complex Numbers
Angles and the unit circle, radian measure. Definitions of trigonometric functions. Fundamental relations, Law of Sines and Cosines. Analytic trigonometry, graphs, inverse functions. Trigonometric identities and equations. Applications in science and engineering. Complex numbers in polar form, de Moivre's Theorem, n-th roots of complex numbers. Prerequisite(s): Grade 11 Functions (University/College Preparation), or MATH 0005, or equivalent. Lectures three hours a week, tutorial one hour a week.

MATH 0009 [0.5 credit]
Calculus and Vectors
Limits and continuity. Differentiation rules. Trigonometric, logarithmic, and exponential functions, and their derivatives. Curve sketching. Optimization problems. Introduction to vectors. Dot and cross products. Projections. Equations of lines and planes. Intersection points and distances between points, lines, and planes. Precludes additional credit for MATH 0007. Prerequisite(s): Grade 12 Mathematics (Advanced Functions); or both MATH 0005 and MATH 0006; or permission of the School. Lectures three hours a week, tutorial one hour a week.

MATH 0107 [0.5 credit]
Algebra and Geometry
Vectors in the plane and in 3-space. Linear combinations and linear independence. Equations of lines and planes in space. Solution of systems of linear equations. Proofs by induction. Binomial Theorem. Logic. Prerequisite(s): Grade 11 Functions (University/College Preparation) or equivalent. Lectures three hours a week, tutorial one hour a week.

MATH 1004 [0.5 credit]
Calculus for Engineering or Physics
Limits. Differentiation of the elementary functions. Rules of differentiation. Inverse trigonometric functions. Applications of differentiation: max-min problems, curve sketching, approximations. Definite and indefinite integrals, techniques of integration. Applications to areas and volumes. Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1007, MATH 1052. Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005 and MATH 0006, or equivalent. Restricted to students in the Faculty of Engineering, or in certain B.Sc. and B.A.S. programs where specified. Lectures three hours a week, tutorial one hour a week.

MATH 1005 [0.5 credit]
Differential Equations and Infinite Series for Engineering or Physics
First-order differential equations. Second-order linear equations with constant coefficients, undetermined coefficients, variation of parameters. Sequences and series, convergence tests, estimation of sums. Power series, Taylor series, remainders. Fourier series. Precludes additional credit for BIT 2004 (no longer offered), BIT 2007 (no longer offered), MATH 1002 (no longer offered), MATH 2007, MATH 2052, and MATH 2404. Prerequisite(s): i) MATH 1004; and ii) MATH 1104 (or MATH 1107), either previously or concurrently; or equivalents; or permission of the School. Restricted to students in the Faculty of Engineering, or in certain B.Sc. programs where specified. Lectures three hours a week, tutorial one hour a week.
MATH 1007 [0.5 credit]  
**Elementary Calculus I**  
Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1004, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1052.  
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005 and MATH 0006; or equivalent. Lectures three hours a week, tutorial one hour a week.

MATH 1009 [0.5 credit]  
**Mathematics for Business**  
An introductory course of mathematics for business.  
Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, BUSI 1705 (no longer offered), MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1052. This course is not acceptable for (substitute) credit in any of the following degree programs: B.Math., and also B.Sc., B.C.S., B.Eng., B.I.D.  
Prerequisite(s): Restricted to B.Com. and B.I.B students. Lectures three hours a week and tutorial one hour a week.

MATH 1052 [0.5 credit]  
**Calculus and Introductory Analysis I**  
Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1004, MATH 1007, MATH 1009, MATH 1401/ECON 1401, MATH 1402/ECON 1402.  
Prerequisite(s): i) Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005 and MATH 0006 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.  
Lectures three hours a week, tutorial one and one half hours a week.

MATH 1104 [0.5 credit]  
**Linear Algebra for Engineering or Science**  
Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1107, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. Note: MATH 1119 is not an acceptable substitute for MATH 1104.  
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. Restricted to students in the Faculty of Engineering, the School of Computer Science, or in certain B.Sc. and B.A.S. programs where specified. Lectures three hours a week and tutorial one hour a week.

MATH 1107 [0.5 credit]  
**Linear Algebra I**  
Systems of linear equations; vector space of $n$-tuples, subspaces, bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product. Complex numbers (including de Moivre's Theorem, and $n$-th roots). Eigenvalues, diagonalization and applications.  
Note: MATH 1119 is not an acceptable substitute for MATH 1107.  
Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. Note: MATH 1119 is not an acceptable substitute for MATH 1107.  
Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. This course is not acceptable for (substitute) credit in any of the following degree programs: B.Math., and also B.Sc., B.C.S., B.Eng., B.I.D.  
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. Lectures three hours a week and tutorial one hour a week.

MATH 1119 [0.5 credit]  
**Linear Algebra: with Applications to Business**  
Introduction to systems of linear equations, geometric interpretation in two and three dimensions, introduction to matrices, vector addition and scalar multiplication, linear dependence, matrix operations, rank, inversion, invertible matrix theorem, determinants. Use of illustrative examples related to business.  
Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. This course is not acceptable for (substitute) credit in any of the following degree programs: B.Math., and also B.Sc., B.C.S., B.Eng., B.I.D.  
Prerequisite(s): Ontario Grade 12 Mathematics of Data Management; or Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. Lectures three hours a week, tutorial one hour a week.
MATH 1152 [0.5 credit]
Introductory Algebra I
Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C-
C-
Prerequisite(s): MATH 1009, MATH 1052, MATH 1104, MATH 1107, BIT 1100, BIT 1101, BIT 1200, BIT 1201; MATH 1007, Also listed as ECON 1402.

MATH 1402 [0.5 credit]
Elementary Mathematics for Economics I
Prerequisite(s): i) Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005, MATH 0006, and MATH 0107 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.
Lectures three hours a week, tutorial one and a half hours a week.

MATH 1401 [0.5 credit]
Elementary Mathematics for Economics I
Prerequisite(s): i) Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005, MATH 0006, and MATH 0107 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.
Lectures three hours a week, tutorial one hour a week.

MATH 1800 [0.5 credit]
Introduction to Mathematical Reasoning
Elementary logic, propositional and predicate calculus, quantifiers, sets and functions, bijections and elementary counting, the concept of infinity, relations, well ordering and induction. The practice of mathematical proof in elementary number theory and combinatorics. Precludes additional credit for MATH 1805/COMP 1805.
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent.
Lectures three hours a week, tutorial one hour a week.

MATH 1805 [0.5 credit]
Discrete Structures I
Introduction to discrete mathematics and discrete structures. Topics include: propositional logic, predicate calculus, set theory, complexity of algorithms, mathematical reasoning and proof techniques, recurrences, induction, finite automata and graph theory. Material is illustrated through examples from computing. Includes: Experiential Learning Activity
Prerequisite(s): one Grade 12 university preparation Mathematics course; and one of: COMP 1005 or COMP 1405 or SYSC 1100 (which may be taken concurrently).
Lectures three hours a week, tutorial one hour a week.

MATH 2000 [1.0 credit]
Multivariable Calculus and Fundamentals of Analysis
Higher dimensional calculus, chain rule, gradient, line and multiple integrals with applications. Use of implicit and inverse function theorems. Real number axioms, limits, continuous functions, differentiability, infinite series, uniform convergence, the Riemann integral.
Precludes additional credit for BIT 2005 (no longer offered), MATH 2004, MATH 2008, and MATH 3009.
Prerequisite(s): i) MATH 2052 with a grade of B+ or higher, or (MATH 2007 or MATH 1005 with a grade of B+ or higher and permission of the School); and ii) MATH 2152 with a grade of C+ or higher, or MATH 1107 or MATH 1104 with a grade of B+ or higher; and iii) MATH 1800 with a grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 2004 [0.5 credit]
Multivariable Calculus for Engineering or Physics
Green’s Theorem, Stokes’ theorem, Divergence Theorem. Applications.
Prerequisite(s): i) MATH 1005 or MATH 2007; and ii) MATH 1104 or MATH 1107; or permission of the School. Restricted to students in the Faculty of Engineering, or in certain B.Sc. programs where specified.
Lectures three hours a week, tutorial one hour a week.
MATH 2007 [0.5 credit]
Elementary Calculus II
Precludes additional credit for BIT 2007 (no longer offered), MATH 1002 (no longer offered), MATH 1005, MATH 2052.
Prerequisite(s): i) MATH 1004, or a grade of C- or higher in MATH 1007; or ii) MATH 1052 and permission of the School. Lectures three hours a week, tutorial one hour a week.

MATH 2008 [0.5 credit]
Intermediate Calculus
Partial differentiation, chain rule, gradient, line and multiple integrals with applications, transformations of multiple integrals.
Precludes additional credit for BIT 2005 (no longer offered), MATH 2000, and MATH 2004.
Prerequisite(s): one of MATH 1005, MATH 2052, or MATH 2007, and one of MATH 1104, MATH 1107, or MATH 1152. Lectures three hours a week and one hour tutorial.

MATH 2052 [0.5 credit]
Calculus and Introductory Analysis II
Precludes additional credit for BIT 2007, MATH 1002 (no longer offered), MATH 1005, MATH 2007.
Prerequisite(s): (i) MATH1052 with a grade of C- or higher or (MATH1007 or MATH1004 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School. Lectures three hours a week, tutorial one and one half hours a week.

MATH 2100 [1.0 credit]
Algebra
Introduction to group theory; permutation groups, Lagrange's theorem, normal subgroups, homomorphism theorems. Introduction to ring theory: ring of polynomials, integral domains, ideals, homomorphism theorems. Hermitian forms, spectral theorem for normal operators, bilinear and quadratic forms, classical groups.
Precludes additional credit for MATH 2108 and MATH 3101.
Prerequisite(s): i) MATH 2152 with a grade of C+ or higher, or (MATH 2107 with a grade of B+ or higher and permission of the School); and ii) MATH 1800 with a grade of C+ or higher; or permission of the School. Lectures three hours a week, tutorial one hour a week.

MATH 2107 [0.5 credit]
Linear Algebra II
Precludes additional credit for MATH 1102 (no longer offered), MATH 2152.
Prerequisite(s): i) MATH 1104, or a grade of C- or higher in MATH 1107 or MATH 1109; and ii) a grade of C- or higher in MATH 1007 or equivalent; or MATH 1152 and permission of the School. Note: in item i), MATH 1119 is NOT acceptable as a substitute for MATH 1109. Lectures three hours a week and one hour tutorial.

MATH 2108 [0.5 credit]
Abstract Algebra I
Sets and relations, number theory, group theory, ring theory, cardinal numbers.
Precludes additional credit for MATH 3101 and MATH 2100.
Prerequisite(s): i) MATH 2152 or MATH 2107; and ii) MATH 1800 (MATH 1800 may be taken concurrently, with permission of the School); or COMP 1805; or permission of the School. Lectures three hours a week and one hour tutorial.

MATH 2152 [0.5 credit]
Introductory Algebra II
Linear transformations. Determinants. Eigenvalues and eigenspaces. Diagonalization and other canonical forms. Inner products. An emphasis is placed on proofs and theory.
Precludes additional credit for MATH 1102 (no longer offered) and MATH 2107.
Prerequisite(s): i) MATH1152 with a grade of C- or higher or (MATH1107 or MATH1104 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School. Lectures three hours a week, tutorial one and a half hours a week.

MATH 2210 [0.5 credit]
Introduction to Geometry
An introduction to classical geometry; Euclidean plane geometry; plane tiling; polytopes in three and four dimensions; curved surfaces; Euler characteristic. This course is intended for a general audience, and is available to B.Math. students for credit only as a free elective.
Prerequisite(s): Grade 12 Mathematics and second-year standing. Lectures three hours a week, tutorial one hour a week.
MATH 2404 [0.5 credit]
Ordinary Differential Equations I
First-order equations, linear second- and higher-order equations, linear systems, stability of second-order systems.
Precludes additional credit for BIT 2004 (no longer offered), MATH 1005, MATH 2454.
Prerequisite(s): MATH 2052 and MATH 1152 (or MATH 1107 and MATH 2007).
Lectures three hours a week and one hour tutorial.

MATH 2454 [0.5 credit]
Ordinary Differential Equations (Honours)
Existence and uniqueness theorems. First-order equations, linear second- and higher-order equations, linear systems, stability of second-order systems.
Precludes additional credit for MATH 2404, BIT 2004 (no longer offered).
Prerequisite(s): MATH 2052 or MATH 2007 or MATH 1005 with a grade of C+ or higher, and MATH 2152 or MATH 2107 with a grade of C+ or higher.
Lectures three hours a week, tutorial one hour a week.

MATH 2800 [0.5 credit]
Discrete Mathematics and Algorithms
An introduction to discrete mathematics and algorithms in the context of the computational sciences. Basic number theory and counting methods, algorithms for strings, trees and sequences. Applications to DNA and protein sequencing problems. Analysis and complexity of algorithms. Also listed as CMPS 2800.
Precludes additional credit for Only one of MATH 1805/COMP 1805 or MATH 2800/CMPS 2800 may count for credit in a B.Math. program.
Prerequisite(s): COMP 1006 and at least one of MATH 1007, MATH 1107, or STAT 2507.
Lectures three hours a week.

MATH 2907 [0.5 credit]
Directed Studies (Honours)
Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 3001 [0.5 credit]
Real Analysis I (Honours)
Metric spaces and their topologies, continuous maps, completeness, compactness, connectedness, introduction to Banach spaces.
Prerequisite(s): MATH 2000 with a grade of C- or higher; or (MATH 3009 and MATH 1800) each with a grade of B or higher, and permission of the instructor; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3002 [0.5 credit]
Real Analysis II (Honours)
Function spaces, pointwise and uniform convergence, Weierstrass approximation theorem, Lebesgue measure and Lebesgue integral on the real line, Hilbert space, Fourier series.
Prerequisite(s): MATH 3001 with a grade of C- or higher, or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3003 [0.5 credit]
Advanced Differential Calculus (Honours)
Prerequisite(s): MATH 3001 with a grade of C- or higher, or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3007 [0.5 credit]
Functions of a Complex Variable
Analytic functions, contour integration, residue calculus, conformal mapping. Intended for non-engineering students.
Precludes additional credit for MATH 3057 and PHYS 3807.
Prerequisite(s): one of MATH 2004, MATH 2008 or MATH 2009, or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3008 [0.5 credit]
Ordinary Differential Equations (Honours)
Precludes additional credit for MATH 3404 and PHYS 3808.
Prerequisite(s): i) MATH 2000 with a grade of C- or higher, or (MATH 3009 with a grade of B or higher, and permission of the instructor); and ii) MATH 2454 with a grade of C- or higher, or (MATH 2404 with a grade of B or higher, and permission of the instructor).
Lectures three hours a week and one hour tutorial.

MATH 3009 [0.5 credit]
Introductory Analysis
The real number system, sequences and series, functions of a single real variable, derivatives, the definite integral, uniform convergence.
Precludes additional credit for MATH 2000.
Prerequisite(s): one of MATH 2004, MATH 2008, MATH 2009, or permission of the School.
Lectures three hours a week and one hour tutorial.
MATH 3057 [0.5 credit]
Functions of a Complex Variable (Honours)
Analytic functions, contour integration, residue calculus, conformal mappings.
Precludes additional credit for MATH 3007 and PHYS 3807.
Prerequisite(s): MATH 2000 with a grade of C- or higher; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3011 [0.5 credit]
Algebraic Structures with Computer Applications
Introduction to algebraic structures: groups, rings, fields, lattices, and Boolean algebras; with applications of interest to students in Computer Science. This course may not be used to meet the 3000-level course requirements in any B.Math or B.Math Honours program in Mathematics and Statistics.
Precludes additional credit for MATH 2108 and MATH 2100.
Prerequisite(s): i) MATH 2107 or MATH 2152; and ii) either COMP 1805 or MATH 1800 (MATH 1800 may be taken concurrently, with permission of the School); or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3066 [0.5 credit]
Introduction to Group Theory (Honours)
Homomorphism theorems; groups acting on sets; permutation groups and groups of matrices; Sylow theory for finite groups; finitely generated abelian groups; generators and relations; applications.
Precludes additional credit for MATH 2108 and MATH 3108.
Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B or higher and MATH 1800 with a grade of B or higher and permission of the instructor); or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3076 [0.5 credit]
Linear Algebra III
Prerequisite(s): i) a grade of C- or higher in MATH 2152 or MATH 2107; and ii) credit in MATH 2052 or MATH 2007; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3086 [0.5 credit]
Abstract Algebra II
Precludes additional credit for MATH 3016 and MATH 3158.
Prerequisite(s): MATH 2108, or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3156 [0.5 credit]
Plane Projective Geometry
Axioms of Desarguesian geometry, principle of duality; projectivities, perspectivities, and the fundamental theorem; collineations (homologies and elations); correlations (polarities and conics); algebraic model; projective curves; introduction to finite projective planes.
Precludes additional credit for MATH 3256.
Prerequisite(s): MATH 2100 or MATH 2108 or MATH 3101.
Lectures three hours a week, tutorial one hour a week.

MATH 3166 [0.5 credit]
Euclidean and Non-Euclidean Geometry
Euclidean isometry and similarity groups; geometry of circles; inversion; hyperbolic geometry: Poincare disk model of the hyperbolic plane.
Precludes additional credit for MATH 3205.
Prerequisite(s): MATH 2100 or MATH 2108 or MATH 3101.
Lectures three hours a week and one hour tutorial.

MATH 3176 [0.5 credit]
Elements of Set Theory (Honours)
Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B or higher; and MATH 1800 with a grade of B or higher; and permission of the instructor); or permission of the School.
Lectures three hours a week and one hour tutorial.
MATH 3355 [0.5 credit]
Number Theory and Applications (Honours)
Congruences, distribution of primes, arithmetic functions, primitive roots, quadratic residues, quadratic reciprocity law, continued fractions, Diophantine equations, and applications: public key cryptography, primality testing and factoring in relation to cryptography.
Precludes additional credit for MATH 3809.
Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B- or higher; and permission of the instructor); or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3404 [0.5 credit]
Ordinary Differential Equations II
Precludes additional credit for MATH 3008.
Prerequisite(s): MATH 2404, MATH 2008; and MATH 2152 or MATH 2107.
Lectures three hours a week and one hour tutorial.

MATH 3705 [0.5 credit]
Mathematical Methods I
Precludes additional credit for PHYS 3808. This course may be taken for credit as a 3000-level Honours Mathematics course by students in any Honours program in the School of Mathematics and Statistics.
Prerequisite(s): i) MATH 1005 or MATH 2404, and ii) MATH 2004 or MATH 2008 or MATH 2009; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3800 [0.5 credit]
Mathematical Modeling and Computational Methods
Includes: Experiential Learning Activity
Also listed as CMPS 3800.
Precludes additional credit for MATH 3806/COMP 3806.
Prerequisite(s): i) MATH 1105 or MATH 1104; ii) MATH 1005 or MATH 2007; and iii) knowledge of a computer language.
Lectures three hours a week, laboratory one hour a week.

MATH 3801 [0.5 credit]
Linear Programming
Systems of linear inequalities, formulation of linear programming problems, geometric method, the simplex method, duality theory, complementary slackness, sensitivity analysis, branch-and-bound method and cutting plane method for integer linear programming, applications and extensions.
Precludes additional credit for ECON 4004, SYSC 3200.
Prerequisite(s): MATH 2152 or MATH 2107, or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3802 [0.5 credit]
Combinatorial Optimization
Prerequisite(s): MATH 3801 or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3804 [0.5 credit]
Design and Analysis of Algorithms I
An introduction to the design and analysis of algorithms. Topics include: recurrence relations, sorting and searching, divide-and-conquer, dynamic programming, greedy algorithms, NP-completeness.
Also listed as COMP 3804.
Prerequisite(s): i) one of COMP 2402 or SYSC 2100; and ii) one of COMP 2804 or MATH 3855 or MATH 3825 or COMP 3805.
Lectures three hours a week.

MATH 3806 [0.5 credit]
Numerical Analysis (Honours)
Elementary discussion of error, polynomial interpolation, quadrature, linear systems of equations and matrix inversion, non-linear equations, difference equations and ordinary differential equations. Implementation of numerical methods using a computer language.
Includes: Experiential Learning Activity
Precludes additional credit for MATH 3800.
Prerequisite(s): i) MATH 2000 with a grade of C- or higher; and ii) MATH 1152 with a grade of C- or higher, or (MATH 1107 or MATH 1104 with a grade of B or higher and permission of the instructor).
Lectures three hours a week, laboratory one hour a week.
MATH 3807 [0.5 credit]
**Mathematical Software (Honours)**
Implementation of numerical methods using numerical software packages. Development of scientific and/or operations research applications using application programming interfaces of numerical or optimization libraries. Functional programming for data analysis and machine learning. Experience working with Python, C++, or Java is essential.
Includes: Experiential Learning Activity
Also listed as COMP 3807.
Prerequisite(s): A grade of C- or higher in MATH 3806 or COMP 3806.
Lectures three hours a week, laboratory one hour a week.

MATH 3808 [0.5 credit]
**Mathematical Analyses of Games of Chance**
This course covers mathematics used in the modern casino gaming industry. The topics include probabilities, odds, house advantages, variance and risks, optimal strategies, random walks and gambler's ruin, and gaming revenue estimation. Examples are taken from various games such as Roulette, Blackjack, and Poker.
Prerequisite(s): one of STAT 2655, STAT 2605, STAT 2507, STAT 2606, STAT 3502, or MATH 3825 or MATH 3855.
Lectures three hours a week, tutorial one hour a week.

MATH 3809 [0.5 credit]
**Introduction to Number Theory and Cryptography**
Congruences, distribution of primes, general cryptographic systems, public key cryptographic systems and authentification using number theory, primality testing and factoring in relation to cryptography, continued fractions and Diophantine equations.
Prerequisite(s): MATH 2108 or MATH 3101 or MATH 2100; knowledge of a computer language.
Lectures three hours a week and one hour tutorial.

MATH 3819 [0.5 credit]
**Modern Computer Algebra**
Algorithms for multiplication, division, greatest common divisors and factorization over the integers, finite fields and polynomial rings. Basic tools include modular arithmetic, discrete Fourier transform, Chinese remainder theorem, Newton iteration, and Hensel techniques. Some properties of finite fields and applications to cryptography.
Includes: Experiential Learning Activity
Prerequisite(s): MATH 2108 or MATH 3101 or MATH 2100, COMP 1005 or equivalent; or permission of the School.
Lectures three hours a week, tutorial/laboratory one hour a week.

MATH 3825 [0.5 credit]
**Discrete Structures and Applications**
Enumeration: elementary methods, inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory and algorithms: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes.
Precludes additional credit for MATH 3805 (no longer offered), and MATH 3855 and COMP 3805.
Prerequisite(s): MATH 2108 or MATH 3101.
Lectures three hours a week, tutorial one hour a week.

MATH 3855 [0.5 credit]
**Discrete Structures and Applications (Honours)**
Also listed as COMP 3805.
Precludes additional credit for MATH 3805 (no longer offered) and MATH 3825.
Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101) with a grade of B or higher.
Lectures three hours a week, tutorial one hour a week.

MATH 3907 [0.5 credit]
**Directed Studies**
Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 3999 [0.0 credit]
**Co-operative Work Term Report (Honours)**
On completion of each work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, and permission of the School.

MATH 4002 [0.5 credit]
**Fourier Analysis (Honours)**
Fourier series, Fourier integrals; introduction to harmonic analysis on locally compact abelian groups, Plancherel Theorem, Pontryagin duality; selected applications.
Prerequisite(s): MATH 3001 or permission of the School.
Lectures three hours a week.
MATH 4003 [0.5 credit]
Functional Analysis (Honours)
Banach spaces and bounded linear operators, Hahn-Banach extension and separation, dual spaces, bounded inverse theorems, uniform boundedness principle, applications. Compact operators.
Prerequisite(s): MATH 4007 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5008, for which additional credit is precluded.
Lectures three hours a week.

MATH 4007 [0.5 credit]
Measure and Integration Theory (Honours)
Lebesgue measure and integration on the real line; sigma algebras and measures; integration theory; Lp spaces; Fubini's theorem; decomposition theorems and Radon-Nikodym derivatives.
Prerequisite(s): MATH 3001 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5007, for which additional credit is precluded.
Lectures three hours a week.

MATH 4102 [0.5 credit]
Group Representations and Applications (Honours)
An introduction to the group representations and character theory, with selected applications.
Prerequisite(s): MATH 3106, or a grade of B or higher in MATH 3108. Also offered at the graduate level, with different requirements, as MATH 5102, for which additional credit is precluded.
Lectures three hours a week.

MATH 4105 [0.5 credit]
Rings and Modules (Honours)
Fundamental concepts in rings and modules, structure theorems, applications.
Prerequisite(s): MATH 3158 or permission of the School. Lectures three hours a week.

MATH 4106 [0.5 credit]
Group Theory (Honours)
Fundamental principles as applied to abelian, nilpotent, solvable, free and finite groups; representations.
Prerequisite(s): MATH 3106 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5106, for which additional credit is precluded.
Lectures three hours a week.

MATH 4107 [0.5 credit]
Commutative Algebra (Honours)
Fields, including algebraic and transcendental extensions, Galois theory, valuation theory; Noetherian commutative rings, including Noether decomposition theorem and localization.
Prerequisite(s): MATH 3158 or permission of the School. Lectures three hours a week.

MATH 4108 [0.5 credit]
Homological Algebra and Category Theory (Honours)
Axioms of set theory; categories, functors, natural transformations; free, projective, injective and flat modules; tensor products and homology functors, derived functors; dimension theory.
Prerequisite(s): MATH 3158 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5108, for which additional credit is precluded.
Lectures three hours a week.

MATH 4109 [0.5 credit]
Fields and Coding Theory (Honours)
Introduction to field theory, emphasizing the structure of finite fields, primitive elements and irreducible polynomials. The influence of computational problems will be considered. Theory and applications of error-correcting codes: algebraic codes, convolution codes, decoding algorithms, and analysis of code performance.
Prerequisite(s): MATH 2100, or MATH 3101 or MATH 2108 or equivalent; or permission of the School. Lectures three hours a week.

MATH 4205 [0.5 credit]
Introduction to General Topology (Honours)
Topological spaces, maps, subspaces, product and identification topologies, separation axioms, compactness, connectedness.
Prerequisite(s): MATH 3001 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5205, for which additional credit is precluded.
Lectures three hours a week.

MATH 4206 [0.5 credit]
Introduction to Algebraic Topology (Honours)
An introduction to homotopy theory. Topics include the fundamental group, covering spaces and the classification of two-dimensional manifolds.
Prerequisite(s): MATH 3106 and MATH 4205; or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5206, for which additional credit is precluded.
Lectures three hours a week.

MATH 4207 [0.5 credit]
Foundations of Geometry (Honours)
A study of at least one modern axiom system of Euclidean and non-Euclidean geometry, embedding of hyperbolic and Euclidean geometries in the projective plane, groups of motions, models of non-Euclidean geometry.
Prerequisite(s): MATH 3106 (may be taken concurrently) or permission of the School. Lectures three hours a week.
MATH 4208 [0.5 credit]
**Introduction to Differentiable Manifolds (Honours)**
Introduction to differentiable manifolds; Riemannian manifolds; vector fields and parallel transport; geodesics; differential forms on a manifold; covariant derivative; Betti numbers.
Prerequisite(s): MATH 3002 or permission of the School.
Lectures three hours a week.

MATH 4305 [0.5 credit]
**Analytic Number Theory (Honours)**
Dirichlet series, characters, Zeta-functions, prime number theorem, Dirichlet's theorem on primes in arithmetic progressions, binary quadratic forms.
Prerequisite(s): MATH 3057 or permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5305, for which additional credit is precluded.
Lectures three hours a week.

MATH 4306 [0.5 credit]
**Algebraic Number Theory (Honours)**
Algebraic number fields, bases, algebraic integers, integral bases, arithmetic in algebraic number fields, ideal theory, class number.
Prerequisite(s): MATH 3158 (may be taken concurrently) or permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5306, for which additional credit is precluded.
Lectures three hours a week.

MATH 4600 [0.5 credit]
**Case Studies in Operations Research (Honours)**
Applications of the principles of Operations Research to practical problems in business, management, and science. Students present at least one case and analyze cases in the published literature. Cases may also be presented by visiting practitioners.
Includes: Experiential Learning Activity
Precludes additional credit for Students in Honours Mathematics/Statistics programs may only take course as a free option.
Prerequisite(s): STAT 2509 (or STAT 2559) and MATH 3801; or permission of the School.
Seminars three hours a week.

MATH 4700 [0.5 credit]
**Partial Differential Equations (Honours)**
First-order partial differential equations. Classification of second-order linear partial differential equations; the diffusion equation, wave equation and Laplace's equation; separation of variables; Fourier and Laplace transform methods for the solution of initial/boundary value problems; Green's functions.
Prerequisite(s): MATH 3057 and one of MATH 3008 or MATH 3705, or permission of the School.
Lectures three hours a week.

MATH 4701 [0.5 credit]
**Topics in Differential Equations (Honours)**
Topics in the theory and application of differential equations; for example, hyperbolic systems, fluid dynamics, nonlinear wave equations, optimal mass transport, control theory, calculus of variations.
Prerequisite(s): i) MATH 3008; and ii) one of MATH 3001 or MATH 3057; or permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5407, for which additional credit is precluded.
Lectures three hours a week.

MATH 4703 [0.5 credit]
**Dynamical Systems (Honours)**
Prerequisite(s): MATH 3001 and MATH 3008 or permission of the School.
Lectures three hours a week.

MATH 4708 [0.5 credit]
**Asymptotic Methods of Applied Mathematics (Honours)**
Prerequisite(s): MATH 3057 and at least one of MATH 3008 or MATH 3705, or permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5408, for which additional credit is precluded.
Lectures three hours a week.

MATH 4801 [0.5 credit]
**Topics in Combinatorics (Honours)**
An in-depth study of one or more topics from: generating functions, Polya's theory of counting, block designs, coding theory, partially ordered sets and Ramsey theory.
Prerequisite(s): MATH 2100 and MATH 3855 or permission of the School.
Seminars three hours a week.

MATH 4802 [0.5 credit]
**Introduction to Mathematical Logic (Honours)**
Symbolic logic, propositional and predicate calculi, set theory and model theory, completeness.
Prerequisite(s): MATH 2100 or permission of the School.
Lectures three hours a week.
MATH 4803 [0.5 credit]  
Computable Functions (Honours)  
Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic, NP-completeness.  
Also listed as COMP 4803.  
Prerequisite(s): MATH 2100 or MATH 3855 or permission of the School.  
Lectures three hours a week.

MATH 4805 [0.5 credit]  
Theory of Automata (Honours)  
Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems.  
Also listed as COMP 4805.  
Prerequisite(s): MATH 3106 or MATH 3158 or MATH 3855 or permission of the School.  
Also offered at the graduate level, with different requirements, as MATH 5605, for which additional credit is precluded.  
Lectures three hours a week.

MATH 4806 [0.5 credit]  
Numerical Linear Algebra (Honours)  
Also listed as COMP 4806.  
Prerequisite(s): MATH 2152 or MATH 2107; MATH 2000 and MATH 3806; or permission of the School.  
Lectures three hours a week.

MATH 4807 [0.5 credit]  
Game Theory (Honours)  
One-player games, two-player zero-sum games, multi-player games, games in normal form, games in extensive form, utility theory, Nash equilibrium and Nash arbitration scheme, games in characteristic function form, cooperative solutions, dominations, stable sets, core, Shapley value, applications of game theory.  
Prerequisite(s): MATH 3801 or permission of the School.  
Also offered at the graduate level, with different requirements, as MATH 5607, for which additional credit is precluded.  
Lectures three hours a week.

MATH 4808 [0.5 credit]  
Graph Theory and Algorithms (Honours)  
Paths, circuits, Eulerian and Hamiltonian graphs, connectivity, colouring problems, matching, Ramsey theory, network flows.  
Prerequisite(s): MATH 3106 or MATH 3158 or MATH 3855 or permission of the School.  
Lectures three hours a week.

MATH 4809 [0.5 credit]  
Mathematical Cryptography (Honours)  
Topics covered include: a general survey of public key cryptography; classical applications of finite fields and number theory; relevant background in geometry and algebraic curves; computational issues concerning elliptic curves; elliptic curve cryptosystems; security issues.  
Prerequisite(s): MATH 3158, or permission of the School.  
Lectures three hours a week.

MATH 4811 [0.5 credit]  
Combinatorial Design Theory (Honours)  
Existence and construction of combinatorial designs: finite geometries, pairwise balanced designs, balanced incomplete block designs, Steiner triple systems, symmetric designs, PBD closure, latin squares, transversal designs, and applications to information theory.  
Prerequisite(s): MATH 3855, or permission of the School.  
Lectures three hours a week.

MATH 4816 [0.5 credit]  
Numerical Analysis for Differential Equations (Honours)  
Floating point arithmetic; numerical solution of ODEs; finite difference methods for PDEs; stability, accuracy and convergence: von Neumann analysis, CFL condition, Lax Theorem. Finite element methods: boundary value problems and elliptic PDEs. Spectral and pseudo-spectral methods.  
Prerequisite(s): MATH 2454 and MATH 3806, or permission of the School.  
Also offered at the graduate level, with different requirements, as MATH 5806, for which additional credit is precluded.  
Lectures three hours a week.

MATH 4821 [0.5 credit]  
Quantum Computing (Honours)  
Prerequisite(s): MATH 2152 (or MATH 2107) with a grade of C+ or better, and permission of the School.  
Also offered at the graduate level, with different requirements, as MATH 5821, for which additional credit is precluded.  
Lectures three hours a week.
MATH 4822 [0.5 credit]
Wavelets and Digital Signal Processing (Honours)
Prerequisite(s): MATH 2152 (or MATH 2107) with a grade of C+ or better, and permission of the School. Also offered at the graduate level, with different requirements, as MATH 5822, for which additional credit is precluded. Lectures three hours a week.

MATH 4905 [0.5 credit]
Honours Project (Honours)
Consists of a written report on some approved topic or topics in the field of mathematics, together with a short lecture on the report. Includes: Experiential Learning Activity
Prerequisite(s): B.Math.(Honours) students only.

MATH 4907 [0.5 credit]
Directed Studies (Honours)
Prerequisite(s): B.Math.(Honours) students only.

Statistics (STAT) Courses

STAT 1500 [0.5 credit]
Introduction to Statistical Computing
Basics of programming in R and introduction to statistical software; generating statistical plots; computing descriptive statistics; performing basic statistical procedures; fundamentals of numerical analysis; optimization; generating random numbers, performing simple simulations and simulation-based inference. Includes: Experiential Learning Activity
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent. Lectures three hours a week, tutorial one hour a week.

STAT 2507 [0.5 credit]
Introduction to Statistical Modeling I
A data-driven introduction to statistics. Basic descriptive statistics, introduction to probability theory, random variables, discrete and continuous distributions, contingency tables, sampling distributions, distribution of sample mean, Central Limit Theorem, interval estimation and hypothesis testing. A statistical software package will be used. Includes: Experiential Learning Activity
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2606, and STAT 3502. May not be counted for credit in any program if taken after successful completion of STAT 2559. Prerequisite(s): an Ontario Grade 12 university-preparation Mathematics or equivalent, or permission of the School of Mathematics and Statistics. Lectures three hours a week, laboratory one hour a week.

STAT 2509 [0.5 credit]
Introduction to Statistical Modeling II
A data-driven approach to statistical modeling. Basics of experimental design, analysis of variance, simple linear regression and correlation, nonparametric procedures. A statistical software package will be used. Includes: Experiential Learning Activity
Precludes additional credit for STAT 2607, ECON 2202, ECON 2220. Prerequisite(s): STAT 2507 or STAT 2606 or STAT 3502; or permission of the School. Lectures three hours a week, laboratory one hour a week.

STAT 2559 [0.5 credit]
Basics of Statistical Modeling (Honours)
Estimation and hypothesis testing for one and two samples, analysis of categorical data, basics of experimental design, analysis of variance, simple linear regression and correlation. Nonparametric procedures. A statistical software package will be used. Includes: Experiential Learning Activity
Prerequisite(s): STAT 2655 or permission of the School. Lectures three hours a week, tutorial/laboratory one hour a week.

STAT 2605 [0.5 credit]
Probability Models
Basic probability; discrete random variables with focus on binomial and Poisson random variables; continuous random variables, transformation theorem, simulating continuous random variables; exponential random variable, normal random variable, sums of random variables, central limit theorem. Elements of Markov chains, and introduction to Poisson processes. Precludes additional credit for STAT 2655 and STAT 3502. Prerequisite(s): MATH 1007 or MATH 1004 or MATH 1002 (no longer offered) or MATH 1052, and MATH 1104 or MATH 1107 or MATH 1102 (no longer offered) or MATH 1152. Restricted to students in Bachelor of Computer Science and Bachelor of Mathematics in Computer Mathematics. Lectures three hours a week, tutorial one hour a week.

STAT 2606 [0.5 credit]
Business Statistics
Introduction to statistical computing; probability concepts; descriptive statistics; estimation and testing of hypotheses. Emphasis on the development of an ability to interpret results of statistical analyses with applications from business. Includes: Experiential Learning Activity
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, and STAT 3502. Prerequisite(s): MATH 1009. Restricted to B.Com. and B.I.B students. Lectures three hours a week and laboratory one hour a week.
STAT 2607 [0.5 credit]
Business Statistics II
Topics include: experimental design, multiple regression and correlation analysis, covariance analysis, and introductory time series. Use of computer packages. Restricted to students in the School of Business. Includes: Experiential Learning Activity
Precludes additional credit for STAT 2509, ECON 2202, ECON 2220.
Prerequisite(s): STAT 2606.
Lectures three hours a week and one hour laboratory.

STAT 2655 [0.5 credit]
Introduction to Probability with Applications (Honours)
Probability axioms, basic combinatorial analysis, conditional probability and independence, discrete and continuous random variables, joint and conditional distributions, expectation and moments, probability and moment generating functions, Chebyshev's inequality and weak law of large numbers, central limit theorem, sampling distributions, simulation and applications to descriptive statistics.
Precludes additional credit for STAT 2605.
Prerequisite(s): MATH 2052 with a grade of C+ or higher or MATH 2007 or MATH 1005 with a grade of B+ or higher; and one of MATH 2152 with a grade of C+ or higher or MATH 2107 with a grade of B+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 2660 [0.5 credit]
Mathematics for Finance (Honours)
Interest rates, growth of money, discount functions, yield rates, time value of money, annuities, cash flows and portfolios, loans, mortgages, bonds, immunization, swaps, hedging and investment strategies, stocks and financial markets, arbitrage.
Prerequisite(s): i) one of MATH 2052 or MATH 2007 or MATH 1005, grade of C+ or higher; and ii) one of MATH 2152 or MATH 2107 or MATH 1104, grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 2907 [0.5 credit]
Directed Studies (Honours)
Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

STAT 3502 [0.5 credit]
Probability and Statistics
Axioms of probability; conditional probability and independence; random variables; distributions: binomial, Poisson, hypergeometric, normal, gamma; central limit theorem; sampling distributions; point estimation: maximum likelihood, method of moments; confidence intervals; testing of hypotheses: one and two populations; engineering applications: acceptance sampling, control charts, reliability.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, STAT 2507, STAT 2605, and STAT 2606.
Prerequisite(s): MATH 2004 and enrolment in the Faculty of Engineering or B.Sc. programs of the Department of Physics [except Double Honours Mathematics and Physics].
Lectures three hours a week and one hour laboratory.

STAT 3503 [0.5 credit]
Regression Analysis
Review of simple and multiple regression with matrices, Gauss-Markov theorem, polynomial regression, indicator variables, residual analysis, weighted least squares, variable selection techniques, nonlinear regression, correlation analysis and autocorrelation. Computer packages are used for statistical analyses.
Includes: Experiential Learning Activity
Precludes additional credit for STAT 3553.
Prerequisite(s): i) STAT 2509 or STAT 2607 or ECON 2202 or ECON 2220 or equivalent; and ii) MATH 1152 or MATH 1107 or MATH 1119 or equivalent; or permission of the School.
Lectures three hours a week and one hour laboratory.

STAT 3504 [0.5 credit]
Analysis of Variance and Experimental Design
Single and multifactor analysis of variance, orthogonal contrasts and multiple comparisons, analysis of covariance; nested, crossed and repeated measures designs; completely randomized, randomized block, Latin squares, factorial experiments, related topics. Computer packages are used for statistical analyses.
Includes: Experiential Learning Activity
Precludes additional credit for STAT 4504.
Prerequisite(s): STAT 3503 or permission of the School.
Lectures three hours a week and one hour laboratory.

STAT 3506 [0.5 credit]
Stochastic Processes and Applications (Honours)
Conditional probability and conditional expectation; Stochastic modeling; discrete time Markov chains including classification of states, stationary and limiting distributions; exponential distribution and the Poisson processes; queueing models; applications to computer systems, operations research and social sciences.
Prerequisite(s): STAT 2655 with a grade of C- or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.
STAT 3507 [0.5 credit]
Sampling Methodology
The sample survey as a vehicle for information collection in government, business, scientific and social agencies. Topics include: planning a survey, questionnaire design, simple random, stratified, systematic and cluster sampling designs, estimation methods, problem of non-response, related topics.
Prerequisite(s): one of: STAT 2507, STAT 2509, STAT 2606, STAT 2607, ECON 2201, ECON 2202, ECON 2210, ECON 2220, or equivalent; or permission of the School.
Lectures three hours a week and one hour laboratory.

STAT 3508 [0.5 credit]
Elements of Probability Theory
Discrete and continuous distributions, moment-generating functions, marginal and conditional distributions, transformation theory, limiting distributions. Precludes additional credit for STAT 3558 and STAT 3608.
Prerequisite(s): i) MATH 2008 (or MATH 2004 or MATH 2009); and ii) one of STAT 2507, STAT 2606, ECON 2200, or ECON 2201 or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3509 [0.5 credit]
Mathematical Statistics
Point and interval estimation, sufficient statistics, hypothesis testing, chi-square tests with enumeration data. Precludes additional credit for STAT 3559.
Prerequisite(s): STAT 3508 or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3553 [0.5 credit]
Regression Modeling (Honours)
Prerequisite(s): STAT 3503 or permission of the School.
Lectures three hours a week, laboratory one hour a week.

STAT 3558 [0.5 credit]
Elements of Probability Theory (Honours)
Random variables and moment-generating functions, concepts of conditioning and correlation; laws of large numbers, central limit theorem; multivariate normal distribution; distributions of functions of random variables, sampling distributions, order statistics. Precludes additional credit for STAT 3508 and STAT 3608.
Prerequisite(s): i) STAT 2655 with a grade of C- or higher; and ii) MATH 2000 with a grade of C- or higher, or (a grade of C+ or higher in MATH 2008 or MATH 2004, and permission of the instructor); or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3559 [0.5 credit]
Mathematical Statistics (Honours)
Empirical distribution functions, Monte Carlo methods, elements of decision theory, point estimation, interval estimation, tests of hypotheses, robustness, nonparametric methods. Precludes additional credit for STAT 3509.
Prerequisite(s): STAT 3558 with a grade of C- or higher; or (STAT 3508 with a grade of B or higher, and permission of the instructor); or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3600 [0.5 credit]
Actuarial Mathematics I
Severity, frequency models, loss models, risk measures, value at risk, stochastic processes, Poisson process, characteristics of actuarial models, creating new univariate distributions, heavy-tailed distributions, mixed distributions, coverage modifications.
Prerequisite(s): STAT 2655, or permission from the school.
Lectures three hours a week, tutorial one hour a week.

STAT 3601 [0.5 credit]
Life Contingent Risk Modelling I
Introduction to life insurance; traditional and modern insurance contracts; underwriting; premiums; present value random variable; force of mortality; life tables; insurance benefits; annuities; premium calculation, reserves.
Prerequisite(s): STAT 2660 and permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3606 [0.5 credit]
Insurance Analysis I
Actuarial models that value random variable; force of mortality; life tables; insurance benefits; annuities; premium calculation, reserves.
Prerequisite(s): STAT 3660 and permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3607 [0.5 credit]
Life Contingent Risk Modelling II
Introduction to life insurance; traditional and modern insurance contracts; underwriting; premiums; present value random variable; force of mortality; life tables; insurance benefits; annuities; premium calculation, reserves.
Prerequisite(s): STAT 2660 and permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3608 [0.5 credit]
Actuarial Mathematics II
Severity, frequency models, loss models, risk measures, value at risk, stochastic processes, Poisson process, characteristics of actuarial models, creating new univariate distributions, heavy-tailed distributions, mixed distributions, coverage modifications.
Prerequisite(s): STAT 2655, or permission from the school.
Lectures three hours a week, tutorial one hour a week.

STAT 3661 [0.5 credit]
Life Contingent Risk Modelling II
Introduction to life insurance; traditional and modern insurance contracts; underwriting; premiums; present value random variable; force of mortality; life tables; insurance benefits; annuities; premium calculation, reserves.
Prerequisite(s): STAT 2660 and permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3907 [0.5 credit]
Directed Studies
Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

STAT 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

STAT 4500 [0.5 credit]
Parametric Estimation (Honours)
Preliminaries on probability theory; exact and asymptotic sampling distributions; unbiasedness, consistency, efficiency, sufficiency and completeness; properties of maximum likelihood estimators; least squares estimation of location and scale parameters based on order statistics and sample quantiles; Best Asymptotically Normal (BAN) estimators.
Prerequisite(s): STAT 3559 or permission of the School. Also offered at the graduate level, with different requirements, as STAT 5600, for which additional credit is precluded.
Lectures three hours a week.
STAT 4501 [0.5 credit]
Probability Theory (Honours)
Introduction to probability, characteristic functions, probability distributions, limit theorems.
Prerequisite(s): STAT 3506 and STAT 3558 or permission of the School.
Lectures three hours a week.

STAT 4502 [0.5 credit]
Survey Sampling (Honours)
Basic concepts in sampling from finite populations; simple random sampling; stratified sampling; choice of sampling unit; cluster and systematic sampling; introduction to multistage sampling; ratio estimation; sampling with unequal probabilities and with replacement; replicated sampling; related topics.
Prerequisite(s): i) STAT 2559 or STAT 2509; and ii) either STAT 3559, or a grade of C+ or better in STAT 3509; or permission of the School.
Lectures three hours a week.

STAT 4503 [0.5 credit]
Applied Multivariate Analysis (Honours)
Selected topics in regression and correlation non-linear models. Multivariate statistical methods, principal components, factor analysis, multivariate analysis of variance, discriminant analysis, canonical correlation, analysis of categorical data.
Prerequisite(s): STAT 3553 or (STAT 3509 and STAT 3503) or permission of the School.
Also offered at the graduate level, with different requirements, as STAT 5509, for which additional credit is precluded.
Lectures three hours a week.

STAT 4504 [0.5 credit]
Statistical Design and Analysis of Experiments (Honours)
An extension of the designs discussed in STAT 2559 to include analysis of the completely randomized design, designs with more than one blocking variable, incomplete block designs, fractional factorial designs, multiple comparisons; and response surface methods. Includes: Experiential Learning Activity
Precludes additional credit for STAT 3504 and ECON 4706. PSYC 3000 is precluded for additional credit for students registered in a Mathematics program.
Prerequisite(s): STAT 3553 or STAT 3503; or permission of the School of Mathematics and Statistics.
Lectures three hours a week, laboratory one hour a week.

STAT 4506 [0.5 credit]
Nonparametric Statistics (Honours)
Order statistics; projections; U-statistics; L-estimators; rank, sign, and permutation test statistics; nonparametric tests of goodness-of-fit, homogeneity, symmetry, and independence; nonparametric density estimation; nonparametric regression analysis: kernel estimators, orthogonal series estimators, smoothing splines; high-dimensional inference and false discovery.
Prerequisite(s): STAT 3559 or permission of the School.
Also offered at the graduate level, with different requirements, as STAT 5516, for which additional credit is precluded.
Lectures three hours a week.

STAT 4507 [0.5 credit]
Statistical Inference (Honours)
Sufficient statistics, simple and composite hypotheses, most powerful and similar region test, distribution-free tests, confidence intervals, goodness-of-fit and likelihood ratio tests, large sample theory, Bayesian and likelihood methods, sequential tests.
Prerequisite(s): STAT 4500 or permission of the School.
Also offered at the graduate level, with different requirements, as STAT 5501, for which additional credit is precluded.
Lectures three hours a week.

STAT 4508 [0.5 credit]
Stochastic Models (Honours)
Review of discrete Markov chains and Poisson processes; continuous time Markov chains; pure jump Markov processes, and birth and death processes including the Q-matrix approach; the Kolmogorov equations; renewal theory; introduction to Brownian motion; queueing theory.
Prerequisite(s): STAT 3506 or permission of the School.
Also offered at the graduate level, with different requirements, as STAT 5701, for which additional credit is precluded.
Lectures three hours a week.

STAT 4509 [0.5 credit]
Advanced Mathematical Modeling (Honours)
Real-life situations in the physical, social, and life sciences are often modeled using mathematical tools. This course will examine various models and techniques used in their analysis, e.g., matrix procedures in connection with population models. Students will use a computer package to obtain numerical results.
Prerequisite(s): i) MATH 2454 and STAT 2655 (or MATH 2404 and STAT 2605) and ii) STAT 3506; or permission of the School.
Also offered at the graduate level, with different requirements, as STAT 5601, for which additional credit is precluded.
Lectures three hours a week.
STAT 4555 [0.5 credit]  
Monte Carlo Simulation (Honours)  
Basic ideas and algorithms of Monte Carlo; simulation of basic stochastic processes. Brownian motion and the Poisson process, applications to financial modelling, queueing theory. Output analysis; variance reduction. Markov chain Monte Carlo methods: Gibbs sampling, simulated annealing and Metropolis-Hastings samplers with applications.  
Includes: Experiential Learning Activity  
Prerequisite(s): STAT 3558, or a grade of B or higher in STAT 3508, or permission of the School.  
Lectures three hours a week, tutorial/laboratory one hour a week.

STAT 4601 [0.5 credit]  
Data Mining I (Honours)  
Data visualization; knowledge discovery in datasets; unsupervised learning: clustering algorithms; dimension reduction; supervised learning: pattern recognition, smoothing techniques, classification. Computer software will be used.  
Includes: Experiential Learning Activity  
Prerequisite(s): STAT 3553 or STAT 3503 or MATH 3806, or permission of the School.  
Lectures three hours a week, laboratory one hour a week.

STAT 4603 [0.5 credit]  
Time Series and Forecasting (Honours)  
Includes: Experiential Learning Activity  
Prerequisite(s): STAT 3553 or STAT 3503, or permission of the School.  
Lectures three hours a week.

STAT 4604 [0.5 credit]  
Statistical Computing (Honours)  
Statistical computing techniques, pseudo-random number generation, tests for randomness, numerical algorithms in statistics; optimization techniques; environments for data analysis, efficient programming techniques; statistics with mainstream software.  
Includes: Experiential Learning Activity  
Prerequisite(s): STAT 3553 or STAT 3503 or permission of the School.  
Lectures three hours a week, laboratory one hour a week.

STAT 4607 [0.5 credit]  
Bayesian Statistical Analysis (Honours)  
Includes: Experiential Learning Activity  
Prerequisite(s): STAT 3553 or permission of the School.  
Lectures three hours a week, laboratory one hour a week.

STAT 4660 [0.5 credit]  
Actuarial Mathematics II  
Empirical models, complete data, grouped data, credibility theory, failure time, accuracy, kernel estimation, goodness of fit tests, Bayesian analysis, inference for loss models, frequentist estimation, model selection.  
Prerequisite(s): STAT 3660 with C+ or higher, or permission of the School.  
Lectures three hours a week, tutorial one hour a week.

STAT 4661 [0.5 credit]  
Life Contingent Risk Modelling II  
Policy values; multiple state models; formulae for probability; Markov multiple state models; pension mathematics; yield curves; interest rate risk; emerging costs for life insurance; equity linked insurance; deterministic and stochastic pricing; reserving, participating, and universal life insurance.  
Precludes additional credit for STAT 3662 (no longer offered).  
Prerequisite(s): STAT 3661 with a grade of C+ or higher; or permission of the School.  
Lectures three hours a week, tutorial one hour a week.

STAT 4905 [0.5 credit]  
Honours Project (Honours)  
Consists of a written report on some approved topic or topics in the field of statistics, together with a short lecture on the report.  
Includes: Experiential Learning Activity  
Prerequisite(s): B.Math.(Honours) students only.

STAT 4907 [0.5 credit]  
Directed Studies (Honours)  
Prerequisite(s): B.Math.(Honours) students only.

Media Production and Design  
This section presents the requirements for programs in:  
• Media Production and Design B.M.P.D. Honours

Program Requirements  
Media Production and Design  
B.M.P.D. Honours (20.0 credits)  
A. Credits Included in the Major (12.0 credits)  
1. 2.0 credits in:  
   ITEC 1005 [0.5] Web Development  
   ITEC 1100 [0.5] Introduction to Interactive Media Design
MPAD 1001 [0.5] Introduction to Storytelling: The Context
MPAD 1002 [0.5] Introduction to Storytelling: The Practice

2. 1.0 credits in: 1.0
ITEC 1401 [0.5] Introduction to Scripting and Problem Solving
& ITEC 2401 [0.5] Intermediate Scripting

Or
ITEC 1400 [0.5] Introduction to Programming and Problem Solving
& ITEC 2400 [0.5] Intermediate Programming

3. 3.5 credits in: 3.5
ITEC 2000 [0.5] Multimedia Data Management
ITEC 2100 [0.5] Data Visualization
MPAD 2001 [0.5] Basics of Visual Communication I
MPAD 2002 [0.5] Basics of Visual Communication II
MPAD 2003 [0.5] Introductory Data Storytelling
MPAD 2004 [0.5] Writing for Media
MPAD 2501 [0.5] Media Law

4. 3.0 credits in: 3.0
ITEC 3100 [0.5] Immersive Storytelling
MPAD 3001 [0.5] Storytelling and Social Media
MPAD 3002 [0.5] Civic Engagement and Public Institutions I
MPAD 3003 [0.5] Civic Engagement and Public Institutions II: Minor Design Project
MPAD 3300 [0.5] Media Ethics in a Digital World
MPAD 3501 [0.5] Internet and Big Data Law

5. 2.0 credits in: 2.0
MPAD 4000 [1.0] Capstone Project
MPAD 4001 [0.5] Media Industries Now and Next
MPAD 4200 [0.5] Freelance Media Survival Skills

6. 0.5 credit from: 0.5
MPAD 3000 [0.5] Directed Studies
MPAD 4300 [0.5] Special Topic
MPAD 4400 [0.5] Directed Studies
MPAD 4500 [0.5] Special Topic
MPAD 4501 [0.5] Gender, Identity and Inequality
MPAD 4502 [0.5] Journalism and Conflict
MPAD 4503 [0.5] Journalism, Indigenous Peoples and Canada
MPAD 4504 [0.5] The Media and International Development

B. Credits Not Included in the Major (8.0 credits)

7. 8.0 credits in free electives 8.0

Total Credits 20.0

Bachelor of Media Production and Design Regulations
In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

0000-Level Courses
Students in the B.M.P.D. program may not count any 0000-level courses for credit toward their degree. Such students may, however, be required to take one or more of these courses to replace missing program prerequisites in which case the courses will be set aside as “no credit for degree” (NCD).

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements
COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton’s co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and
potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**Bachelor of Media Production and Design: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the Bachelor of Media Production and Design program;
2. Successfully completed MPAD 2002 before beginning the first work term.
3. Obtained and maintained an overall CGPA of 9.00 or higher.

Bachelor of Media Production and Design students must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Course:** MPAD 3999

**Work/Study Pattern:**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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</thead>
<tbody>
<tr>
<td>Term</td>
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<td>W/S</td>
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</tbody>
</table>

**Legend**
- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

**Degree**
- Bachelor of Media Production and Design (B.M.P.D. Honours)

**Admission Requirements**

**First Year**
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.
The six 4U or M courses must include English and one of Advanced Functions or Calculus and Vectors or Mathematics of Data Management. Advanced Functions is recommended.

**Advanced Standing**
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Media Production and Design program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Information Technology (ITEC) Courses**

**ITEC 1005 [0.5 credit]**
**Web Development**
Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid HTML5, cascading style sheets (CSS3), JavaScript and XML structures.
Precludes additional credit for IMD 1005.
Lectures and tutorials five hours a week.

**ITEC 1100 [0.5 credit]**
**Introduction to Interactive Media Design**
Overview of interactive multimedia design: user-centred and web design, mark-up languages, project management, design processes for video games, visual effects in movies, ethics, current trends in the field.
Precludes additional credit for IMD 1000.
Prerequisite(s): For students not enrolled in CSIT programs.
Lectures three hours a week.

**ITEC 1400 [0.5 credit]**
**Introduction to Programming and Problem Solving**
Introduction to basic concepts of procedural programming and algorithm design in C. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, structures, arrays, pointers, debugging, algorithmic thinking and pseudocode, computer architecture, operating systems, and libraries.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1400, COMP 1005, COMP 1405, ITEC 1401.
Lectures/tutorials six hours a week.

**ITEC 1401 [0.5 credit]**
**Introduction to Scripting and Problem Solving**
Introduction to basic concepts of object-oriented scripting and algorithm design in Python. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, arrays, tuples, lists, debugging, algorithms and pseudocode, computer architecture, operating systems, and libraries.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1400, COMP 1005, COMP 1405, ITEC 1400.
Lectures/tutorials six hours a week.
ITEC 2000 [0.5 credit]
Multimedia Data Management
Issues involving the back-end organization of information focusing on databases and database design, server-side scripting, the structured query language (SQL), digital rights management, and watermarking. Precludes additional credit for BIT 2008, COMP 2006 (no longer offered), IRM 2000 (no longer offered), IMD 2000 (no longer offered). Lectures and tutorials five hours a week.

ITEC 2100 [0.5 credit]
Data Visualization
Web-based data visualization techniques and systems. Good design practices for visualization, tools for visualization of data from a variety of fields, and programming of interactive web-based visualizations focusing on JavaScript, CSS, SVG and the D3 library. Includes: Experiential Learning Activity
Lectures/labs five hours a week.

ITEC 2400 [0.5 credit]
Intermediate Programming
Introduction to object-oriented programming and algorithm design in C++. Topics include code and data encapsulation using classes and objects, inheritance, polymorphism, object-oriented design, and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists and searching. Includes: Experiential Learning Activity
Precludes additional credit for BIT 2400, COMP 1006, COMP 1406, ITEC 2401. Prerequisite(s): ITEC 1400. Lectures three hours a week, tutorial three hours a week.

ITEC 2401 [0.5 credit]
Intermediate Scripting
Introduction to advanced object-oriented scripting and algorithm design in Python. Topics include class design and encapsulation, inheritance, polymorphism, object-oriented design, and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists, sorting, and searching. Includes: Experiential Learning Activity
Precludes additional credit for BIT 2400, COMP 1006, COMP 1406, ITEC 2400. Prerequisite(s): ITEC 1401. Lectures/tutorials six hours a week.

ITEC 3100 [0.5 credit]
Immersive Storytelling
The craft of digital storytelling, creating compelling online and game-engine packages. Using a variety of narrative formats, interactive tools, and digital content, including blogs and RSS feeds, developing an in-depth story using leading edge technologies and techniques. Includes: Experiential Learning Activity
Workshop three hours a week.

ITEC 4007 [0.5 credit]
Dynamics and Physics-Based Animation
This course deals with the essentials of physics-based animations and dynamics; topics include basics of animation mechanics, collision detection, particle systems, and dynamic systems (cloth, fluid, and hair). Includes: Experiential Learning Activity
Precludes additional credit for IMD 4007 (no longer offered). Prerequisite(s): IMD 3002 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4009 [0.5 credit]
Rigging and Advanced Character Animation
This course covers the elements of rigging and advanced character animation; topics include the basics of forwards/inverse kinematics, controls, and weighting, essentials of human and creature rigging, retargeting, face and body motion capture, and motion studies for advanced keyframe animation. Includes: Experiential Learning Activity
Prerequisite(s): IMD 3002 and IMD 3900 or equivalent. Lectures three hours a week, tutorial two hours a week.

ITEC 4010 [0.5 credit]
Visual Effects and Compositing
This course covers the essentials of Visual FX and compositing, topics include camera setups (motion control systems), set issues, match-moving, image-based lighting, chroma-keying and object extraction, colour correction, 2D tracking, and rotoscoping. Includes: Experiential Learning Activity
Prerequisite(s): IMD 3002 or equivalent. Lecture three hours a week, tutorial two hours a week.

ITEC 4011 [0.5 credit]
Artificial Intelligence for Digital Media
This course covers the basics of artificial intelligence in games and animation, including behaviour and crowd systems (e.g. boids, reciprocal velocity obstacles, social forces, agent-based modelling, cellular automata), path finding and route planning, as well as procedural animation systems. Includes: Experiential Learning Activity
Prerequisite(s): BIT 2400 or ITEC 2401 or equivalent. Lecture three hours a week, tutorial two hours a week.

ITEC 4012 [0.5 credit]
Web Application Frameworks
A detailed look at web application frameworks, focusing on client and server-side frameworks that enable more advanced user interactions, including configuration, understanding functionality, and develop with them effectively. Includes: Experiential Learning Activity
Prerequisite(s): ITEC 1005 or equivalent. Lecture three hours a week, tutorial two hours a week.
ITEC 4014 [0.5 credit]
User Experience Design and Accessibility
User experience (UX) of interactive systems, including product and service design, usability and UX research. Emphasis on accessibility, with topics including creating accessible systems for users with a range of abilities, accessibility standards, and validation of designs in a practical context.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 3004 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4015 [0.5 credit]
Digital Audio and Music
Introduces the concepts of digital audio & music specifically how it relates to digital media (games, film, mobile, etc). Topics include, digital audio recording, multitrack production and mixing, foley effects, musical interference and intonations, signal processing for effect, time & spatial variations, and studio recording.
Includes: Experiential Learning Activity
Studio five hours a week.

ITEC 4016 [0.5 credit]
Virtual and Augmented Reality
Design, development, and evaluation of virtual and augmented reality systems. Topics include VR/AR history, applications, hardware (display and input devices), software, interaction techniques for navigation, selection, manipulation, human factors, and empirical validation. Projects will use modern 3D game engines and VR/AR devices.
Includes: Experiential Learning Activity
Lecture three hours a week, tutorial two hours a week.

ITEC 4017 [0.5 credit]
Photo and Non-Photo-Realistic Rendering
This course deals with physically-based rendering methods and techniques in the global illumination field; topics include the rendering equation, ray and path tracing, radiosity rendering, photon mapping, final gather methods, materials and shaders, as well taking a look at non-photo-realistic rendering.
Includes: Experiential Learning Activity
Lecture three hours a week, tutorial two hours a week.

ITEC 4018 [0.5 credit]
GPU Programming and Real-Time Rendering
This course deals with the programming of the Graphics Processing Unit (GPU); topics include real-time rendering, shaders, and other advanced programming techniques that utilise single-instruction / multiple thread parallel processing units.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2400 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4019 [0.5 credit]
Directing and Cinematography for Digital Storytelling
This course covers the basics of being a director in a digital storytelling environment, including the basics of direction, dealing with actors, following scripts, and dealing with elements of cinematography; including lighting, cameras, shade, and shadow.
Includes: Experiential Learning Activity
Lecture three hours a week, tutorial two hours a week.

ITEC 4020 [0.5 credit]
Environment and Architectural Modelling
The course deals with the creation, development, and use of assets for digital environments; with specific focus on the workflows associated with scene construction and architectural modelling for a variety of real-time and non-real-time systems.
Includes: Experiential Learning Activity
Studio five hours a week.

Media Production and Design (MPAD) Courses

MPAD 1001 [0.5 credit]
Introduction to Storytelling: The Context
Theories, origins and evolution of story within society as the digital age shapes the way we construct and consume narratives. How stories are conceived through words, sound and images, and how they resonate with and influence audiences.
Lectures three hours a week.

MPAD 1002 [0.5 credit]
Introduction to Storytelling: The Practice
Finding and telling stories in engaging ways using text and basic images. Assignments build basic skills in research, interviewing, writing, storytelling, editing and ethics. How to structure and pitch for publication.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 1001.
Workshop three hours a week.

MPAD 2001 [0.5 credit]
Basics of Visual Communication I
Introduction to visual storytelling through video. Students develop editorial and technical skills to produce video stories that include scripting to images. Students will also learn the basics of video shooting on a range of equipment as well as basic video editing skills.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 1002.
Workshop three hours a week.

MPAD 2002 [0.5 credit]
Basics of Visual Communication II
This course expands from video theory and practice to still photography and multimedia projects, with emphasis on hands-on work with a theoretical underpinning, giving students the practical and technical skills to tell stories in multiple formats.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 2001.
Workshop three hours a week.
MPAD 2003 [0.5 credit]
Introductory Data Storytelling
Governments use data for tracking. Numbers guide public policy and can become powerful and important stories. Students will gain a theoretical understanding of the promise and pitfalls of data availability alongside the practical skills needed for powerful data-based storytelling.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 1002.
Workshop three hours a week.

MPAD 2004 [0.5 credit]
Writing for Media
This course tests student baseline skills, then develops writing capabilities tailored to specific media formats. Coursework is based on the principle that the best way to improve technique is through regular writing and timely constructive critiques.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 1002.
Workshop three hours a week.

MPAD 2501 [0.5 credit]
Media Law
A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court.
Also listed as COMS 2501, JOUR 2501.
Prerequisite(s): Second-year standing in the Bachelor of Media Production and Design program.
Lectures three hours a week.

MPAD 3000 [0.5 credit]
Directed Studies
Directed Studies on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.
Prerequisite(s): Third year standing in Media Production and Design or permission from the School of Journalism and Communication.
Unscheduled.

MPAD 3001 [0.5 credit]
Storytelling and Social Media
Social media in storytelling. Theory-based lectures, hands-on course modules, discussions and presentations. Students will learn tactics to apply social media for research, gathering information, finding contacts and promoting their own work.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 2004.
Lecture three hours a week.

MPAD 3002 [0.5 credit]
Civic Engagement and Public Institutions I
Expert sources from Canadian institutions discuss covering the economy, justice, environment and security. How public policy is made, the role of the public and how the media analyze information, develop ideas, and produce stories.
Prerequisite(s): third-year standing in the Bachelor of Media Production and Design or the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information.
Lectures three hours a week.

MPAD 3003 [0.5 credit]
Civic Engagement and Public Institutions II: Minor Design Project
Group work building on the fall term course. Production of a public institutions mini-project involving the various development stages that will be employed in the final year capstone project, including the creation of a detailed design document to guide group projects.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 3002.
Workshop three hours a week.

MPAD 3300 [0.5 credit]
Media Ethics in a Digital World
An examination of ethical issues relating to production of news and other forms of information content, particularly as they relate to digital environments. Discussion of various approaches to ethical decision-making, application in contemporary settings.
Also listed as JOUR 3300.
Prerequisite(s): MPAD 2501.
Lectures three hours a week.

MPAD 3501 [0.5 credit]
Internet and Big Data Law
The legal use of big data to create content and analyze information. Who owns data; privacy and security implications within a legal landscape fraught with legal concerns and policy challenges.
Prerequisite(s): JOUR 2501 or MPAD 2501 and third-year standing in the Bachelor of Media Production and Design or in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information.
Lectures three hours a week.

MPAD 3600 [0.5 credit]
Special Topic
Examination of a topic in storytelling and media not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Media Production and Design program.
Lecture three hours a week.

MPAD 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 2002.
MPAD 4000 [1.0 credit]
Capstone Project
Student groups develop a capstone project beginning with story development and planning, completion of a story design document including project description, research, key vistas and sketches or storyboards. Group presentations leading to final media project at the end of second term.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 2002, MPAD 3003, ITEC 2100, ITEC 2400 and fourth-year standing in the Bachelor of Media Production and Design program.

MPAD 4001 [0.5 credit]
Media Industries Now and Next
Changes in the media, the public’s relationship with the media and how journalists, news organizations and other media players respond. Practical issues and challenges in the professional life of an information producer.
Also listed as JOUR 4001.
Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.
Lectures and discussions three hours a week.

MPAD 4200 [0.5 credit]
Freelance Media Survival Skills
Preparation for freelancing to publications and production houses. Resumes, finding potential buyers, interviews, establishing and marketing an individual as a business, accounting and management and dealing with taxes and benefits. Pitching stories, ideas and services.
Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.
Lectures three hours a week.

MPAD 4300 [0.5 credit]
Special Topic
Students will choose a topic from a list of journalism options, to be announced each year.
Also listed as JOUR 4300.
Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

MPAD 4400 [0.5 credit]
Directed Studies
Directed study on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.
Prerequisite(s): Third year standing in Media Production and Design or permission from the School of Journalism and Communication.
Unscheduled.

MPAD 4500 [0.5 credit]
Special Topic
Examination of a topic in storytelling and media not covered in depth in other courses.
Also listed as JOUR 4500.
Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

MPAD 4501 [0.5 credit]
Gender, Identity and Inequality
How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis. Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations.
Includes: Experiential Learning Activity
Also listed as JOUR 4501.
Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

MPAD 4502 [0.5 credit]
Journalism and Conflict
For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.
Includes: Experiential Learning Activity
Also listed as JOUR 4502.
Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

MPAD 4503 [0.5 credit]
Journalism, Indigenous Peoples and Canada
Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous people in the era of reconciliation.
Includes: Experiential Learning Activity
Also listed as JOUR 4503.
Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

MPAD 4504 [0.5 credit]
The Media and International Development
A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda.
Includes: Experiential Learning Activity
Also listed as JOUR 4504.
Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

Medieval and Early Modern Studies (Minor)
This section presents the requirements for programs in:
• Minor in Medieval and Early Modern Studies
Program Requirements

Minor in Medieval and Early Modern Studies (4.0 credits)

This minor is available to all undergraduate degree students.

Requirements:

1. **1.0 credit in:**
   - MEMS 2001 [0.5] Discovering the Medieval and Early Modern Past
   - & MEMS 3001 [0.5] Modern Past
   
2. **2.0 credits from** Approved Medieval and Early Modern Studies Electives at the 2000-level or higher, with the exception of 1.0 credit in approved language training which may be at the 1000-level or higher.

3. **1.0 credit from** Approved Medieval and Early Modern Studies Electives at the 3000-level or higher.

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Notes:

1. Courses used to fulfil Items 2 and 3 above must be from more than one unit.

2. Other courses may be substituted for the credits specified in Items 2 and 3, when material on Medieval and Early Modern topics are central to the course. Such substitutions must be individually approved by the program coordinator, through the College of the Humanities. Students are encouraged to consult course descriptions of Special Topics courses in the related academic units.

Approved Medieval and Early Modern Studies Electives

Note: access to these courses is not guaranteed, and may depend upon space availability and the satisfaction of other requirements such as course prerequisites.

**Architecture**
- ARCH 4305 [0.5] Medieval Architecture
- ARCH 4306 [0.5] Renaissance Theory
- ARCH 4307 [0.5] Muslim Architecture

**Art History**
- ARTH 2202 [0.5] Medieval Architecture and Art
- ARTH 2300 [0.5] Italian Renaissance Art
- ARTH 4202 [0.5] Topics in Medieval Architecture and Art
- ARTH 4305 [0.5] Topics in Renaissance Art

**English**
- ENGL 2105 [0.5] History of the English Language
- ENGL 2301 [0.5] Literatures and Cultures 500-1500
- ENGL 2302 [0.5] Literatures and Cultures 1500-1700
- ENGL 3105 [0.5] History of Literary Theory
- ENGL 3200 [0.5] Medieval Literature
- ENGL 3202 [0.5] Chaucer
- ENGL 3305 [0.5] Shakespeare and the Stage
- ENGL 3306 [0.5] Shakespeare and Film
- ENGL 4105 [0.5] Old English
- ENGL 4208 [0.5] Studies in Medieval Literature

- ENGL 4301 [0.5] Studies in Renaissance Literature

**French**
- FREN 3212 [0.5] Des manuscrits aux belles-lettres: de la littérature médiévale à l'humanisme

**Greek and Roman Studies**
- CLCV 2905/HIST 2905 [0.5] of Ancient Rome II
- LATN 1005 [0.5] Introduction to Latin I
- LATN 1006 [0.5] Introduction to Latin II
- LATN 2200 [0.5] Intermediate Latin I
- LATN 2201 [0.5] Intermediate Latin II
- LATN 3900 [0.5] Advanced Latin I
- LATN 3901 [0.5] Advanced Latin II
- LATN 4900 [0.5] Directed Study
- LATN 4901 [0.5] Directed Study

**History**
- HIST 2000 [1.0] Medieval Europe
- HIST 2204 [0.5] Early Modern Europe 1350-1650
- HIST 2501 [0.5] Early Modern Britain
- HIST 3005 [0.5] Medieval Aristocratic Life
- HIST 3006 [0.5] Medieval Religious Life
- HIST 3007 [0.5] Medieval Intellectual Life
- HIST 3105 [0.5] Renaissance Europe
- HIST 3708 [0.5] Reformation Europe
- HIST 4006 [1.0] Seminar in Medieval History
- HIST 4100 [1.0] Seminar in Early Modern European History

**Humanities**
- HUMS 2000 [1.0] Reason and Revelation
- HUMS 2101 [0.5] Art from Antiquity to the Medieval World
- HUMS 3000 [1.0] Culture and Imagination
- HUMS 3200 [1.0] European Literature

**Political Science**
- PSCI 3709 [0.5] Ancient and Medieval Political Thought

**Religion**
- RELI 2310 [0.5] Islam
- RELI 2330 [0.5] The Qur'an
- RELI 3250 [0.5] Classical Islamic Thought
- RELI 3220/HIST 371/Reformation Europe
- RELI 3232 [0.5] Christian Discipline
- RELI 3340 [0.5] The Life and Image of Muhammad

**Regulations**

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).
Medieval and Early Modern Studies (MEMS) Courses
MEMS 2001 [0.5 credit]
Discovering the Medieval and Early Modern Past
An introduction to the Late Antique, Medieval and Early Modern worlds. Organized thematically, students will be introduced to interdisciplinary exploration of core topics. Prerequisite(s): second-year standing. Lectures and discussion groups three hours a week.

MEMS 3001 [0.5 credit]
Researching the Medieval and Early Modern Past
Continued interdisciplinary study of the Late Antique, Medieval and Early Modern worlds, with a focus on how to develop a deeper analysis of the core topics examined in MEMS 2001. Prerequisite(s): MEMS 2001, or permission of the Program Coordinator. Lectures three hours a week.

Music
This section presents the requirements for programs in:
- Music B.Mus. Honours
- Music B.A. Honours
- Music B.A. Combined Honours
- Music B.A.
- Minor in Music
- Certificate in Carillon Studies

Program Requirements
Course Categories for Music Programs

Music History and Musicology

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>MUSI 1000</td>
<td>Introduction to the Study of Music</td>
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<tr>
<td>MUSI 1001</td>
<td>A History of Western Classical Music: Medieval to the Present</td>
<td>0.5</td>
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<tr>
<td>MUSI 1002</td>
<td>Issues in Popular Music</td>
<td>0.5</td>
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<tr>
<td>MUSI 2005</td>
<td>Introduction to Jazz History</td>
<td>0.5</td>
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<tr>
<td>MUSI 2006</td>
<td>Popular Musics before 1945</td>
<td>0.5</td>
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<td>MUSI 2007</td>
<td>Popular Musics after 1945</td>
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<td>MUSI 2008</td>
<td>Music of the World's Peoples</td>
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<td>MUSI 2009</td>
<td>Music of Asia</td>
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<td>MUSI 2102</td>
<td>Music in an Age of Spectacle, Commerce, and Colonization</td>
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<td>MUSI 2103</td>
<td>Music in an Age of Order, Invention, and Revolution</td>
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<td>Music in Canada</td>
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<td>Popular Musics of Canada</td>
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<tr>
<td>MUSI 3106</td>
<td>Popular Musics of the World</td>
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<td>MUSI 3108</td>
<td>Musics of the Middle East and North Africa</td>
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<tr>
<td>MUSI 3301</td>
<td>Music and Religion</td>
<td>0.5</td>
</tr>
<tr>
<td>MUSI 3302</td>
<td>Music and Gender I</td>
<td>0.5</td>
</tr>
<tr>
<td>MUSI 3400</td>
<td>A History of Opera before 1800</td>
<td>0.5</td>
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<tr>
<td>MUSI 3401</td>
<td>A History of Opera from 1800 to 1945</td>
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<tr>
<td>MUSI 3402</td>
<td>Film Music</td>
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<tr>
<td>MUSI 3403</td>
<td>Music Industries</td>
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Theory and Composition

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MUSI 1107</td>
<td>Elementary Materials of Music</td>
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<tr>
<td>MUSI 1700</td>
<td>Theoretical Studies: Foundations of Music Theory</td>
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</tr>
<tr>
<td>MUSI 1701</td>
<td>Theoretical Studies: Common Practice I</td>
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<tr>
<td>MUSI 1710</td>
<td>Theoretical Studies: Aural Training I</td>
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</tr>
<tr>
<td>MUSI 1711</td>
<td>Theoretical Studies: Applied Rhythmic Training I</td>
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<tr>
<td>MUSI 2601</td>
<td>Orchestration and Instrumentation</td>
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<td>MUSI 2602</td>
<td>Composition I</td>
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<tr>
<td>MUSI 2608</td>
<td>Computer Music I: Fundamentals of Electronic Music Production</td>
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<tr>
<td>MUSI 2609</td>
<td>Computer Music II: Production, Collaboration and Performance</td>
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<tr>
<td>MUSI 2700</td>
<td>Theoretical Studies: Common Practice II</td>
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<tr>
<td>MUSI 2701</td>
<td>Theoretical Studies: Popular Music Practice</td>
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<tr>
<td>MUSI 2703</td>
<td>Theoretical Studies VI: Practical Keyboard Skills</td>
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<tr>
<td>MUSI 2710</td>
<td>Theoretical Studies: Aural Training II</td>
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<td>MUSI 2711</td>
<td>Theoretical Studies: Applied Rhythmic Training II</td>
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<td>MUSI 3602</td>
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<td>Theoretical Studies: Seminar in Theory and Analysis</td>
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<td>MUSI 3701</td>
<td>Theoretical Studies: Jazz Styles and Structures</td>
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<td>MUSI 4602</td>
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<td>MUSI 4700</td>
<td>Theoretical Studies: Advanced Seminar in Theory and Analysis</td>
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<tr>
<td>MUSI 4701</td>
<td>Introduction to Jazz Arranging</td>
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<tr>
<td>MUSI 4704</td>
<td>Tonal Counterpoint</td>
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</tr>
<tr>
<td>MUSI 4705</td>
<td>Post-Tonal Theory and Analysis</td>
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</tr>
<tr>
<td>MUSI 4906</td>
<td>Honours Portfolio in Composition</td>
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Performance

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<td>MUSI 3405</td>
<td>Musical Theatre</td>
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<tr>
<td>MUSI 3406</td>
<td>Instrumental Music: Music for Orchestra</td>
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<tr>
<td>MUSI 3407</td>
<td>Instrumental Music: Chamber Music</td>
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<tr>
<td>MUSI 4005</td>
<td>Issues in Jazz Studies</td>
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<td>MUSI 4006</td>
<td>Issues in the Study of Popular Music</td>
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<td>MUSI 4007</td>
<td>The Composer in Context</td>
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<td>MUSI 4102</td>
<td>Theory and Methods in Ethnomusicology</td>
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<td>MUSI 4103</td>
<td>Ethnomusicology of Canadian Traditions</td>
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<tr>
<td>MUSI 4104</td>
<td>First Peoples Music in Canada</td>
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<td>MUSI 4105</td>
<td>Issues and Processes in African Music</td>
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<td>MUSI 4303</td>
<td>Music and Gender II</td>
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<tr>
<td>MUSI 4304</td>
<td>Music and Globalization</td>
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</tr>
<tr>
<td>MUSI 4306</td>
<td>Music and Wellbeing in a Global Context</td>
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</tr>
<tr>
<td>MUSI 4908</td>
<td>Honours Essay in Musicology</td>
<td>1.0</td>
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</table>
B.Mus. Honours (20.0 credits)

Music

A. Credits Included in the Major CGPA (14.5 credits)

1. Performance: 3.0 credits in:
   - MUSI 1900 [0.5] Performance I
   - MUSI 1901 [0.5] Performance II
   - MUSI 2900 [0.5] Performance III
   - MUSI 2901 [0.5] Performance IV
   - MUSI 3900 [0.5] Performance V
   - MUSI 3901 [0.5] Performance VI

2. Music Theory:
   - a. 4.0 credits in:

Prohibited and Restricted Courses

Performance courses are open only to students in the B.Mus. program. All ensemble (choir, jazz, early music, Indian classical music, chamber music, etc.) courses are open (without credit) to members of the public.

Special Topics

- MUSI 3200 [0.5] Special Topics
- MUSI 3201 [0.5] Special Topics
- MUSI 3205 [0.5] Specialized Studies
- MUSI 3206 [0.5] Specialized Studies in Performance
- MUSI 3604 [0.5] Computer Music Projects
- MUSI 4200 [0.5] Special Topics
- MUSI 4201 [0.5] Special Topics
- MUSI 4205 [0.5] Specialized Studies
- MUSI 4206 [0.5] Specialized Studies in Performance
- MUSI 4209 [1.0] Specialized Studies

Specialized Studies

- MUSI 1700 [0.5] Theoretical Studies: Foundations of Music Theory
- MUSI 1701 [0.5] Theoretical Studies: Common Practice I
- MUSI 1710 [0.5] Theoretical Studies: Aural Training I
- MUSI 1711 [0.5] Theoretical Studies: Applied Rhythmic Training I
- MUSI 2700 [0.5] Theoretical Studies: Common Practice II
- MUSI 2701 [0.5] Theoretical Studies: Popular Music Practice
- MUSI 2710 [0.5] Theoretical Studies: Aural Training II
- MUSI 2711 [0.5] Theoretical Studies: Applied Rhythmic Training II

b. 0.5 credit from:
   - MUSI 3700 [0.5] Theoretical Studies: Seminar in Theory and Analysis
   - MUSI 3701 [0.5] Theoretical Studies: Jazz Styles and Structures
   - MUSI 4700 [0.5] Theoretical Studies: Advanced Seminar in Theory and Analysis
   - MUSI 4701 [0.5] Introduction to Jazz Arranging
   - MUSI 4704 [0.5] Tonal Counterpoint
   - MUSI 4705 [0.5] Post-Tonal Theory and Analysis

3. Music History and Musicology:
   - a. 2.0 credits in:
     - MUSI 1000 [0.5] Introduction to the Study of Music
     - MUSI 1001 [0.5] A History of Western Classical Music: Medieval to the Present
     - MUSI 1002 [0.5] Issues in Popular Music
     - MUSI 2008 [0.5] Music of the World's Peoples

b. 0.5 credit in Music History and Musicology at the 2000-level
   - c. 0.5 credit from one of the following Canadian music courses:

   - MUSI 3103 [0.5] Music in Canada
   - MUSI 3104 [0.5] Popular Musics of Canada
   - MUSI 4103 [0.5] Ethnomusicology of Canadian Traditions
   - MUSI 4104 [0.5] First Peoples Music in Canada

   d. 0.5 credit in Music History and Musicology at the 3000-level

4. 3.5 credits in MUSI, satisfying:
   - a. 1.0 credit in MUSI at the 2000-level
   - b. 1.0 credit in MUSI at the 3000-level
   - c. 1.5 credit in MUSI at the 4000-level

B. Credits Not Included in the Major CGPA (5.5 credits)

5. 3.0 credits not in MUSI, not cross-listed with MUSI
6. 2.5 credits in free electives

C. Additional Non-Credit Requirements

7. Satisfactory performance in one full year (two consecutive terms) of Choir. It is strongly recommended that students fulfill this requirement by participating in MUSI 1912 and MUSI 1913 in their first year of B.Mus study.
8. Satisfactory performance in six further Ensemble courses, which may be fulfilled by further choir participation or by some other ensemble (see list in Course Categories, above).

Total Credits 20.0

Music

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.5 credits from:
   MUSI 1000 [0.5] Introduction to the Study of Music
   MUSI 1001 [0.5] A History of Western Classical Music: Medieval to the Present
   MUSI 1002 [0.5] Issues in Popular Music
   MUSI 2008 [0.5] Music of the World’s Peoples

2. 0.5 credit in Music History and Musicology at the 2000-level

3. 1.0 credit in Music History and Musicology at the 3000-level

4. 2.0 credits in MUSI at the 2000-level

5. 2.0 credits in MUSI at the 3000-level

6. 2.0 credits in MUSI at the 4000-level

7. 1.0 credit in MUSI

B. Credits Not Included in the Major CGPA (8.0 credits)

8. 2.0 credits in electives not in MUSI

9. 2.0 credits in free electives

Total Credits 20.0

Music

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.5 credits from:
   MUSI 1000 [0.5] Introduction to the Study of Music
   MUSI 1001 [0.5] A History of Western Classical Music: Medieval to the Present
   MUSI 1002 [0.5] Issues in Popular Music
   MUSI 2008 [0.5] Music of the World’s Peoples

2. 1.5 credits in MUSI at the 2000-level

3. 2.0 credits in MUSI at the 3000-level

4. 1.0 credit in MUSI at the 4000-level

5. 1.0 credit in MUSI

B. Additional Requirements (13.0 credits)

6. The requirements from the other discipline must be satisfied

7. Sufficient free electives to make 20.0 credits total for the program

Total Credits 20.0

Music

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.5 credits from:
   MUSI 1000 [0.5] Introduction to the Study of Music
   MUSI 1001 [0.5] A History of Western Classical Music: Medieval to the Present
   MUSI 1002 [0.5] Issues in Popular Music
   MUSI 2008 [0.5] Music of the World’s Peoples

B. Credits Not Included in the Major CGPA (8.0 credits)

2. 0.5 credit in Music History and Musicology at the 2000-level

3. 2.0 credits in MUSI at the 2000-level

4. 2.0 credits in MUSI at the 3000-level

5. 1.0 credit in Music

B. Credits Not Included in the Major CGPA (8.0 credits)

6. 6.0 credits in electives not in MUSI

7. 2.0 credit in free electives

Total Credits 15.0

Minor in Music (4.0 credits)

Open to all undergraduate degree students not in Music programs.

Requirements

1. 1.0 credit from:
   MUSI 1001 [0.5] A History of Western Classical Music: Medieval to the Present
   MUSI 1002 [0.5] Issues in Popular Music
   MUSI 2008 [0.5] Music of the World’s Peoples

2. 1.0 credit in MUSI at the 2000-level

3. 1.0 credit in MUSI at the 3000-level

4. 1.0 credit in MUSI

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Certificate in Carillon Studies (4.0 credits)

While the Certificate in Carillon Studies may be completed as an independent, stand-alone certificate, all courses taken in completion of the curriculum outlined above may be applied for credit toward the Bachelor of Music or B.A. Music degrees, should a certificate student opt to apply for acceptance to one of these programs. Since the courses are transferable in this way, it will also be possible for students currently enrolled in one of Carleton’s undergraduate Music programs to concurrently complete the Certificate in Carillon Studies.

Successful completion requires grades of C or higher in all courses.

Year One (2.0 credits)

Requirements

1. 1.0 credit in Performance Studies:
   MUSI 1900 [0.5] Performance I
   MUSI 1901 [0.5] Performance II

2. 0.5 credit from:
   MUSI 1000 [0.5] Introduction to the Study of Music
   MUSI 1001 [0.5] A History of Western Classical Music: Medieval to the Present
   MUSI 1710 [0.5] Theoretical Studies: Aural Training

3. 0.5 credit from:
   MUSI 4200 [0.5] Special Topics
   MUSI 4800 [0.5] Practicum in Music

   Music elective as approved by both the Dominion Carillonneur and the Supervisor of Performance Studies

Year Two (2.0 credits)

Requirements
Students in the following interdisciplinary programs are exempt from breadth requirements.

**Breadth Area 1: Culture and Communication**
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarín, Portuguese, Russian, Spanish)

**Subject codes:** ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**

**Subject codes:** AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

**Breadth Area 3: Science, Engineering, and Design**

**Subject codes:** AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IERM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SRRE, STAT, SYSC, TSES

**Breadth Area 4: Social Sciences**

**Subject codes:** ANTH, BUSI, CGSC, CRJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAW, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

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**Regulations**
See the Academic Regulations of the University section of this Calendar.

**B.A. Regulations**
The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**
B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**
Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice
Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree

Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Academic Performance Evaluation for Bachelor of Music

For purposes of Academic Performance Evaluation, students in the Bachelor of Music program are subject to the standard rules for Honours students with the following additions:

- Bachelor of Music Students will receive an evaluation of their Performance Core courses at the end of each Winter term as long as they have completed a Performance Core course in the preceding summer, fall, or winter terms.
- Bachelor of Music students who fail to obtain a grade of C+ or higher in any two consecutive performance courses or in any two consecutive attempts at the same performance course must leave the program with the status Suspension (SU).

- Good Standing in Bachelor of Music requires that the Performance CGPA be at least 6.0.

The performance CGPA is the cumulative grade point average calculated over all courses in the Performance Core in the same manner as other CGPA calculations. The courses in the Performance Core are:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>MUSI 1900</td>
<td>Performance I</td>
</tr>
<tr>
<td>MUSI 1901</td>
<td>Performance II</td>
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<tr>
<td>MUSI 2900</td>
<td>Performance III</td>
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<tr>
<td>MUSI 2901</td>
<td>Performance IV</td>
</tr>
<tr>
<td>MUSI 3900</td>
<td>Performance V</td>
</tr>
<tr>
<td>MUSI 3901</td>
<td>Performance VI</td>
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Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.
Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

### Admission Requirements

#### Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

#### First Year

**For B.A. and B.A. (Honours)**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

#### Advanced Standing

**B.A. and B.A. (Honours) Program**

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

### Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

### Degree

- B.Mus. (Honours)

#### Admission Requirements

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

Although it is not an admission requirement, a 4U course in English is recommended.

Note: An audition is required.

#### Advanced Standing

Students transferring into the Bachelor of Music with first, second, or third year standing must have achieved a major CGPA of 6.00 (C+) or higher and an overall CGPA of 5.00 (C) or higher. Students beginning the final 5.0 credits towards the Bachelor of Music degree must have achieved a major CGPA of 6.50 (C+/B-) or higher and an overall CGPA of 5.00 (C) or higher.

### Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

### Admission Requirements

To be eligible for admission to the Certificate in Carillon Studies, applicants must have:

- Successful audition (a minimum piano proficiency level equivalent to Royal Conservatory of Music Grade 9 is expected);
- Grade II Theory Rudiments, Royal Conservatory of Music (or equivalent);
- Approval of the relevant SSAC/Music Associate Performance Instructor (normally the Dominion Carillonneur);
- Approval of the Music Program.
Music (MUSI) Courses

Note: the majority of courses are open to non-Majors; students are advised to consult the Discipline. Priority is given to Music students.

MUSI 1000 [0.5 credit]
Introduction to the Study of Music
Introduction to issues and methods in the study of music. Development of writing and research skills; methodological approaches in all academic areas of music (historical musicology, ethnomusicology, popular music studies, music theory).
Prerequisite(s): first-year enrolment in the B.Mus., B.A. Music or B.A. Hons. Music program.
Lectures three hours a week.

MUSI 1001 [0.5 credit]
A History of Western Classical Music: Medieval to the Present
Western classical music from the medieval period to the present. Major historical periods (Medieval, Renaissance, Baroque, Classical, Romantic, Modern, Postmodern) are examined through representative music ranging from Gregorian chant to contemporary experimental trends. Lectures three hours a week.

MUSI 1002 [0.5 credit]
Issues in Popular Music
History of world popular music from the 19th century until the present. Topics may include the growth of the music industry, the impact of technology, stardom, world music, the role of the press, copyright, censorship, and sexuality. Lectures three hours a week.

MUSI 1003 [0.5 credit]
Understanding Music
Through musical examples drawn from diverse cultures and historical periods, students develop the ability to describe and analyze different aspects of music and deepen their appreciation of music as a cultural experience. No credit for students in B.Mus, B.A Honours Music or B.A. Music. Lectures three hours a week.

MUSI 1107 [0.5 credit]
Elementary Materials of Music
An introduction to the rudiments of music and aural training. Successful completion of this course will fulfil the prerequisite for entry into MUSI 1700. Not available to B.Mus. students for credit. Lectures three hours a week.

MUSI 1700 [0.5 credit]
Theoretical Studies: Foundations of Music Theory
An introduction to the organizational principles underlying tonal music including intervals, scales, rhythm, metre, chords, counterpoint, form, cadences, and harmonic progressions.
Prerequisite(s): permission of the Discipline. Lectures three hours a week.

MUSI 1701 [0.5 credit]
Theoretical Studies: Common Practice I
A study of the harmonic, melodic, rhythmic and formal structures of music of the common-practice period, with emphasis on the development of analytical and written skills of diatonic music.
Prerequisite(s): MUSI 1700 or permission of the Discipline. Lectures three hours a week.

MUSI 1710 [0.5 credit]
Theoretical Studies: Aural Training I
A study of ear training, sight singing, and basic keyboard skills in relation to classical and popular musics, with emphasis on melodic, harmonic, and formal structures. Includes: Experiential Learning Activity
Prerequisite(s): permission of the Discipline. Lectures three hours a week.

MUSI 1711 [0.5 credit]
Theoretical Studies: Applied Rhythmic Training I
A study of the rhythm of selected classical, popular, and world musics, with emphasis on applied performance, movement, and dictation.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Discipline. Lectures and workshops three hours a week.

MUSI 1900 [0.5 credit]
Performance I
Individual vocal or instrumental instruction in classical, traditional or popular idioms, in addition to individual performances and group class instruction.
Includes: Experiential Learning Activity
Prerequisite(s): audition and enrolment in the B.Mus. program; first-year standing or permission of the Discipline.

MUSI 1901 [0.5 credit]
Performance II
Individual vocal or instrumental instruction in classical, traditional or popular idioms, in addition to individual performances and group class instruction.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1900 and enrolment in the B.Mus. program; first-year standing or permission of the Discipline.

MUSI 1912 [0.0 credit]
Choral Ensemble I
Participation in a choral ensemble, by arrangement with the Supervisor of Performance and Practical Studies. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1900 and enrolment in the B.Mus. program and permission of the Choral Director. Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.
MUSI 1913 [0.0 credit]
Choral Ensemble II
A continuation of MUSI 1912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): first-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1914 [0.0 credit]
Instrumental Ensemble I
Participation in an instrumental ensemble, by arrangement with the Supervisor of Performance and Practical Studies. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): first-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1915 [0.0 credit]
Instrumental Ensemble II
A continuation of MUSI 1914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): first-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2005 [0.5 credit]
Introduction to Jazz History
A survey of ragtime and jazz from their roots in pre-twentieth-century black music and white music to contemporary jazz idioms, including an examination of New Orleans jazz and Dixieland, swing, bebop, cool jazz, and free jazz.
Precludes additional credit for MUSI 2205.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2006 [0.5 credit]
Popular Musics before 1945
Selected aspects of the development of Anglo-American popular musics from their roots in the nineteenth century until the shifts and tensions which led to the advent of rock-and-roll and soul in the 1950s. Genres to be examined include blues, country, the sentimental ballad, Broadway music.
Precludes additional credit for MUSI 2203, MUSI 2206, MUSI 2208.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2007 [0.5 credit]
Popular Musics after 1945
Selected aspects of the development of Anglo-American and world popular musics from the advent of rock `n' roll and soul to the present. Early rock `n' roll, British rhythm `n' blues, Motown, West Coast music, punk, heavy metal, new wave, disco and country.
Precludes additional credit for MUSI 2207, MUSI 2208, MUSI 2209.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2008 [0.5 credit]
Music of the World’s Peoples
A survey of musical traditions from various regions of the world, with an emphasis on the sociocultural contexts in which those musics are created and performed.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 2300.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2009 [0.5 credit]
Music of Asia
A comparative and analytical study of music in Asia, including India, China, Korea, Indonesia, Japan, and the Arabic world, through an examination of the music, musical instruments and theoretical systems.
Precludes additional credit for MUSI 2301.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2102 [0.5 credit]
Music in an Age of Spectacle, Commerce, and Colonization
The Baroque (1600-1750) was simultaneously shaped by absolutist regimes, competing religions, and an emerging public sphere. Music and culture from Monteverdi to Bach and Handel are investigated in the contexts of power, (geo)politics, religion, aesthetics, gender, socio-economics, dissemination, genre, and compositional practices.
Precludes additional credit for MUSI 2001.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2103 [0.5 credit]
Music in an Age of Order, Invention, and Revolution
Peace and revolution, faith and secularism, noble privilege and bourgeois commerce: fundamental contradictions underlying the creative work of Mozart, Haydn, and Beethoven. This course studies their compositions— operas, sacred works, symphonies, chamber music— within the political, social and cultural institutions of their times (ca. 1730-1815).
Precludes additional credit for MUSI 2002.
Prerequisite(s): second-year standing.
Lectures three hours a week.
MUSI 2107 [0.5 credit]
Music in an Age of Tumult, Innovation, and Pluralism
A survey of European classical music of the 20th century. Idioms to be examined in the socio-political climate of the period include impressionism, expressionism, nationalism, neo-classicism, music of political commitment, contemporary opera and musical theatre, serialism, chance, textural composition, process music and neoromanticism.
Precludes additional credit for MUSI 2105, 2106.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2601 [0.5 credit]
Orchestration and Instrumentation
Introduction to the fundamentals of effective and professional arranging. All aspects of the various instruments of the orchestra and matters having to do with the practicalities of orchestration for both small and large ensembles, and accepted professional standards of score presentation.
Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.
Lecture three hours a week.

MUSI 2602 [0.5 credit]
Composition I
Introduction to theories and technicalities involved in original creative writing through the preparation of individual assignments; based in the practice of recent music in the Western Classical tradition while allowing for the music of other Western styles and traditions to be addressed.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.
Lectures and workshops three hours a week.

MUSI 2605 [0.5 credit]
Choral Conducting
Introduction to the special stylistic features of choral music from the Renaissance to the present as well as to a variety of practical techniques (vocal production, gesture, conducting patterns, diction, etc.).
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program or permission of the instructor.
Lectures three hours a week.

MUSI 2608 [0.5 credit]
Computer Music I: Fundamentals of Electronic Music Production
Introduction to the theory and practice of electronic music creation, focusing on audio editing, synthesis, sampling, beat-making, signal processing, and sound design, using a variety of professional-grade software packages.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 2603 (no longer offered).
Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing, or permission of the instructor.
Lectures three hours a week, plus individual studio time.

MUSI 2609 [0.5 credit]
Computer Music II: Production, Collaboration and Performance
Computer-based music-making with an emphasis on collaborative approaches and performance-oriented tools and techniques. Introduces practices of remixing, live sound manipulation, preparation of original material for performance, and the use of hardware controllers in live performance and real-time musical collaboration using mobile technologies.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 2603 (no longer offered).
Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing, or permission of the instructor.
Lectures three hours a week, plus individual studio time.

MUSI 2700 [0.5 credit]
Theoretical Studies: Common Practice II
A continuation of the study of the harmonic, melodic, rhythmic and formal structures of music of the common-practice period and early twentieth century, with emphasis on chromaticism and the development of analytical and written skills.
Prerequisite(s): MUSI 1701 or permission of the instructor.
Lectures three hours a week.

MUSI 2701 [0.5 credit]
Theoretical Studies: Popular Music Practice
A study of the rhythmic, melodic, harmonic and formal structures of popular musics.
Prerequisite(s): MUSI 1700 or permission of the instructor.
Lectures three hours a week.

MUSI 2703 [0.5 credit]
Theoretical Studies VI: Practical Keyboard Skills
A practical study of rhythm, harmony and melody on the keyboard, with an emphasis on vocal and instrumental accompaniment and the development of improvisation skills in a variety of styles.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.
Labs three hours a week.
MUSI 2710 [0.5 credit]
Theoretical Studies: Aural Training II
A continuation of the study of ear training, sight singing, and basic keyboard skills in relation to classical and popular musics, with emphasis on melodic, harmonic, and formal structures.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1701, MUSI 1710.
Lectures three hours a week.

MUSI 2711 [0.5 credit]
Theoretical Studies: Applied Rhythmic Training II
A continuation of the study of the rhythm of common-practice and world musics, with emphasis on applied performance, movement, and dictation.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1700, MUSI 1711.
Lectures and workshops three hours per week.

MUSI 2900 [0.5 credit]
Performance III
A continuation of MUSI 1901.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and MUSI 1901 with a C+ or higher, or permission of the Discipline.

MUSI 2901 [0.5 credit]
Performance IV
A continuation of MUSI 2900.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and MUSI 2900 with a B- or higher, or permission of the Discipline.

MUSI 2912 [0.0 credit]
Choral Ensemble III
A continuation of MUSI 1913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2913 [0.0 credit]
Choral Ensemble IV
A continuation of MUSI 2912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2914 [0.0 credit]
Instrumental Ensemble III
A continuation of MUSI 1915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week through either the fall or winter term, and participation in concerts.

MUSI 2915 [0.0 credit]
Instrumental Ensemble IV
A continuation of MUSI 2914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3103 [0.5 credit]
Music in Canada
An examination of various issues related to the study of music in Canada and by Canadians, and an examination of various genres of Canadian music, including art music, folk music, popular music, First Peoples music and music of various immigrant groups.
Precludes additional credit for MUSI 3100 (no longer offered).
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3104 [0.5 credit]
Popular Musics of Canada
A survey of popular musics in Canada from early colonial times to the present. The course will consider a wide range of musical styles and genres, along with related cultural and historical issues.
Precludes additional credit for MUSI 3100.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3106 [0.5 credit]
Popular Musics of the World
Popular musics of the world, including those of Africa, Asia, Central and Eastern Europe, Latin America, the Caribbean and Oceania. Special attention to the interaction between some world popular musics and the Western record industry.
Prerequisite(s): second-year standing.
Lectures three hours a week.
MUSI 3107 [0.5 credit]
Classical Indian Music
An introduction to the history and theory of classical Indian music including ragas, instruments, rhythm and improvisation.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing, or permission of the instructor.
Lectures three hours a week.

MUSI 3108 [0.5 credit]
Musics of the Middle East and North Africa
An examination of various musics, devotional traditions, and shifting cultural and art movements in the region, resulting from processes of globalization, political change, and technological innovation. Course sessions will include close and critical discussion of selected texts, audio-visual examples, and ethnomusicological documentary films.
Prerequisite(s): second-year standing.
Seminars three hours a week.

MUSI 3200 [0.5 credit]
Special Topics
Courses focusing on one selected aspect of music, in the area of musicology, theory or composition. The course offerings change from year to year.
Prerequisite(s): permission of the instructor.
Lectures and seminars three hours a week.

MUSI 3201 [0.5 credit]
Special Topics
Courses focusing on one selected aspect of music, in the area of musicology, theory or composition. The course offerings change from year to year.
Prerequisite(s): permission of the instructor.
Lectures and seminars three hours a week.

MUSI 3205 [0.5 credit]
Specialized Studies
Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology, or composition. Course offerings change from year to year.
Prerequisite(s): permission of the department, and a minimum GPA of 9.0 in Music.
Individual instruction.

MUSI 3206 [0.5 credit]
Specialized Studies in Performance
Courses designed for Music Honours students who have acquired an extensive background through performance. Course offerings change from year to year.
Prerequisite(s): permission of the Department, and a minimum CGPA of 9.0 in Music.
Individual instruction.

MUSI 3301 [0.5 credit]
Music and Religion
An examination of the integral role music plays in religion and sacred ritual in different world cultures and religions. Through various case studies, the course broadly considers how sacred soundscapes shape people’s worldviews, identities, and experiences within and outside of their communities.
Also listed as RELI 3301.
Prerequisite(s): second-year standing.
Seminars three hours a week.

MUSI 3302 [0.5 credit]
Music and Gender I
The role of gender in the theory and practice of music in western and non-western cultures.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3303 [0.5 credit]
Introduction to Music Therapy
Literature, practice and theory of music therapy. The use of music (improvisation, the voice, and reception) with various populations, including children and adults with special needs, people in long term care, people with neurological disorders, and in palliative care.
Prerequisite(s): second-year standing or permission of the instructor.
Lectures three hours a week.

MUSI 3400 [0.5 credit]
A History of Opera before 1800
A survey of the development of opera from the beginnings to about 1800. The major monuments of Italian, French, German and English opera, by such composers as Monteverdi, Cavalli, Scarlatti, Purcell, Lully, Gluck, Rameau, Mozart and Haydn.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3401 [0.5 credit]
A History of Opera from 1800 to 1945
A study of romantic and contemporary opera through an examination of selected works from Weber's Der Freischütz to Britten's Peter Grimes, including an investigation of national styles from Wagnerian music drama and Italian verismo to Russian realism and German expressionism.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3402 [0.5 credit]
Film Music
The use of music in film, from the silent era to the present day, studying the techniques, styles and theory of film music through the examination of selected scenes.
Also listed as FILM 3402.
Prerequisite(s): second-year standing.
Lectures three hours a week, screening two hours a week.
MUSI 3403 [0.5 credit]
Music Industries
An introduction to the structure and history of the music industries.
Also listed as COMS 3404.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3405 [0.5 credit]
Musical Theatre
A survey of the styles, works, and artists of the musical theatre genre as well as the artistic elements that comprise musical theatre.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3406 [0.5 credit]
Instrumental Music: Music for Orchestra
Origins and development of orchestral music from its beginnings as an independent form in the 18th century to the present. Major symphonies and symphonic poems by composers like Haydn, Beethoven, Liszt, Brahms, Strauss, and Shostakovich. Brief examination of concerto and ballet music.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3407 [0.5 credit]
Instrumental Music: Chamber Music
History of chamber music and the cultural contexts within which it rose to prominence in Europe and North America in the 18th, 19th and 20th centuries. Genres by representative composers including the sonata, duos, trios, quartets, quintets, sextets, divertimenti, and works for small chamber orchestra.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3408 [0.5 credit]
Music in an Age of Passion, Imagination, and Iconoclasm
This course examines European art music of the nineteenth century, a revolutionary period of socio-political change when inspiration, subjectivity, radical idealism, expressive intensity, cultural nationalism, and the primacy of the individual creative voice were held up as primary aesthetic ideals.
Prerequisite(s): Third-year standing or permission of the instructor.
Seminars three hours a week.

MUSI 3409 [0.5 credit]
Music in an Age of Tumult, Innovation, and Pluralism
A study of western art music of the 20th century. Musical works, compositional techniques and performance practices are examined in the context of musical innovation, social change, political upheaval, and stylistic pluralism in a rapidly changing “modern” world.
Prerequisite(s): Third-year standing or permission of the instructor.
Seminars three hours a week.

MUSI 3602 [0.5 credit]
Composition II
Designed to enable students to develop abilities in the writing of original music. The study and appreciation of modern and contemporary styles and techniques are encouraged.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 3600 (no longer offered).
Prerequisite(s): MUSI 2601, MUSI 2602, and MUSI 2700, or permission of the instructor.
Lectures, workshops, and individual consultations three hours a week.

MUSI 3603 [0.5 credit]
Computer Music Techniques
An introduction to the techniques of sound synthesis primarily through practical experience at the digital synthesizer and computer. The basics of machine operations, software and computer applications to composition and synthesis. Enrolment is limited.
Includes: Experiential Learning Activity
Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing and either MUSI 2608 or MUSI 2609, or permission of the instructor.
Lectures three hours a week, plus individual studio time.

MUSI 3604 [0.5 credit]
Computer Music Projects
Examination of the various applications of digital equipment through the realization of original projects. Students may focus on studio composition, software development or analytic research. Appropriate compositional techniques and problem solving strategies are also discussed. Enrolment is limited.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing, and either MUSI 2603 (no longer offered) or MUSI 2608 or MUSI 2609, or permission of the instructor.
Lectures three hours a week, plus individual studio time.

MUSI 3605 [0.5 credit]
Instrumental Conducting
Introduction to the practice of conducting instrumental music from the Classical era to the present as well as to a variety of practical techniques (rehearsal techniques, gesture, conducting patterns, score study, etc.).
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program or permission of the instructor.

MUSI 3606 [0.5 credit]
Live Sound
Theoretical, practical and technical requirements of audio production in live settings are explored through lectures, demonstrations and workshops. Students develop skills in critical listening, pre-production planning, microphone selection and placement, signal routing, audio processing, monitoring and mixing for live event venues. Prior experience not required.
Includes: Experiential Learning Activity
Lectures and workshops three hours a week.
MUSI 3700 [0.5 credit]  
Theoretical Studies: Seminar in Theory and Analysis  
Selected topic in music theory. Topics will change yearly and may include: methods of music analysis, analysis of selected works, styles and structures of common practice or post common practice period, music, modal, tonal, or post-tonal counterpoint, history of music theory. 
Precludes additional credit for MUSI 3500. 
Prerequisite(s): MUSI 2700 or permission of the instructor. 
Seminars three hours a week.

MUSI 3701 [0.5 credit]  
Theoretical Studies: Jazz Styles and Structures  
Techniques of arranging and composition for small and large ensembles will be studied through the examination of selected works drawn from the jazz repertoire. Works will be selected for stylistic and theoretical analysis, for exercises in aural recognition, and for arranging purposes. 
Includes: Experiential Learning Activity  
Precludes additional credit for MUSI 4203 (taken in 1994-95) or MUSI 4204 (taken in 1995-96). 
Prerequisite(s): MUSI 2701 or permission of the instructor.  
Workshops three hours a week.

MUSI 3702 [0.5 credit]  
Introduction to Physics and Psychoacoustics of Music  
Basic topics in physics and psychoacoustics, with an emphasis on those concepts that are most useful for music performance, analysis, composition, and musicology.  
Prerequisite(s): second-year standing. 
Lectures three hours a week.

MUSI 3703 [0.5 credit]  
Improvisation in Theory and Practice  
Selected forms of improvisation from diverse musical and cultural traditions. In addition to weekly seminar meetings, the class will engage in experiential forms of learning by actively improvising in a weekly performance-oriented seminar. 
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing.  
Discussion and performance seminars three hours a week.

MUSI 3900 [0.5 credit]  
Performance V  
A continuation of MUSI 2901.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in B. Mus. and MUSI 2901 with a B- or higher, or permission of the Discipline.

MUSI 3901 [0.5 credit]  
Performance VI  
A continuation of MUSI 3900.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in the B.Mus. program and MUSI 3900 with a B- or higher, or permission of the Discipline.

MUSI 3912 [0.0 credit]  
Choral Ensemble V  
A continuation of MUSI 2913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns. 
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in the B.Mus. program and permission of the Choral Director. 
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3913 [0.0 credit]  
Choral Ensemble VI  
A continuation of MUSI 3912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns. 
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in the B.Mus. program and permission of the Choral Director. 
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3914 [0.0 credit]  
Instrumental Ensemble V  
A continuation of MUSI 2915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in the B.Mus. program and permission of the Ensemble Director. 
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3915 [0.0 credit]  
Instrumental Ensemble VI  
A continuation of MUSI 3914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns. 
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in the B.Mus. program and permission of the Ensemble Director. 
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4000 [0.5 credit]  
Performance VII  
This is an optional performance course for B.Mus. students with high academic standing.  
Includes: Experiential Learning Activity  
Precludes additional credit for MUSI 4900, MUSI 4901, MUSI 4907.  
Prerequisite(s): fourth-year standing in B.Mus., MUSI 3901, A- or higher average in second- and third-year MUSI performance courses, and permission of the Music performance supervisor. 
Individual instruction.
MUSI 4001 [0.5 credit]
Performance VIII
This is an optional performance course for B.Mus. students with high academic standing.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4002, MUSI 4003, MUSI 4900 (no longer offered), MUSI 4901, MUSI 4907.
Prerequisite(s): fourth-year standing in B.Mus. standing, MUSI 4000 with A- or higher, and permission of the Music performance supervisor.
Individual instruction.

MUSI 4002 [0.5 credit]
Graduating Demo Recording
A graduation recording of substantial duration arranged in consultation with the discipline. A proposal must be submitted one week before the last day for course changes. All recording costs must be borne by the student.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4001, MUSI 4003, MUSI 4900 (no longer offered), MUSI 4901, MUSI 4907.
Prerequisite(s): fourth-year standing in B.Mus., MUSI 4000 with a grade of A- or higher, and permission of both the relevant associate music instructor and the music performance supervisor.
Individual instruction.

MUSI 4003 [0.5 credit]
Graduating Recital
Public recital arranged in consultation with the Supervisor of Performance and Practical Studies. An outline of the program must be submitted one week before the last day for course changes.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4001, MUSI 4002, MUSI 4900, MUSI 4901, MUSI 4907.
Prerequisite(s): fourth-year standing in B.Mus., MUSI 4000 with A- or higher, and permission of both the relevant associate music instructor and the music performance supervisor.
Individual instruction.

MUSI 4005 [0.5 credit]
Issues in Jazz Studies
An examination of key issues in the study of jazz including history/historiography, gender, genre, race, politics, identity and performance.
Prerequisite(s): MUSI 2005 and third-year standing.

MUSI 4006 [0.5 credit]
Issues in the Study of Popular Music
An introduction to current issues in the study of popular music. The course will be organized around a series of case studies.
Prerequisite(s): third-year standing, MUSI 1002, and at least one of MUSI 2005, 2006, or 2007.
Seminars three hours a week.

MUSI 4007 [0.5 credit]
The Composer in Context
Examination of the life and music of a selected composer, and the historical, social, cultural, and political factors that shaped the context within which they worked. Focus on history, biography, musical style and analysis.
Prerequisite(s): Fourth-year standing or permission of the instructor.
Lectures and seminars three hours a week.

MUSI 4102 [0.5 credit]
Theory and Methods in Ethnomusicology
Selected readings and discussion of major works in ethnomusicology, focusing on schools of thought and contemporary issues. Introduction to a variety of methods and strategies for ethnomusicological research, including field work, musical transcription and data analysis.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing, or permission of the instructor.
Seminars three hours a week.

MUSI 4103 [0.5 credit]
Ethnomusicology of Canadian Traditions
Issues of anthropological, sociological, and analytical significance are examined in the context of selected developments in folklore and ethnomusicological research on Canadian traditions.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as MUSI 5015, for which additional credit is precluded.
Seminars three hours a week.

MUSI 4104 [0.5 credit]
First Peoples Music in Canada
The context and significance of musical expressions of selected Canadian Indigenous groups and the contributions of individuals in the creation of music and meaning in First Peoples' communities.
Prerequisite(s): fourth-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as MUSI 5016, for which additional credit is precluded.
Seminars three hours a week.

MUSI 4105 [0.5 credit]
Issues and Processes in African Music
Surveying five different geographic regions of Africa, traditional and modern musical styles will be studied through the lens of the global, local and social issues surrounding them.
Prerequisite(s): third year standing, or permission of the instructor.
Lectures and seminars three hours a week.
MUSI 4200 [0.5 credit]
**Special Topics**
Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. The course offerings change from year to year.
Prerequisite(s): permission of the instructor.
Lectures and seminars three hours a week.

MUSI 4201 [0.5 credit]
**Special Topics**
Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. Course offerings change from year to year.
Prerequisite(s): permission of the instructor.
Lectures and seminars three hours a week.

MUSI 4205 [0.5 credit]
**Specialized Studies**
Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology, or composition. Course offerings change from year to year.
Prerequisite(s): permission of the department, and a minimum CGPA of 9.0 in Music.
Individual instruction.

MUSI 4206 [0.5 credit]
**Specialized Studies in Performance**
Courses designed for Music Honours students who have acquired an extensive background through performance. Course offerings change from year to year.
Prerequisite(s): permission of the department, and a minimum CGPA of 9.0 in Music.
Individual instruction.

MUSI 4209 [1.0 credit]
**Specialized Studies**
A course designed for Music Honours students who have acquired an extensive background through courses in theory, musicology or composition. Course offerings change from year to year.
Prerequisite(s): permission of the instructor.

MUSI 4303 [0.5 credit]
**Music and Gender II**
The relationship between the social and formal organization of music and the social and formal organization of sexual difference. The role of music in the social construction of gender; the role of gender in the determination of musical style and taste.
Precludes additional credit for MUSI 3303 or MUSI 4204 (taken in 1992-93).
Prerequisite(s): MUSI 3302 or permission of the instructor.
Seminars three hours a week.

MUSI 4304 [0.5 credit]
**Music and Globalization**
Examining music’s role in the multifaceted and complex processes of globalization. Drawing on case studies of “world musics”, this course explores how sound and music negotiate histories of post/colonialism, cultural and economic imperialism, and constructions of sameness and difference in “world music” contexts.
Prerequisite(s): fourth-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as MUSI 5017, for which additional credit is precluded.
Seminars three hours a week.

MUSI 4306 [0.5 credit]
**Music and Wellbeing in a Global Context**
An examination of the ways in which music contributes to mental, social and physical wellbeing throughout the world, drawing from the fields of neuroscience, medical ethnomusicology, community music and cross-cultural studies.
Prerequisite(s): fourth-year standing or permission of the instructor.
Seminars three hours a week.

MUSI 4307 [0.5 credit]
**Music in an Age of Power, Plague, and Courtly Love**
The music of the “dark ages” is illuminated in the context of politics, spectacle, devotion, celebration, compositional process, manuscript culture, dissemination, musical notation, plague, and courtly love. “Medievalism” is examined as an aesthetic of the era (ca. 400-1400) and as reinterpreted in our modern world.
Prerequisite(s): Fourth-year standing or permission of the instructor.
Seminars three hours a week.

MUSI 4308 [0.5 credit]
**Music in an Age of Devotion, Seduction, and Rebirth**
This course brings to life the Renaissance (1400-1600), when music played a vital role in lavish courts, grand cathedrals, and vibrant cities. Madrigals, masses, and motets are examined in the context of politics, religion, gender, manuscript and print culture, rhetoric, art, and architecture.
Prerequisite(s): Fourth-year standing or permission of the instructor.
Seminars three hours a week.

MUSI 4602 [0.5 credit]
**Composition III**
A continuation of MUSI 3602, focusing on the development of creative individual approaches to music composition.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 3600 (no longer offered).
Prerequisite(s): MUSI 3602, or permission of the instructor.
Lectures, workshops, and individual consultations three hours a week.
MUSI 4700 [0.5 credit]
Theoretical Studies: Advanced Seminar in Theory and Analysis
A study of a selected topic in music theory. Topics will change yearly and may include: methods of music analysis; analysis of selected works; styles and structures of common practice or post common practice period music; modal, tonal, or post-tonal counterpoint; history of music theory.
Prerequisite(s): MUSI 2700 or permission of the instructor.
Seminars three hours a week.

MUSI 4701 [0.5 credit]
Introduction to Jazz Arranging
The art of arranging for small and large jazz ensembles is introduced through analysis of recordings by artists such as Duke Ellington, Fletcher Henderson, Count Basie, Rob McConnell, and Maria Schneider. Topics may include 2-, 3-, and 4-voice writing in a jazz idiom.
Prerequisite(s): MUSI 3701 or permission of the instructor.
Seminars three hours a week.

MUSI 4702 [0.5 credit]
Topics in Music Perception and Cognition
Selected advanced topics in the perception and cognition of music. Where appropriate, emphasis will be placed upon areas of overlap between psychological research and issues in aesthetics and cultural theory.
Prerequisite(s): third-year standing and MUSI 3702, or permission of the department.
Seminars three hours a week.

MUSI 4704 [0.5 credit]
Tonal Counterpoint
This course deals with the development of writing skills and knowledge of counterpoint as manifest in the Baroque era. Topics may include invention, canon, fugue, dance forms, the compositional language of J. S. Bach, and contrapuntal techniques in the late 18th century and beyond.
Prerequisite(s): MUSI 2700, or permission of the instructor. Lectures and seminars three hours a week.

MUSI 4705 [0.5 credit]
Post-Tonal Theory and Analysis
Fundamentals of post-tonal music theory and analysis. Neo-tonal, atonal, twelve-tone and third-stream jazz. Students will develop the critical skills to understand these theoretical tools and be conversant with some of the aesthetic precepts associated with them.
Prerequisite(s): MUSI 2700 or permission of the instructor. Lectures and seminars three hours a week.

MUSI 4800 [0.5 credit]
Practicum in Music
Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.
Includes: Experiential Learning Activity
Prerequisite(s): Honours Music registration with third- or fourth-year standing and a B+ or better average in Music courses; and permission of the Practica Supervisor.

MUSI 4801 [0.5 credit]
Practicum in Music
Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.
Includes: Experiential Learning Activity
Prerequisite(s): Honours Music registration with third- or fourth-year standing and a B+ or better average in Music courses; and permission of the Practica Supervisor.

MUSI 4906 [1.0 credit]
Honours Portfolio in Composition
The course requires the composition of an original work of substantial proportions, with an accompanying analytical paper. Application to the Discipline for permission to register must be received by September 1.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4600.
Prerequisite(s): fourth-year standing, MUSI 3600 and permission of the Discipline.

MUSI 4908 [1.0 credit]
Honours Essay in Musicology
An Honours research essay of approximately 50 pages. A written outline of the project must be submitted to the Honours committee changes by the first day of classes.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing, A- or higher average, and permission of the Discipline.

MUSI 4909 [1.0 credit]
Portfolio in New Media
The course requires the creation of an original work (or works) of substantial proportions using applications in the electronic studios. A high level of independence and originality will be required. Requests to the Discipline for permission to register must be received by September 1.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.
MUSI 4912 [0.0 credit]
Choral Ensemble VII
A continuation of MUSI 3913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4913 [0.0 credit]
Choral Ensemble VIII
A continuation of MUSI 4912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4914 [0.0 credit]
Instrumental Ensemble VII
A continuation of MUSI 3915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4915 [0.0 credit]
Instrumental Ensemble VIII
A continuation of MUSI 4914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

Nanoscience

This section presents the requirements for programs in:

• Nanoscience B.Sc. Honours

Program Requirements

Nanoscience

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)

1. 5.0 credits in:
   - CHEM 1001 [0.5] General Chemistry I
   - CHEM 1002 [0.5] General Chemistry II
   - CHEM 2103 [0.5] Physical Chemistry I

2. 1.0 credit from:
   - CHEM 2203 [0.5] Organic Chemistry I
   - CHEM 2204 [0.5] Organic Chemistry II
   - CHEM 2302 [0.5] Analytical Chemistry I
   - CHEM 2303 [0.5] Analytical Chemistry II

3. 1.0 credit from:
   - CHEM 4103 [0.5] Surface Chemistry and Nanostructures
   - CHEM 4104 [0.5] Physical Methods of Nanotechnology
   - CHEM 4201 [0.5] Macromolecular Nanotechnology

4. 3.5 credits in:
   - ELEC 2501 [0.5] Circuits and Signals
   - ELEC 2507 [0.5] Electronics I
   - ELEC 3908 [0.5] Physical Electronics
   - ELEC 3105 [0.5] Electromagnetic Fields
   - ELEC 4609 [0.5] Integrated Circuit Design and Fabrication
   - ELEC 4700 [0.5] The Physics and Modeling of Advanced Devices and Technologies
   - ELEC 4704 [0.5] Nanoscale Technology and Devices

5. 1.0 credit from:
   - ELEC 2607 [0.5] Switching Circuits
   - ELEC 3500 [0.5] Digital Electronics
   - ELEC 3509 [0.5] Electronics II
   - ELEC 3909 [0.5] Electromagnetic Waves

B. Credits Not Included in the Major CGPA (8.5 credits)

6. 2.5 credits in:
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or Science
   - MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
   - STAT 3502 [0.5] Probability and Statistics

7. 1.0 credits in:
   - PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics
   - PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

8. 1.5 credits in Advanced Science Faculty Electives:

9. 0.5 credit in Science Continuation (not CHEM)

10. 0.5 credit in:
   - NSCI 1000 [0.5] Seminar in Science
   (or approved courses outside the faculties of Science and Engineering and Design)

11. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design
12. 1.0 credit in free electives 1.0

Total Credits 20.0

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Biochemistry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOC 4001 [0.5]</td>
<td>Methods in Biochemistry</td>
</tr>
<tr>
<td>BIOC 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Biology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemistry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Earth Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
</tr>
<tr>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2404 [0.5]</td>
<td>Engineering Geoscience</td>
</tr>
</tbody>
</table>
Course Categories for B.Sc. Programs

**Science Geography Courses**
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth's Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography
- GEOG 3102 [0.5] Geomorphology
- GEOG 3103 [0.5] Watershed Hydrology
- GEOG 3104 [0.5] Principles of Biogeography
- GEOG 3105 [0.5] Climate and Atmospheric Change
- GEOG 3106 [0.5] Aquatic Science and Management
- GEOG 3108 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 4005 [0.5] Directed Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Micrometeorology
- GEOG 4108 [0.5] Permafrost

**Science Psychology Courses**
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 2307 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II

**Science Continuation Courses**
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science)
- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics)
- STAT (Statistics)

**Science Faculty Electives**
Science Faculty Electives are courses at the 1000-4000 level chosen from:

- BIOC (Biochemistry)
Free Electives

Biol (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as electives
CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
COMP (Computer Science) except COMP 1001
ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use
ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

Food (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty
Electives list above.

Approved Courses Outside the Faculties of Science
and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social
Sciences, the Faculty of Public Affairs, and the
Sprott School of Business are approved as Arts or
Social Sciences courses EXCEPT FOR: All Science
Geography courses (see list above), all Geomatics
(GEOM) courses, all Science Psychology courses
(see list above), NSCI 1000 may be used as an
Approved Course Outside the Faculties of Science and
Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it
is not prohibited (see below). Students are expected to
comply with prerequisite requirements and enrolment
restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any
B.Sc. Program

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title &amp; Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 4810</td>
<td>Education Research in Biology</td>
</tr>
<tr>
<td>CHEM 1003</td>
<td>The Chemistry of Food, Health and Drugs</td>
</tr>
<tr>
<td>CHEM 1004</td>
<td>Drugs and the Human Body</td>
</tr>
<tr>
<td>CHEM 1007</td>
<td>Chemistry of Art and Artifacts</td>
</tr>
<tr>
<td>ERTH 1010</td>
<td>Our Dynamic Planet Earth</td>
</tr>
<tr>
<td>ERTH 1011</td>
<td>Evolution of the Earth</td>
</tr>
<tr>
<td>ERTH 2415</td>
<td>Natural Disasters</td>
</tr>
<tr>
<td>ISCI 1001</td>
<td>Introduction to the Environment</td>
</tr>
<tr>
<td>ISCI 2000</td>
<td>Natural Laws</td>
</tr>
<tr>
<td>ISCI 2002</td>
<td>Human Impacts on the Environment</td>
</tr>
<tr>
<td>MATH 0107</td>
<td>Algebra and Geometry</td>
</tr>
<tr>
<td>PHYS 1901</td>
<td>Planetary Astronomy</td>
</tr>
<tr>
<td>PHYS 1902</td>
<td>From Our Star to the Cosmos</td>
</tr>
<tr>
<td>PHYS 1905</td>
<td>Physics Behind Everyday Life</td>
</tr>
<tr>
<td>PHYS 2903</td>
<td>Physics Towards the Future</td>
</tr>
</tbody>
</table>

Prohibited Courses

The following courses are not acceptable for credit in any
B.Sc. program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title &amp; Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1001</td>
<td>Introduction to Computational Thinking for Arts and Social Science Students</td>
</tr>
<tr>
<td>MATH 0005</td>
<td>Precalculus: Functions and Graphs</td>
</tr>
<tr>
<td>MATH 0006</td>
<td>Precalculus: Trigonometric Functions and Complex Numbers</td>
</tr>
<tr>
<td>MATH 1009</td>
<td>Mathematics for Business</td>
</tr>
<tr>
<td>MATH 1119</td>
<td>Linear Algebra: with Applications to Business</td>
</tr>
<tr>
<td>MATH 1401</td>
<td>Elementary Mathematics for Economics I</td>
</tr>
<tr>
<td>MATH 1402</td>
<td>Elementary Mathematics for Economics II</td>
</tr>
</tbody>
</table>

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System.
Holding the minimum admission requirements only
establishes eligibility for consideration. The cut-off
averages for admission may be considerably higher than
the minimum. See also the General Admission and
Procedures section of this Calendar. An overall average
of at least 70% is normally required to be considered for
admission. Some programs may also require specific
course prerequisites and prerequisite averages and/or
supplementary admission portfolios. Higher averages
are required for admission to programs for which the
demand for places by qualified applicants exceeds the
number of places available. The overall average required
for admission is determined each year on a program by
program basis. Consult admissions.carleton.ca for further
details.

Note: Courses listed as recommended are not
mandatory for admission. Students who do not follow
the recommendations will not be disadvantaged in the
admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours Program

First Year

The Ontario Secondary School Diploma (OSSD) or
equivalent including a minimum of six 4U or M courses.
For most programs including Biochemistry, Bioinformatics,
Biotechnology, Chemistry, Combined Honours in Biology
and Physics, Chemistry and Physics, Computational
Biochemistry, Food Science, Nanoscience, Neuroscience,
Neuroscience and Mental Health, and Psychology, the six
4U or M courses must include Advanced Functions and
two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

**Specific Honours Admission Requirements**

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

**Advanced Standing**

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**B.Sc. Major Program**

**B.Sc. Program**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Neuroscience**

This section presents the requirements for programs in:

- Neuroscience and Mental Health B.Sc. Honours
- Neuroscience and Mental Health B.Sc. Major
- Neuroscience and Mental Health B.Sc.
- Neuroscience and Biology B.Sc. Combined Honours
- Minor in Neuroscience and Mental Health

**Program Requirements**

**Course Categories for B.Sc. Programs**

The program descriptions for B.Sc. Combined Honours Neuroscience make use of the course categories defined for all B.Sc. programs (see Academic Regulations for the Bachelor of Science Degree):

- Science Faculty Electives
- Science Continuation Courses
- Free Electives

**Neuroscience and Mental Health**

**B.Sc. Honours (20.0 credits)**

**A. Credits Included in the Major (10.5 credits)**

1. **5.5 credits in:**

   - NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease
   - NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease
   - NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience
   - NEUR 2002 [0.5] Introduction to Statistics in Neuroscience
   - NEUR 2201 [0.5] Cellular and Molecular Neuroscience
   - NEUR 2202 [0.5] Neurodevelopment and Plasticity
<table>
<thead>
<tr>
<th>Course Code</th>
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<td>Neuropharmacology</td>
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<td>Sensory and Motor Neuroscience</td>
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<td>NEUR 3207</td>
<td>Systems Neuroscience</td>
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<td>Foundations of Biology I</td>
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<tr>
<td>NEUR 3303</td>
<td>The Neuroscience of Consciousness</td>
</tr>
<tr>
<td>NEUR 3304</td>
<td>Hormones and Behaviour</td>
</tr>
<tr>
<td>NEUR 3401</td>
<td>Environmental Toxins and Mental Health</td>
</tr>
<tr>
<td>NEUR 3402</td>
<td>Impact of Lifestyle and Social Interactions on Mental Health</td>
</tr>
<tr>
<td>NEUR 3403</td>
<td>Stress and Mental Health</td>
</tr>
<tr>
<td>NEUR 3501</td>
<td>Neurodegeneration and Aging</td>
</tr>
<tr>
<td>NEUR 3502</td>
<td>Neurodevelopment Determinants of Mental Health</td>
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<tr>
<td>NEUR 4301</td>
<td>Neurobiology of Energy Homeostasis</td>
</tr>
<tr>
<td>NEUR 4302</td>
<td>Sex and the Brain</td>
</tr>
<tr>
<td>NEUR 4303</td>
<td>Indigenous Health &amp; Mental Health</td>
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<tr>
<td>NEUR 4305</td>
<td>Immune-Brain Interactions</td>
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<tr>
<td>NEUR 4306</td>
<td>The Neural Basis of Addiction</td>
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<tr>
<td>NEUR 4600</td>
<td>Advanced Lab in Neuroanatomy</td>
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<td>NEUR 4200</td>
<td>Seminar on Current Advances in Neuroscience</td>
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<td>or BIOL 2200</td>
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<tr>
<td>BIOL 2107</td>
<td>Fundamentals of Genetics</td>
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**Total Credits:** 20.0

### Neuroscience and Mental Health

#### B.Sc. Major (20.0 credits)

**A. Credits Included in the Major CGPA (10.5 credits)**

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<tr>
<td>NEUR 4600</td>
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</tbody>
</table>

**Total Credits:** 20.0

### Science Continuation Courses

**1. 1.0 credit in:** Science Continuation Courses

**2. 1.0 credit in:** approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)

**3. 3.0 credits in:** free electives.

**Total Credits:** 20.0
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<tr>
<td>NEUR 3502 [0.5]</td>
<td>Neurodevelopmental Determinants of Mental Health</td>
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</tbody>
</table>

**Neuroscience and Biology**

**B.Sc. Combined Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (14.5 credits)**

1. **5.5 credits in:**
   - NEUR 1202 [0.5] | Neuroscience of Mental Health and Psychiatric Disease |
   - NEUR 1203 [0.5] | Neuroscience of Mental Health and Neurological Disease |
   - NEUR 2001 [0.5] | Introduction to Research Methods in Neuroscience |
   - NEUR 2002 [0.5] | Introduction to Statistics in Neuroscience |
   - NEUR 2201 [0.5] | Cellular and Molecular Neuroscience |
   - NEUR 2202 [0.5] | Neurodevelopment and Plasticity |
   - NEUR 3204 [0.5] | Neuropharmacology |
   - NEUR 3206 [0.5] | Sensory and Motor Neuroscience |
   - NEUR 3207 [0.5] | Systems Neuroscience |
2. **3.0 credits in:**
   - BIOL 1103 [0.5] | Foundations of Biology I |
   - BIOL 1104 [0.5] | Foundations of Biology II |
   - NEUR 3301 [0.5] | Genetics of Mental Health |
   - NEUR 3303 [0.5] | The Neuroscience of Consciousness |
   - NEUR 3304 [0.5] | Hormones and Behaviour |
   - NEUR 3401 [0.5] | Environmental Toxins and Mental Health |
   - NEUR 3402 [0.5] | Impact of Lifestyle and Social Interactions on Mental Health |
   - NEUR 3403 [0.5] | Stress and Mental Health |
   - NEUR 3501 [0.5] | Neurodegeneration and Aging |
3. **1.5 credits in BIOL or BIOC at the 3000 level or above**
4. **1.0 credit from:**
   - NEUR 3301 [0.5] | Genetics of Mental Health |
   - NEUR 3303 [0.5] | The Neuroscience of Consciousness |
   - NEUR 3304 [0.5] | Hormones and Behaviour |
   - NEUR 3401 [0.5] | Environmental Toxins and Mental Health |
   - NEUR 3402 [0.5] | Impact of Lifestyle and Social Interactions on Mental Health |
   - NEUR 3403 [0.5] | Stress and Mental Health |
   - NEUR 3501 [0.5] | Neurodegeneration and Aging |
### Minor in Neuroscience and Mental Health (4.0 credits)

The Minor in Neuroscience is available to students registered in degree programs other than those offered by the Department of Neuroscience.

#### Requirements:

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<thead>
<tr>
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<td>NEUR 4306 [0.5]</td>
<td>The Neural Basis of Addiction</td>
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</table>

#### Total Credits: 4.0

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Students enrolled in the Neuroscience and Mental Health programs should consult with the Department of Neuroscience when planning their program or selecting courses. Those enrolled in the Neuroscience Combined Honours program should consult with either the Department of Biology or the Department of Neuroscience.

### B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

#### Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Biochemistry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOC 4001 [0.5]</td>
<td>Methods in Biochemistry</td>
</tr>
<tr>
<td>BIOC 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
</tr>
<tr>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
</tr>
<tr>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
</tr>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemistry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
</tr>
<tr>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
</tr>
<tr>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
</tr>
<tr>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Earth Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
</tr>
<tr>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
</tr>
<tr>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
</tr>
<tr>
<td>ERTH 2404 [0.5]</td>
<td>Engineering Geoscience</td>
</tr>
<tr>
<td>ERTH 2802 [0.5]</td>
<td>Field Geology I</td>
</tr>
<tr>
<td>ERTH 3111 [0.5]</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
</tr>
<tr>
<td>ERTH 3112 [0.5]</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
</tr>
<tr>
<td>ERTH 3204 [0.5]</td>
<td>Mineral Deposits</td>
</tr>
<tr>
<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
</tr>
<tr>
<td>ERTH 3806 [0.5]</td>
<td>Structural Geology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Food Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD 3001 [0.5]</td>
<td>Food Chemistry</td>
</tr>
<tr>
<td>FOOD 3002 [0.5]</td>
<td>Food Analysis</td>
</tr>
<tr>
<td>FOOD 3005 [0.5]</td>
<td>Food Microbiology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geography</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 1010 [0.5]</td>
<td>Global Environmental Systems</td>
</tr>
<tr>
<td>GEOG 3108 [0.5]</td>
<td>Soil Properties</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Neuroscience</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUR 3206 [0.5]</td>
<td>Sensory and Motor Neuroscience</td>
</tr>
<tr>
<td>NEUR 3207 [0.5]</td>
<td>Systems Neuroscience</td>
</tr>
<tr>
<td>NEUR 4600 [0.5]</td>
<td>Advanced Lab in Neuroanatomy</td>
</tr>
</tbody>
</table>
**Course Categories for B.Sc. Programs**

### Science Geography Courses
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth's Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography
- GEOG 3102 [0.5] Geomorphology
- GEOG 3103 [0.5] Watershed Hydrology
- GEOG 3104 [0.5] Principles of Biogeography
- GEOG 3105 [0.5] Climate and Atmospheric Change
- GEOG 3106 [0.5] Aquatic Science and Management
- GEOG 3108 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 4005 [0.5] Directed Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Microclimatology
- GEOG 4108 [0.5] Permafrost

### Science Psychology Courses
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 2307 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II

### Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
- ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 2903
- Science Geography Courses (see list above)
- Science Psychology Courses (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

### Science Faculty Electives
Science Faculty Electives are courses at the 1000-4000 level chosen from:
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives.
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering
- ENSC 2001
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
Science Geography (see list above)
Science Psychology (see list above)
STAT (Statistics)
TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

### Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

### Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above), NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

### Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

### Courses Allowable Only as Free Electives in any B.Sc. Program

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 4810 [0.5]</td>
<td>Education Research in Biology</td>
</tr>
<tr>
<td>CHEM 1003 [0.5]</td>
<td>The Chemistry of Food, Health and Drugs</td>
</tr>
<tr>
<td>CHEM 1004 [0.5]</td>
<td>Drugs and the Human Body</td>
</tr>
<tr>
<td>CHEM 1007 [0.5]</td>
<td>Chemistry of Art and Artifacts</td>
</tr>
<tr>
<td>ERTH 1010 [0.5]</td>
<td>Our Dynamic Planet Earth</td>
</tr>
<tr>
<td>ERTH 1011 [0.5]</td>
<td>Evolution of the Earth</td>
</tr>
<tr>
<td>ERTH 2415 [0.5]</td>
<td>Natural Disasters</td>
</tr>
<tr>
<td>ISCI 1001 [0.5]</td>
<td>Introduction to the Environment</td>
</tr>
<tr>
<td>ISCI 2000 [0.5]</td>
<td>Natural Laws</td>
</tr>
<tr>
<td>ISCI 2002 [0.5]</td>
<td>Human Impacts on the Environment</td>
</tr>
<tr>
<td>MATH 0107 [0.5]</td>
<td>Algebra and Geometry</td>
</tr>
<tr>
<td>PHYS 1901 [0.5]</td>
<td>Planetary Astronomy</td>
</tr>
<tr>
<td>PHYS 1902 [0.5]</td>
<td>From Our Star to the Cosmos</td>
</tr>
<tr>
<td>PHYS 1905 [0.5]</td>
<td>Physics Behind Everyday Life</td>
</tr>
<tr>
<td>PHYS 2903 [0.5]</td>
<td>Physics Towards the Future</td>
</tr>
</tbody>
</table>

### Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1001 [0.5]</td>
<td>Introduction to Computational Thinking for Arts and Social Science Students</td>
</tr>
<tr>
<td>MATH 0005 [0.5]</td>
<td>Precalculus: Functions and Graphs</td>
</tr>
<tr>
<td>MATH 0006 [0.5]</td>
<td>Precalculus: Trigonometric Functions and Complex Numbers</td>
</tr>
<tr>
<td>MATH 1009 [0.5]</td>
<td>Mathematics for Business</td>
</tr>
<tr>
<td>MATH 1119 [0.5]</td>
<td>Linear Algebra: with Applications to Business</td>
</tr>
<tr>
<td>MATH 1401 [0.5]</td>
<td>Elementary Mathematics for Economics I</td>
</tr>
<tr>
<td>MATH 1402 [0.5]</td>
<td>Elementary Mathematics for Economics II</td>
</tr>
</tbody>
</table>

### Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

### Undergraduate Co-operative Education Policy

#### Admission Requirements

Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

### Participation Requirements

#### COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

### Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students’ Carleton email account.

### Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job.
It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts. While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student has applied.

Students are advised to discuss the application process with the International Student Services Office.

B.Sc. Honours Neuroscience, Neuroscience and Mental Health: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Neuroscience and Neuroscience and Mental Health students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: NEUR 3999

Work-Study Pattern:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
</tr>
<tr>
<td>Fall</td>
<td>S</td>
<td>Fall</td>
<td>S</td>
<td>Fall</td>
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<tr>
<td>Winter</td>
<td>S</td>
<td>Winter</td>
<td>S</td>
<td>Winter</td>
</tr>
<tr>
<td>Summer **</td>
<td>OW</td>
<td>Summer **</td>
<td>W</td>
<td>Summer</td>
</tr>
</tbody>
</table>

Legend:
- S: Study
- W: Work
- O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees
- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements
B.Sc. Honours Program

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

B.Sc. Major Program

B.Sc. Program

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final
5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Neuroscience (NEUR) Courses

NEUR 1202 [0.5 credit]

Neuroscience of Mental Health and Psychiatric Disease

Clinical symptoms of psychiatric disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include depressive disorders, schizophrenia, autism, ADHD, anorexia, narcolepsy, substance abuse, and personality disorders.

Precludes additional credit for NEUR 1201 (no longer offered).
Lecture three hours a week.

NEUR 1203 [0.5 credit]

Neuroscience of Mental Health and Neurological Disease

Clinical symptoms of neurological disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include stroke, multiple sclerosis, migraine, seizure disorder, Parkinson’s disease, ALS, chronic pain, Alzheimer’s disease and concussion.
Lectures three hours a week.

NEUR 2001 [0.5 credit]

Introduction to Research Methods in Neuroscience

A general introduction to research process within neuroscience. Topics covered include research strategies, methods, and techniques; basic descriptive statistics; research communication; and responsible scientific conduct.
Prerequisite(s): second-year standing.
Lecture three hours a week.

NEUR 2002 [0.5 credit]

Introduction to Statistics in Neuroscience

A general introduction to statistical techniques employed within contemporary neuroscience. Topics covered include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square).
Prerequisite(s): PSYC 2001 or NEUR 2001.
Lectures three hours a week, online labs/tutorials.

NEUR 2003 [0.5 credit]

Introduction to Techniques in Neuroscience

Introduction to common techniques used in neuroscience research. Brain imaging, animal behaviour, electrophysiology, immunohistochemistry and microscopy, genomics, transgenics, cell culture, and DSM-IV-based clinical assessment.
Prerequisite(s): one of PSYC 1001, NEUR 1201, NEUR 1202 or NEUR 1203.
Lectures three hours a week.

NEUR 2004 [0.5 credit]

Fundamentals of Scientific Writing in Neuroscience

Introduction to various forms of scientific writing appropriate to neuroscience, with a focus in fundamental skills in scientific writing.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in a Neuroscience program and one of NEUR 1201, NEUR 1202 or NEUR 1203.
Lectures and workshops three hours a week.

NEUR 2201 [0.5 credit]

Cellular and Molecular Neuroscience

Core principles in cellular and molecular neuroscience, including signal transmission along and between neurons, ion channels and transporters, intracellular signaling pathways, and regulation of gene expression.
Precludes additional credit for PSYC 3200 (no longer offered) and NEUR 3200 (no longer offered).
Prerequisite(s): Either NEUR 1201 and NEUR 1203, or NEUR 1202 and NEUR 1203, or both BIOL 1103 and BIOL 1104.
Lectures three hours a week, online labs.
NEUR 2202 [0.5 credit]
Neurodevelopment and Plasticity
Core principles in nervous system development from embryogenesis to plasticity in the adult brain. Topics include neural induction, neurogenesis, apoptosis, neuronal migration and axon growth, synaptogenesis and synaptic pruning both under normal conditions and in psychopathology.
Precludes additional credit for PSYC 3200 (no longer offered) and NEUR 3200 (no longer offered).
Prerequisite(s): NEUR2201.
Lectures three hours a week, online labs.

NEUR 2801 [0.5 credit]
Neuroscience and Creativity
Abnormal brain function associated with mental illness or substance abuse has been commonly depicted in or been the inspiration for important cultural works including movies, music, paintings and literature. The neurobiological basis of creativity in individuals with and without mental illness.
Prerequisite(s): one of PSYC 1001, NEUR 1201, NEUR 1202 or NEUR 1203.
Lectures and seminars three hours a week.

NEUR 3001 [0.5 credit]
Data Analysis in Neuroscience I
Introducing various software for analyzing neuroscience data. Dealing with real data, drawing graphs, application of descriptive and inferential statistics through the general linear model, assumptions of parametric tests, robust statistics, confidence intervals, correlations, use of appropriate statistical methods and interpretation of results.
Includes: Experiential Learning Activity
Prerequisite(s): PSYC 2001 and PSYC 2002, or NEUR 2001 and NEUR 2002.
Lectures three hours a week, online labs/workshops.

NEUR 3002 [0.5 credit]
Data Analysis in Neuroscience II
Use of software for analyzing neuroscience data. Statistical techniques typically include nonparametric tests, t tests, and various forms of both ANOVA and regression including robust statistical tests, with a focus on the practical application of appropriate statistical methods and interpretation of results.
Includes: Experiential Learning Activity
Prerequisite(s): NEUR 3001.
Lectures three hours a week, online labs/workshops.

NEUR 3203 [0.5 credit]
Field Course in Animal Behaviour
Offered in the Department of Biology as BIOL 3605. Only those modules dealing with animal behaviour topics may be offered for Neuroscience credit.
Includes: Experiential Learning Activity
Also listed as BIOL 3605.
Precludes additional credit for PSYC 3203.
Prerequisite(s): permission of the department.

NEUR 3204 [0.5 credit]
Neuropharmacology
Overview of chemical neurotransmission and key neurotransmitter systems. A description of licit and illicit drugs covering topics that range from historical perspectives to pharmacology to mechanisms of action in the brain. Discussion of neurochemical basis of psychiatric diseases including anxiety, depression and schizophrenia.
Precludes additional credit for PSYC 3204 (no longer offered).
Prerequisite(s): NEUR 2200 or NEUR 2201.
Lectures and seminars three hours a week.

NEUR 3206 [0.5 credit]
Sensory and Motor Neuroscience
Exploration of major topics in sensory processing and motor control, with a focus on underlying mechanisms and neurobiological principles. Topics include all sensory systems (such as vision, somatosensation and audition) plus motor system components including lower and upper motor neurons, basal ganglia, and cerebellum.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 3200 (no longer offered), NEUR 3200 (no longer offered), PSYC 3202 (no longer offered) and NEUR 3202 (no longer offered).
Prerequisite(s): NEUR 1201 or both NEUR 1202 and NEUR 1203, and either NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week, laboratory three hours a week.

NEUR 3207 [0.5 credit]
Systems Neuroscience
Neural systems underlying complex behaviours including emotion, motivation, and sleep, and the role of association cortices in brain function.
Includes: Experiential Learning Activity
Precludes additional credit for NEUR 3200 (no longer offered) and PSYC 3200 (no longer offered).
Prerequisite(s): NEUR 3206.
Lectures three hours a week, laboratory three hours a week.

NEUR 3301 [0.5 credit]
Genetics of Mental Health
Most common mental health diseases have a genetic component. By focusing on specific diseases, this course will discuss how disease susceptibility genes are identified, and describe the genetic, genomic and epigenetic mechanisms through which DNA alterations can predispose to disease.
Prerequisite(s): BIOL 2104 or BIOL 2107, and NEUR 2200 or NEUR 2201.
Lectures three hours a week.
NEUR 3303 [0.5 credit]
The Neuroscience of Consciousness
Consciousness remains one of the least understood aspects of the nervous system. This course explores neural mechanisms underlying consciousness, changes in consciousness associated with sleep, coma, vegetative states, drugs, and other stimuli, and considers the evolutionary basis of consciousness, and its relationship with awareness.
Prerequisite(s): NEUR 2200 or NEUR 2202.
Lectures three hours a week.

NEUR 3304 [0.5 credit]
Hormones and Behaviour
The effects of hormones throughout life at all levels of the nervous system. The role of hormones in mediating behaviours that are both basic (feeding, reproduction and social interactions) and complex (motivation, emotion, learning and memory).
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3401 [0.5 credit]
Environmental Toxins and Mental Health
Exposure to environmental toxins from the air, water or food can interfere with neuronal function, alter neurodevelopment, and damage the brain. This course will explore associations between toxins and diseases such as Parkinson's disease, multiple sclerosis and depression, focusing on mechanisms underlying development of pathology.
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3402 [0.5 credit]
Impact of Lifestyle and Social Interactions on Mental Health
Healthy lifestyle choices and positive social interactions can reduce the incidence of pathological conditions such as depression, obesity, cardiovascular disease and impaired immunity. This course focuses on psychosocial and neurobiological mechanisms that underlie the relationship between lifestyle, social interactions and health.
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3403 [0.5 credit]
Stress and Mental Health
Stressful events can have profound repercussions on physical and psychological well-being. This course examines the psychosocial and biological processes by which stressors predispose to both physical (immune-related disorders, diabetes, heart disease) and psychological (acute stress disorder, posttraumatic stress disorder, depression, anxiety) pathologies.
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3501 [0.5 credit]
Neurodegeneration and Aging
Perspectives on aging and neurodegeneration from psychosocial and neuroscience points of view. How factors including TBI, stroke and alcohol make the brain vulnerable and contribute to neurodegeneration. Clinical overview of Alzheimer’s, Parkinson’s, Huntington's and ALS and the underlying pathology that differentiates these diseases.
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3502 [0.5 credit]
Neurodevelopmental Determinants of Mental Health
Development of the human brain, the generation and differentiation of the various cell types, and the formation of the vast network of neural connections. How neurodevelopmental dysregulation can result in pathologies including dyslexia, ADHD, schizophrenia and autism.
Prerequisite(s): NEUR 2200, or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

NEUR 4001 [0.5 credit]
Special Topics in Neuroscience
Each section of NEUR 4001 deals with a different topic. Topics change yearly. Students may register in more than one section of NEUR 4001 but can register in each section only once.
Prerequisite(s): NEUR 3200, or NEUR 3204 and NEUR 3206 and NEUR 3207, or permission of the Department.
Lectures three hours a week.

NEUR 4002 [0.5 credit]
Systematic Reviews and Meta-Analyses
Introduction to the methods used in conducting systematic reviews and meta-analyses. Topics include: conducting literature searches, extracting relevant literature, assessing quality of studies, synthesizing findings across studies, and the statistical methods used to carry out a meta-analysis.
Includes: Experiential Learning Activity
Prerequisite(s): NEUR 3002 or HLTH 3201 or BIOL 3604 or permission of instructor.
Lecture three hours a week.
NEUR 4200 [0.5 credit]
Seminar on Current Advances in Neuroscience
Headline research in neuroscience. Topics may include technical and conceptual advances, ethical issues, medical improvement, and social impacts of neuroscience research.
Precludes additional credit for PSYC 4200 (no longer offered).
Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.
Seminar three hours a week.

NEUR 4202 [0.5 credit]
Seminar on Current Research in Neuroscience and Psychiatric Disease
Recent research in clinical neuroscience including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include depressive disorders, schizophrenia, autism, ADHD, anorexia, narcolepsy, substance abuse, and personality disorders.
Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.
Seminar three hours a week.

NEUR 4203 [0.5 credit]
Seminar on Current Research in Neuroscience and Clinical Neurology
Recent research in neurological disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include stroke, multiple sclerosis, migraine, seizure disorder, Parkinson’s disease, ALS, chronic pain, Alzheimer’s disease and concussion.
Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.
Seminars three hours a week.

NEUR 4301 [0.5 credit]
Neurobiology of Energy Homeostasis
Focus on neuroanatomical and molecular mechanisms underlying how mammals adapt to changes and challenges in the environment. Topics include regulation of feeding, energy expenditure, water balance, and temperature regulation.
Prerequisite(s): NEUR 3304.
Lectures three hours a week.

NEUR 4302 [0.5 credit]
Sex and the Brain
Neurobiological processes behind reproductive behaviours in various animal species including humans. Evaluation of data concerning neurobiological differences between sexes, biological determinants of sexual orientation, and relating to neurobiology of sex disorders.
Precludes additional credit for NEUR 3302 (no longer offered).
Prerequisite(s): NEUR 3304.
Lectures three hours a week.

NEUR 4303 [0.5 credit]
Indigenous Health & Mental Health
The physical and mental health issues of Indigenous people in the context of the cultural, environmental, developmental and biological factors that contribute to comorbid conditions and greater risk and resilience.
Prerequisite(s): 3rd year standing or above.
Lectures three hours a week.

NEUR 4305 [0.5 credit]
Immune-Brain Interactions
Communication between the brain and the immune system; messengers mediating the interaction. How disturbances of immune-brain signaling can lead to disease (multiple sclerosis, Parkinson’s) and to changes in mood and cognition.
Precludes additional credit for NEUR 3305 (no longer offered).
Prerequisite(s): NEUR 3200 or NEUR 3207.
Lectures three hours a week.

NEUR 4306 [0.5 credit]
The Neural Basis of Addiction
How substance and behavioural addictions impact neural function to ultimately lead to the neuropathology of addiction in vulnerable populations. Contemporary neurobiological theories of addiction will also be addressed.
Precludes additional credit for NEUR 3306.
Prerequisite(s): NEUR 3204.
Lecture three hours a week.

NEUR 4600 [0.5 credit]
Advanced Lab in Neuroanatomy
Advanced experiential learning in neuroanatomy, histology and microscopy.
Includes: Experiential Learning Activity
Prerequisite(s): NEUR 3200 or both NEUR 3206 and NEUR 3207, fourth-year standing in a Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.

NEUR 4801 [0.5 credit]
Neuroethics
Ethical issues of key importance to current neurobiological research. Topics may include the use of animals in research, stem cell research, genetic diagnosis and gene therapy, neuroimaging, and the effect on identity and autonomy of manipulations such as psychopharmaceuticals and psychosurgery.
Prerequisite(s): NEUR 3200 or both NEUR 3206 and NEUR 3207.
Lectures and seminars three hours a week.
NEUR 4900 [0.5 credit]
Independent Study
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program. Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and permission of the Department.

NEUR 4905 [1.0 credit]
Honours Workshop
The course will focus on active learning in areas that include written and oral communication, evaluation and interpretation of results, statistics and data management, emphasizing transferable skills that will be most appropriate for non-research career paths. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in an Honours Neuroscience program and permission of the Department. Lectures and seminars three hours a week, and colloquia three hours a week.

NEUR 4906 [1.0 credit]
Translational Approach to Indigenous Community Wellness
This course involves co-developing an Indigenous community-led process or product that addresses a current and specific mental health issue. Involves working in interdisciplinary groups with a community partner. Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year standing with a minimum CGPA of 9.0 and a grade of A- or higher in one of NEUR 3401, NEUR 3402 or NEUR 3403 and permission of instructor.
Seminars or workshops three hours a week. A field trip to the partner community is typically required.

NEUR 4907 [1.0 credit]
Honours Essay and Research Proposal
An independent essay based critical review and research proposal on a topic in neuroscience, using library resources, under the direct supervision of a Faculty advisor. Evaluation is based on a written report. Includes: Experiential Learning Activity
Prerequisite(s): NEUR 3200, or both NEUR 3206 and NEUR 3207, and fourth-year standing in an Honours Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.
Seminar three hours a week and colloquia three hours a week.

NEUR 4908 [1.0 credit]
Honours Research Thesis
An independent research project undertaken under the direct supervision of a faculty advisor typically from the Department of Neuroscience. Evaluation is based on a written report and poster. Includes: Experiential Learning Activity
Prerequisite(s): NEUR 3200, or both NEUR 3206 and NEUR 3207, and fourth-year standing in an Honours Neuroscience program, a minimum CGPA of 9.0 and permission of the Department.
Colloquia three hours a week.

Open Studies
This section presents the requirements for programs in:
- Open Studies Program Requirements B.A.
- Open Studies Program Requirements B.Sc.

Open Studies Program
Bachelor of Arts
Students can find it difficult to decide which thematic or discipline-specific program they want to take for their academic studies. The Open Studies program typically enables students to begin their studies with a broad set of topics to help them narrow their focus and transition into a thematic or discipline-specific program. The recommended course pattern for students is outlined below. Students are normally expected to apply to enter a thematic or discipline-specific program before beginning their second year of study and will be required to meet with an academic advisor at the Academic Advising Centre who will offer support in making this decision.
Advanced standing entry into the B.A. Open Studies program is restricted. Please consult with an academic advisor for more information.

Academic Standing for Open Studies Programs
For purposes of Academic Performance Evaluation, students in Open Studies programs are assessed using only the Overall CGPA.

First-year Course Selection for B.A. Open Studies Students
To give themselves the greatest range of choices and transition to a more specific program, first-year Open Studies B.A. students should conform to the following guidelines in selecting their initial courses.
Open Studies B.A. students should register in:
1. A B.A. First-year seminar (FYSM);
2. Courses in at least three different disciplines leading to programs within the Faculty of Arts and Social Sciences or the Faculty of Public Affairs.
Open Studies Program Requirements
B.A. (15.0 credits)
Enrolment in the B.A. Open Studies program is restricted. Please consult with an academic advisor for more information.

1. 6.0 credits from disciplines in the Faculty of Arts and Social Sciences or the Faculty of Public Affairs
2. 9.0 credits in free electives

Total Credits 15.0

Notes:
1. Students must complete 2.0 credits at the 3000 level or above;
2. Subject to individual program restrictions, students may be eligible to declare a Minor.

In addition to the requirements presented here, students must satisfy the Bachelor of Arts regulations, including the Breadth Requirement, and University regulations common to all undergraduate students, including the Minimum Number of Carleton Credits (Residency and Advanced credits), the Maximum Number of Credits Below the 2000-level, and the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

Open Studies Program
Bachelor of Science

Students can find it difficult to decide which thematic or discipline-specific program they want to take for their academic studies. The Open Studies program enables students to begin their studies with a broad set of topics to help them narrow their focus and transition into a thematic or discipline-specific program. The recommended course pattern for students is outlined below. Students are normally expected to apply to enter a thematic or discipline-specific program before beginning their second year of study and will be required to meet with an academic advisor at the Academic Advising Centre who will offer support in making this decision.

Advanced standing entry into the B.Sc. Open Studies program is restricted. Please consult with an academic advisor for more information.

Academic Standing for Open Studies Programs
For purposes of Academic Performance Evaluation, students in Open Studies programs are assessed using only the Overall CGPA.

First-year Course Selection for B.Sc. Open Studies Students
To give themselves the greatest range of choices and transition to a more specific program, first-year Open Studies B.Sc. students should conform to the following guidelines in selecting their initial courses.

Open Studies B.Sc. students should register in:

1. 2.0 credits in Experimental Science
2. 1.0 credit in Mathematics
3. 1.0 credit in Mathematics, Experimental Science or Computer Science

4. 1.0 credit chosen from:
   - NSCI 1000 [0.5] Seminar in Science
   - and/or approved courses outside the faculties of Science and Engineering and Design

Total Credits 5.0

Course Categories
Experimental Science Courses

<table>
<thead>
<tr>
<th>Biology</th>
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<tbody>
<tr>
<td>BIOL 1103 [0.5] Foundations of Biology I</td>
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<tr>
<td>BIOL 1104 [0.5] Foundations of Biology II</td>
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<th>Chemistry</th>
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<tr>
<td>CHEM 1001 [0.5] General Chemistry I</td>
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<td>CHEM 1002 [0.5] General Chemistry II</td>
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<tr>
<td>CHEM 1005 [0.5] Elementary Chemistry I</td>
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<td>CHEM 1006 [0.5] Elementary Chemistry II</td>
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<th>Earth Sciences</th>
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<tr>
<td>ERTH 1006 [0.5] Exploring Planet Earth</td>
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<td>ERTH 1009 [0.5] The Earth System Through Time</td>
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<th>Physics</th>
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<tr>
<td>PHYS 1001 [0.5] Foundations of Physics I</td>
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<tr>
<td>PHYS 1002 [0.5] Foundations of Physics II</td>
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<td>PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics</td>
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<td>PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion</td>
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<tr>
<td>PHYS 1007 [0.5] Elementary University Physics I</td>
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<td>PHYS 1008 [0.5] Elementary University Physics II</td>
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<th>Appropriate Mathematics Courses</th>
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<tr>
<td>Calculus</td>
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<tr>
<td>MATH 1007 [0.5] Elementary Calculus I</td>
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<tr>
<td>Algebra</td>
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<td>MATH 1107 [0.5] Linear Algebra I</td>
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<tr>
<th>Appropriate Computer Science Courses</th>
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<tbody>
<tr>
<td>COMP 1005 [0.5] Introduction to Computer Science I</td>
</tr>
<tr>
<td>COMP 1006 [0.5] Introduction to Computer Science II</td>
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</tbody>
</table>

Approved Courses Outside the Faculties of Science and Engineering and Design
Approved courses outside the faculties of Science and Engineering and Design are specified in the Academic Regulations for the Bachelor of Science Degree section of this Calendar.

Open Studies Program Requirements
B.Sc. (15.0 credits)
Enrolment in the B.Sc. Open Studies programs is restricted. Please consult with an academic advisor for more information.

1. 6.0 credits from disciplines in the Faculty of Science or the Faculty of Engineering and Design
2. 9.0 credits in free electives

Total Credits 15.0

Notes:
1. Students must complete 2.0 credits at the 3000 level or above;
2. Subject to individual program restrictions, students may be eligible to declare a Minor.

In addition to the requirements presented here, students must satisfy the Bachelor of Science regulations, including the Breadth and Experimental Science Requirements, and University regulations common to all undergraduate students, including the Minimum Number of Carleton Credits (Residency and Advanced credits), the Maximum Number of Credits Below the 2000-level, and the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

• African Studies
• Criminology and Criminal Justice
• Environmental Studies
• Human Rights
• Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design


Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAEE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SR EE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences


Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOE, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students
should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

B.Sc. Regulations
The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B.Sc.
Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students
Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree
Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted
in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement
Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Biochemistry</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
<td></td>
</tr>
<tr>
<td>BIOC 4001 [0.5]</td>
<td>Methods in Biochemistry</td>
<td></td>
</tr>
<tr>
<td>BIOC 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
<td></td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
<td></td>
</tr>
<tr>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
<td></td>
</tr>
<tr>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
<td></td>
</tr>
<tr>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
<td></td>
</tr>
<tr>
<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
<td></td>
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<tr>
<td>Chemistry</td>
<td></td>
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<tr>
<td>CHEM 1001 [0.5]</td>
<td>General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 1005 [0.5]</td>
<td>Elementary Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 1006 [0.5]</td>
<td>Elementary Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 2103 [0.5]</td>
<td>Physical Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 2203 [0.5]</td>
<td>Organic Chemistry I</td>
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<tr>
<td>CHEM 2204 [0.5]</td>
<td>Organic Chemistry II</td>
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<tr>
<td>CHEM 2302 [0.5]</td>
<td>Analytical Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 2800 [0.5]</td>
<td>Foundations for Environmental Chemistry</td>
<td></td>
</tr>
<tr>
<td>Earth Sciences</td>
<td></td>
<td></td>
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<tr>
<td>ERTH 1006 [0.5]</td>
<td>Exploring Planet Earth</td>
<td></td>
</tr>
<tr>
<td>ERTH 1009 [0.5]</td>
<td>The Earth System Through Time</td>
<td></td>
</tr>
<tr>
<td>ERTH 2102 [0.5]</td>
<td>Mineralogy to Petrology</td>
<td></td>
</tr>
<tr>
<td>ERTH 2404 [0.5]</td>
<td>Engineering Geoscience</td>
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<tr>
<td>ERTH 2802 [0.5]</td>
<td>Field Geology I</td>
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<tr>
<td>ERTH 3111 [0.5]</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
<td></td>
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<tr>
<td>ERTH 3112 [0.5]</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
<td></td>
</tr>
<tr>
<td>ERTH 3204 [0.5]</td>
<td>Mineral Deposits</td>
<td></td>
</tr>
<tr>
<td>ERTH 3205 [0.5]</td>
<td>Physical Hydrogeology</td>
<td></td>
</tr>
<tr>
<td>ERTH 3806 [0.5]</td>
<td>Structural Geology</td>
<td></td>
</tr>
<tr>
<td>Food Sciences</td>
<td></td>
<td></td>
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<tr>
<td>FOOD 3001 [0.5]</td>
<td>Food Chemistry</td>
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<tr>
<td>FOOD 3002 [0.5]</td>
<td>Food Analysis</td>
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</tr>
<tr>
<td>FOOD 3005 [0.5]</td>
<td>Food Microbiology</td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 1010 [0.5]</td>
<td>Global Environmental Systems</td>
<td></td>
</tr>
<tr>
<td>GEOG 3108 [0.5]</td>
<td>Soil Properties</td>
<td></td>
</tr>
<tr>
<td>Neuroscience</td>
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<td></td>
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<tr>
<td>NEUR 3206 [0.5]</td>
<td>Sensory and Motor Neuroscience</td>
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<tr>
<td>NEUR 3207 [0.5]</td>
<td>Systems Neuroscience</td>
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</tr>
<tr>
<td>NEUR 4800 [0.5]</td>
<td>Advanced Lab in Neuroanatomy</td>
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<tr>
<td>Physics</td>
<td></td>
<td></td>
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<tr>
<td>PHYS 1001 [0.5]</td>
<td>Foundations of Physics I</td>
<td></td>
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<tr>
<td>PHYS 1002 [0.5]</td>
<td>Foundations of Physics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 1003 [0.5]</td>
<td>Introductory Mechanics and Thermodynamics</td>
<td></td>
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<tr>
<td>PHYS 1004 [0.5]</td>
<td>Introductory Electromagnetism and Wave Motion</td>
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<tr>
<td>PHYS 1007 [0.5]</td>
<td>Elementary University Physics I</td>
<td></td>
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<td>PHYS 1008 [0.5]</td>
<td>Elementary University Physics II</td>
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<tr>
<td>PHYS 2202 [0.5]</td>
<td>Wave Motion and Optics</td>
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<tr>
<td>PHYS 2604 [0.5]</td>
<td>Modern Physics I</td>
<td></td>
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<tr>
<td>PHYS 3007 [0.5]</td>
<td>Third Year Physics Laboratory: Selected Experiments and Seminars</td>
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<tr>
<td>PHYS 3606 [0.5]</td>
<td>Modern Physics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 3608 [0.5]</td>
<td>Modern Applied Physics</td>
<td></td>
</tr>
</tbody>
</table>

Course Categories for B.Sc. Programs

Science Geography Courses

| GEOG 1010 [0.5]   | Global Environmental Systems |          |
| GEOG 2006 [0.5]   | Introduction to Quantitative Research |          |
| GEOG 2013 [0.5]   | Weather and Water |          |
| GEOG 2014 [0.5]   | The Earth's Surface |          |
| GEOG 3003 [0.5]   | Quantitative Geography |          |
| GEOG 3010 [0.5]   | Field Methods in Physical Geography |          |
| GEOG 3102 [0.5]   | Geomorphology |          |
| GEOG 3103 [0.5]   | Watershed Hydrology |          |
| GEOG 3104 [0.5]   | Principles of Biogeography |          |
| GEOG 3105 [0.5]   | Climate and Atmospheric Change |          |
| GEOG 3106 [0.5]   | Aquatic Science and Management |          |
| GEOG 3108 [0.5]   | Soil Properties |          |
| GEOG 4000 [0.5]   | Field Studies |          |
| GEOG 4005 [0.5]   | Directed Studies in Geography |          |
| GEOG 4013 [0.5]   | Cold Region Hydrology |          |
| GEOG 4017 [0.5]   | Global Biogeochemical Cycles |          |
| GEOG 4101 [0.5]   | Two Million Years of Environmental Change |          |
| GEOG 4103 [0.5]   | Water Resources Engineering |          |
Science Psychology Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 2001</td>
<td>Introduction to Research Methods in Psychology</td>
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<tr>
<td>PSYC 2002</td>
<td>Introduction to Statistics in Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 2700</td>
<td>Introduction to Cognitive Psychology</td>
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</tr>
<tr>
<td>PSYC 3000</td>
<td>Design and Analysis in Psychological Research</td>
<td></td>
</tr>
<tr>
<td>PSYC 3506</td>
<td>Cognitive Development</td>
<td></td>
</tr>
<tr>
<td>PSYC 3700</td>
<td>Cognition (Honours Seminar)</td>
<td></td>
</tr>
<tr>
<td>PSYC 3702</td>
<td>Perception</td>
<td></td>
</tr>
<tr>
<td>PSYC 2307</td>
<td>Human Neuropsychology I</td>
<td></td>
</tr>
<tr>
<td>PSYC 3307</td>
<td>Human Neuropsychology II</td>
<td></td>
</tr>
</tbody>
</table>

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
- ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics) except PHYS 1902, PHYS 1905, PHYS 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

- CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs
- CHEM 1004 [0.5] Drugs and the Human Body
- CHEM 1007 [0.5] Chemistry of Art and Artifacts
- ERTH 1010 [0.5] Our Dynamic Planet Earth
- ERTH 1011 [0.5] Evolution of the Earth
- ERTH 2415 [0.5] Natural Disasters
- ISCI 1001 [0.5] Introduction to the Environment
- ISCI 2000 [0.5] Natural Laws
- ISCI 2002 [0.5] Human Impacts on the Environment
- MATH 0107 [0.5] Algebra and Geometry
- PHYS 1901 [0.5] Planetary Astronomy
- PHYS 1902 [0.5] From our Star to the Cosmos
PHYS 1905 [0.5]  Physics Behind Everyday Life  
PHYS 2903 [0.5]  Physics Towards the Future  

**Prohibited Courses**  
The following courses are not acceptable for credit in any B.Sc. program:  
- COMP 1001 [0.5]  Introduction to Computational Thinking for Arts and Social Science Students  
- MATH 0005 [0.5]  Precalculus: Functions and Graphs  
- MATH 0006 [0.5]  Precalculus: Trigonometric Functions and Complex Numbers  
- MATH 1009 [0.5]  Mathematics for Business  
- MATH 1119 [0.5]  Linear Algebra: with Applications to Business  
- MATH 1401 [0.5]  Elementary Mathematics for Economics I  
- MATH 1402 [0.5]  Elementary Mathematics for Economics II  

**Admissions Information**  
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Admission Requirements**  
**Degrees**  
- Bachelor of Arts (B.A.) (Honours)  
- Bachelor of Arts (B.A.)

**First Year**  
*For B.A. and B.A. (Honours)*  
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

**Advanced Standing**  
**B.A. and B.A. (Honours) Program**  
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**Admissions Information**  
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Degrees**  
- B.Sc. (Honours)  
- B.Sc. (Major)  
- B.Sc.

**Admission Requirements**  
**B. Sc. Honours Program**  
**First Year**  
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

**Specific Honours Admission Requirements**  
For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary
Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

**Advanced Standing**

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**B.Sc. Major Program**

**B.Sc. Program**

**First Year**

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics. 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

**Advanced Standing**

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

**Co-op Option**

**Direct Admission to the First Year of the Co-op Option**

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

**Philosophy**

This section presents the requirements for programs in:

- Philosophy B.A. Honours
- Philosophy with Concentration in Philosophy, Ethics and Public Affairs B.A. Honours
- Philosophy B.A. Combined Honours
- Philosophy B.A.
- Minor in Philosophy
- Mention : Français

**Program Requirements**

**Course Categories for Philosophy**

For purposes of program description the Philosophy courses are classified as follows.

**History of Philosophy**

PHIL 2005 [1.0] Ancient Philosophy: The Search for Wisdom
PHIL 2101 [0.5] History of Ethics
PHIL 2201 [0.5] Introduction to Marxist Philosophy
PHIL 2202 [0.5] Topics in Marxist Philosophy
PHIL 2700 [0.5] Asian Philosophy
PHIL 3000 [0.5] Topics in Ancient Philosophy
PHIL 3001 [0.5] Early Greek Philosophy
PHIL 3002 [0.5] 17th Century Philosophy
PHIL 3003 [0.5] 18th Century Philosophy
PHIL 3005 [0.5] 19th Century Philosophy
PHIL 3009 [0.5] Topics in European Philosophy
PHIL 3010 [0.5] Global Philosophical Traditions
PHIL 3104 [0.5] The Roots of Analytic Philosophy
PHIL 3330 [0.5] Topics in History of Social and Political Philosophy

**Ethics, Society, and Aesthetics (ESA)**

PHIL 2020 [0.5] Issues in Practical Philosophy
PHIL 2101 [0.5] History of Ethics
PHIL 2103 [0.5] Philosophy of Human Rights
**Philosophy Courses Open to First-Year Students**

Please note that not all of these courses are offered each year.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 1000</td>
<td>Introductory Philosophy: Fields, Figures and Problems</td>
</tr>
<tr>
<td>PHIL 1100</td>
<td>Looking at Philosophy</td>
</tr>
<tr>
<td>PHIL 1200</td>
<td>The Meaning of Life</td>
</tr>
<tr>
<td>PHIL 1200</td>
<td>Mind, World, and Knowledge</td>
</tr>
<tr>
<td>PHIL 1301</td>
<td>Contemporary Moral, Social and Religious Issues</td>
</tr>
<tr>
<td>PHIL 1500</td>
<td>Introduction to Ethics and Social Issues</td>
</tr>
<tr>
<td>PHIL 1550</td>
<td>Great Philosophical Ideas, Part 1</td>
</tr>
<tr>
<td>PHIL 1610</td>
<td>Great Philosophical Ideas, Part 2</td>
</tr>
<tr>
<td>PHIL 1620</td>
<td>Philosophy of Love and Sex</td>
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<tr>
<td>PHIL 2001</td>
<td>Introduction to Logic</td>
</tr>
<tr>
<td>PHIL 2003</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td>PHIL 2005</td>
<td>Ancient Philosophy: The Search for Wisdom</td>
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<tr>
<td>PHIL 3002</td>
<td>17th Century Philosophy</td>
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<td>PHIL 3003</td>
<td>18th Century Philosophy</td>
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<tr>
<td>PHIL 2010</td>
<td>Issues in Theoretical Philosophy</td>
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<td>PHIL 2020</td>
<td>Issues in Practical Philosophy</td>
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<td>PHIL 2001</td>
<td>Introduction to Logic</td>
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<td>PHIL 3002</td>
<td>17th Century Philosophy</td>
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**Language, Mind and World (LMW)**

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<td>PHIL 1550</td>
<td>Introduction to Ethics and Social Issues</td>
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<td>PHIL 1610</td>
<td>Great Philosophical Ideas, Part 1</td>
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<td>Great Philosophical Ideas, Part 2</td>
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<td>PHIL 1700</td>
<td>Philosophy of Love and Sex</td>
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<td>PHIL 2001</td>
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<td>PHIL 2003</td>
<td>Critical Thinking</td>
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<td>PHIL 2005</td>
<td>Ancient Philosophy: The Search for Wisdom</td>
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<td>PHIL 3002</td>
<td>17th Century Philosophy</td>
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<td>PHIL 3003</td>
<td>18th Century Philosophy</td>
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<td>PHIL 3005</td>
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<td>PHIL 3006</td>
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**Philosophy B.A. Honours (20.0 credits)**

A. Credits Included in the Major CGPA (10.0 credits)

1. 2.0 credits in:
   - PHIL 2005 [1.0] Ancient Philosophy: The Search for Wisdom
   - PHIL 3002 [0.5] 17th Century Philosophy
   - PHIL 3003 [0.5] 18th Century Philosophy

2. 1.0 credit in:
   - PHIL 2010 [0.5] Issues in Theoretical Philosophy
   - PHIL 2020 [0.5] Issues in Practical Philosophy

3. 0.5 credit from:
   - PHIL 2001 [0.5] Introduction to Logic
   - PHIL 2003 [0.5] Critical Thinking

4. 1.5 credits in Ethics, Society and Aesthetics at the 2000-level or higher
5. 1.5 credits in Language, Mind and World at the 2000-level or higher
6. 1.5 credits in PHIL
7. 2.0 credits in PHIL at the 4000-level or higher

B. Credits Not Included in the Major CGPA (10.0 credits)

8. 8.0 credits not in PHIL
9. 2.0 credits in free electives

Total Credits 20.0

**Philosophy with Concentration in Philosophy, Ethics and Public Affairs B.A. Honours (20.0 credits)**

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.0 credit in:
   - PHIL 2010 [0.5] Issues in Theoretical Philosophy
   - PHIL 2020 [0.5] Issues in Practical Philosophy

2. 2.0 credits from:
   - PHIL 2101 [0.5] History of Ethics
   - PHIL 3320 [0.5] Contemporary Ethical Theory
   - PHIL 3330 [0.5] Topics in History of Social and Political Philosophy
   - PHIL 3340 [0.5] Topics in Contemporary Social and Political Philosophy
   - PHIL 3350 [0.5] Philosophy, Ethics, and Public Affairs
   - PHIL 3360 [0.5] Philosophy, Economics, and Public Policy

3. 2.0 credits in Philosophy from:
   - PHIL 1500 [1.0] Contemporary Moral, Social and Religious Issues (satisfies two of four requirements)
PHIL 1550 [0.5] Introduction to Ethics and Social Issues
PHIL 2103 [0.5] Philosophy of Human Rights
PHIL 2106 [0.5] Information Ethics
PHIL 2201 [0.5] Introduction to Marxist Philosophy
PHIL 2202 [0.5] Topics in Marxist Philosophy
PHIL 2306 [0.5] Philosophy and Feminism
PHIL 2307 [0.5] Gender and Philosophy
PHIL 2380 [0.5] Introduction to Environmental Ethics
PHIL 2408 [0.5] Bioethics
PHIL 2901 [0.5] Truth and Propaganda
4. 1.5 credits in History of Philosophy 1.5
5. 1.0 credit in Language, Mind and World 1.0
6. 2.0 credits in PHIL at the 4000 level or above 2.0
7. 2.5 credits in PHIL 2.5
B. Credits Not Included in the Major CGPA (8.0 credits)
Please note that some of the following courses may have PSCI prerequisites.

8. 1.0 credit in:
   PSCI 2301 [0.5] History of Political Thought I
   PSCI 2302 [0.5] History of Political Thought II
9. 2.0 credits from:
   PSCI 3109 [0.5] The Politics of Law and Morality
   PSCI 3300 [0.5] Politics and Literature
   PSCI 3302 [0.5] Comparative Political Thought
   PSCI 3303 [0.5] Feminist Political Theory
   PSCI 3307 [0.5] Politics of Human Rights
   PSCI 3308 [0.5] Modern Political Thought
   PSCI 3309 [0.5] Modern Identities
   PSCI 3311 [0.5] History of Muslim Political Thought
   PSCI 3312 [0.5] Enlightenment Political Thought
   PSCI 3709 [0.5] Ancient and Medieval Political Thought
   PSCI 4302 [0.5] Political Thought in the Modern Muslim Middle East
   PSCI 4311 [0.5] Political Theories of Democracy and Empire I
   PSCI 4312 [0.5] Political Theories of Democracy and Empire II
10. 2.0 credits not in PHIL 2.0
11. 3.0 credits in free electives 3.0
Total Credits 20.0

Philosophy
B.A. (15.0 credits)
A. Credits Included in the Major CGPA (6.0 credits)
1. 1.0 credit in History of Philosophy 1.0
2. 1.0 credit in PHIL, which may be satisfied by:
   FYSM 1210 [0.5] Special Topics in Philosophy
   FYSM 1211 [0.5] Looking at Philosophy
   FYSM 1212 [0.5] Contemporary Moral, Social, and Religious Issues
   FYSM 1300 [1.0] History of Philosophy
3. 0.5 credit from:
   PHIL 2001 [0.5] Introduction to Logic
   PHIL 2003 [0.5] Critical Thinking
4. 0.5 credit in 3000-level or higher PHIL 0.5
5. 3.0 credits in 2000-level or higher PHIL 3.0
B. Credits Not Included in the Major CGPA (9.0 credits)
6. 6.0 credits not in PHIL 6.0
7. 3.0 credits in free electives 3.0
Total Credits 15.0

Minor in Philosophy (4.0 credits)
Requirements
1. 2.0 credit in PHIL at the 2000-level or above 2.0
2. 0.5 credit from:
   PHIL 2001 [0.5] Introduction to Logic
   PHIL 2003 [0.5] Critical Thinking
3. 0.5 credit in PHIL at the 3000-level or above 0.5
4. 1.0 credit in PHIL or 1.0 credit from:
   FYSM 1210 [0.5] Special Topics in Philosophy
   FYSM 1211 [0.5] Looking at Philosophy
   FYSM 1212 [0.5] Contemporary Moral, Social, and Religious Issues
   FYSM 1300 [1.0] History of Philosophy
5. The remaining requirements of the major discipline(s) and degree must be satisfied
Total Credits 4.0
Mention : Français (4.0 credits)

Students in the Philosophy B.A. or the Philosophy B.A. Honours program may qualify for the notation Mention : Français by fulfilling the requirements outlined below. Those wishing to pursue this option should consult with the Department's Undergraduate Supervisor, whose approval is required for all courses under Mention : Français.

Philosophy courses presented in fulfilment of Mention : Français requirements can double as courses to satisfy the Philosophy B.A. or the Philosophy B.A. Honours requirements.

To graduate with the notation Mention : Français, Philosophy students must include in their program the following:

1. **1.0 credit in** French language chosen in consultation with the French Department to perfect the student's French language skills.

2. **1.0 credit taught in French at Carleton and concerned with the study of the heritage and culture of French Canada**

3. **1.0 credit from:**
   - PHIL 3901 [0.5] Independent Study
   - PHIL 3902 [0.5] Independent Study
   - PHIL 3903 [0.5] Independent Study
   - PHIL 3906 [0.5] Independent Study
   - PHIL 3907 [0.5] Independent Study
   - PHIL 3908 [0.5] Independent Study
   - PHIL 4901 [0.5] Tutorial
   - PHIL 4902 [0.5] Tutorial
   - PHIL 4903 [0.5] Tutorial
   - PHIL 4904 [0.5] Tutorial
   - PHIL 4906 [0.5] Tutorial
   - PHIL 4908 [0.5] Tutorial
   - PHIL 4910 Tutorial

   with philosophical works read in French and papers submitted in French to be assessed by two members of the Philosophy Department knowledgeable in the language, or 1.0 credit in Philosophy at the 3000-level taught in French at another university and acceptable to the Philosophy Department. In addition, Philosophy students in B.A. Honours or Combined Honours must include:

4. **1.0 credit from special projects:**
   - PHIL 4900 [1.0] Tutorial
   - PHIL 4901 [0.5] Tutorial
   - PHIL 4902 [0.5] Tutorial
   - PHIL 4903 [0.5] Tutorial
   - PHIL 4904 [0.5] Tutorial
   - PHIL 4906 [0.5] Tutorial

   in French, supervised by a member of the Department of Philosophy, or earned in a Philosophy seminar or seminars at the 4000-level taught in French at another university and acceptable to the Philosophy Department. Students must, in addition, satisfy the Honours requirement of 2.0 Carleton credits at the 4000- or 5000-level in Philosophy (1.0 for Combined Honours).

5. Combined Honours students must meet the Mention : Français requirements of both Honours disciplines.

**Total Credits**: 4.0

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

**Breadth Area 1: Culture and Communication**

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Latin, Mandarin, Portuguese, Russian, Spanish)

**Subject codes**: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

**Breadth Area 2: Humanities**


**Subject codes**: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS,
INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOL, BIOL, BIT, CHEM, CIVE, COMP, COMP, ELEC, ENVE, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfill the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take care note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.
Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees
- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing
B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Philosophy (PHIL) Courses

PHIL 1000 [0.5 credit]
Introductory Philosophy: Fields, Figures and Problems
What is metaphysics? Who was Socrates? What is Freedom? This introduction sketches many branches of philosophy and the important problems associated with each. It introduces great philosophers, present and past, and traces enduring philosophical themes.

Precludes additional credit for FYSM 1208 (no longer offered), FYSM 1211, PHIL 1100. This course is not suitable for students with previous formal study of philosophy.

PHIL 1100 [1.0 credit]
Looking at Philosophy
Introduction to philosophy: the nature of logical thinking; the existence of God; the objectivity of values; the meaning of life; free will, determinism and responsibility; the relation between mind and body; immortality; the possibility of knowledge. This course is not intended for Majors.

Precludes additional credit for FYSM 1208 (no longer offered), FYSM 1211 and PHIL 1000.

Lectures three hours a week.

PHIL 1200 [0.5 credit]
The Meaning of Life
An introduction to concerns expressed by the perennial philosophical question, "What is the meaning of life?" Students will be familiarized with the major philosophical approaches to life's meaning through a consideration of various contemporary and late modern works in the philosophy of life.

Lectures three hours a week.

PHIL 1301 [0.5 credit]
Mind, World, and Knowledge
Introduction to a variety of philosophical works, including contemporary, on such topics as: the nature of being, the mental, the external, consciousness, perception, experience, meaning, truth, the nature of knowledge, scientific understanding, and how language and thought represent the world.

Precludes additional credit for PHIL 1006 (no longer offered), PHIL 1501 (no longer offered).

Lectures three hours per week.

PHIL 1500 [1.0 credit]
Contemporary Moral, Social and Religious Issues
Moral theories, atheism or theism, feminism, and free will. Moral arguments concerning abortion, affirmative action, racism, human rights, children's rights, world hunger, capital punishment, euthanasia, censorship, pornography, legal paternalism, animal rights and environmental protection.

Precludes additional credit for FYSM 1209 and PHIL 1550.

Lectures three hours a week.

PHIL 1550 [0.5 credit]
Introduction to Ethics and Social Issues
An introduction to understanding, assessing, and formulating ethical arguments concerning controversial issues. Particular issues studied may include, world hunger, capital punishment, terrorism, euthanasia, abortion, pornography and hate speech, animal rights, the environment, and topics in theories of race, gender and disability.

Precludes additional credit for FYSM 1212 and PHIL 1500.

Lectures three hours a week.
PHIL 1610 [0.5 credit]  
Great Philosophical Ideas, Part 1  
Major figures and developments in philosophy from the early Greeks to the year 1400. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments. Precludes additional credit for FYSM 1300, PHIL 1600. Lectures three hours a week.

PHIL 1620 [0.5 credit]  
Great Philosophical Ideas, Part 2  
Major figures and developments in philosophy after the year 1400. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments. Precludes additional credit for FYSM 1300, PHIL 1600. Lectures three hours a week.

PHIL 1700 [0.5 credit]  
Philosophy of Love and Sex  
A survey of philosophical classics, on themes of romantic love, self-love, altruistic love, sexuality, eroticism and the passion/reason dichotomy, from Plato's Symposium to Foucault's History of Sexuality; and an examination of related contemporary issues in light of these perspectives. Lectures three hours a week.

PHIL 2001 [0.5 credit]  
Introduction to Logic  
An introduction to the techniques and philosophical implications of formal logic with emphasis on translation of expressions into symbolic form, testing for logical correctness, the formulation and application of rules of inference, and the relation between logic and language. Open to first-year students. Lectures three hours a week. Tutorials may be offered in selected terms.

PHIL 2003 [0.5 credit]  
Critical Thinking  
Assessment of reasoning and the development of cogent patterns of thinking. Reference to formal logic is minimal. Practice in criticizing examples of reasoning and in formulating one's own reasons correctly and clearly. Open to first-year students. Lectures three hours a week.

PHIL 2005 [1.0 credit]  
Ancient Philosophy: The Search for Wisdom  
An exploration of ancient philosophy as a search for wisdom and happiness from its Presocratic beginnings in Greece to its development in the Hellenistic world and Imperial Rome. Emphasis on philosophy as a contemplative activity and as a way of life. Also listed as CLCV 2105. Precludes additional credit for PHIL 2006, CLCV 2006, PHIL 2007, CLCV 2007 (no longer offered). Prerequisite(s): 0.5 credit in PHIL, or second-year standing. Lectures three hours a week.

PHIL 2010 [0.5 credit]  
Issues in Theoretical Philosophy  
Issues drawn from epistemology, metaphysics, philosophy of mind, philosophy of language, and related fields will be examined through careful study of significant philosophical texts after 1900, along with some ensuing debates. Prerequisite(s): enrolment in Honours or Combined Honours Philosophy programs, or in philosophy, Ethics, and Public Affairs, or permission of the Department. Lectures and discussion three hours a week.

PHIL 2020 [0.5 credit]  
Issues in Practical Philosophy  
Issues drawn from ethics, social and political philosophy, and related fields will be examined through careful study of significant philosophical texts, along with some ensuing debates. Includes: Experiential Learning Activity Prerequisite(s): enrolment in Honours or Combined Honours Philosophy programs, or in philosophy, Ethics, and Public Affairs, or permission of the Department. Lectures and discussion three hours a week.

PHIL 2101 [0.5 credit]  
History of Ethics  
An introduction to ethical theories through a study of some of the major figures in moral philosophy, such as Aristotle, Hume, Kant and Mill. Prerequisite(s): 0.5 credit in philosophy or second-year standing. Lectures three hours a week.

PHIL 2103 [0.5 credit]  
Philosophy of Human Rights  
Philosophical introduction to human rights sources, concepts, justifications, consequences, and challenges to them. Evolution of selected human rights as a) demands made in political struggles; b) declarations supported by moral or political principles and arguments; c) codes ratified and implemented by governments and international organizations. Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.
PHIL 2106 [0.5 credit]
Information Ethics
An exploration of ethical issues that arise in the Age of Information. Topics to be discussed may include technology, surveillance and privacy, social media and privacy, social media and cognitive bias, bias in algorithms, AI ethics, intellectual property, and freedom of expression and assembly. Precludes additional credit for PHIL 2104 (no longer offered).
Prerequisite(s): a course in philosophy or second-year standing.
Lectures three hours a week.

PHIL 2120 [0.5 credit]
Philosophy of Technology
Philosophical investigations of the nature of technology and the influence it has on our relationships with others, the natural world, and ourselves. Key themes may include the relation between technology and science and the role of technology in personal identity, social justice, and well-being.
Prerequisite(s): a course in philosophy or second-year standing.
Lectures three hours a week.

PHIL 2201 [0.5 credit]
Introduction to Marxist Philosophy
The evolution of Marx's social and political views in the setting of 18th - and 19th - century anarchism, liberalism and conservatism. Themes of humanism, freedom, rights, the state, democracy, alienation, and inequality, primarily as they develop into the theory of historical materialism. Precludes additional credit for PHIL 2200.
Prerequisite(s): 0.5 credit in philosophy or permission of the Department.
Lectures three hours a week.

PHIL 2202 [0.5 credit]
Topics in Marxist Philosophy
The dialectical materialism of Marx, Engels, and Lenin is compared with traditional materialist, idealist, and mechanist philosophy. Marxist views on issues such as equality, ethical objectivity, human well-being, matter and mind, the existence of God, knowledge versus skepticism, freedom of the will, and justice. Precludes additional credit for PHIL 2200.
Prerequisite(s): PHIL 2201 or 0.5 credit in the history of philosophy at the 2000-level or above.
Lectures three hours a week.

PHIL 2301 [0.5 credit]
Introduction to the Philosophy of Science
Philosophical issues arising out of the attempt to understand the world scientifically. Topics may include: scientific methodology, revolution, observation, explanation, causation, induction, reduction, the difference between natural and social scientific understanding, realism, instrumentalism, constructivism.
Prerequisite(s): a course in philosophy or second-year standing.

PHIL 2306 [0.5 credit]
Philosophy and Feminism
A study of philosophical issues arising from feminism. The course includes discussions of the historical roots of feminism, the role of reason and emotion, key concepts such as oppression, sexism, equality and difference, feminism and philosophies of race and of disability, and selected moral/political issues.
Prerequisite(s): 0.5 credit in philosophy or second-year standing.
Lectures three hours a week.

PHIL 2307 [0.5 credit]
Gender and Philosophy
Topics may include gender and sex in the history of philosophy, intersections between the politics and theories of gender, sexuality, and race, the place of the body in philosophical theory, the influence of gender and sex on science/social science, and queer/trans issues and politics.
Prerequisite(s): a course in philosophy or second-year standing.
Lectures three hours a week.

PHIL 2320 [0.5 credit]
Children, Literature, and Philosophy
An exploration of issues at the nexus of philosophy, children's literature, and childhood studies. Topics may include an examination of children's books and young adult literature through a philosophical lens, as well as a critical examination of the "philosophy with children" movement.
Includes: Experiential Learning Activity
Prerequisite(s): 0.5 credit in philosophy or second-year standing in a philosophy program, or permission of the department.
Lectures three hours a week.

PHIL 2330 [0.5 credit]
Happiness, Well-being, and the Good Life
A philosophical exploration of what makes a good human life. Topics may include the role of happiness, well-being, and flourishing in a good life, the relations between these aspects, and the extent to which they depend on luck and social considerations.
Lectures three hours a week.

PHIL 2340 [0.5 credit]
Philosophy and Popular Culture
Philosophy is all around us, it permeates culture. This course explores philosophical questions through the lens of popular culture. The material used may include films, shows, music, novels, video games, advertising, comic books, and so on.
Lectures three hours a week.
PHIL 2380 [0.5 credit]
Introduction to Environmental Ethics
Major questions in environmental ethics: How should human beings view their relationship to the rest of nature? Is responsible stewardship of the environment compatible with current technology? Must future generations be protected? Do animals, other life forms, endangered species, ecosystems and/or the biosphere have value/rights?
Precludes additional credit for PHIL 1804.
Lectures three hours a week.

PHIL 2405 [0.5 credit]
Philosophy of the Paranormal
Examination of claims, concepts, theories and methods in parapsychology. Their scientific character and the relation of paranormal phenomena to philosophical issues such as survival of death, human nature, time, space, causality and perception.
Prerequisite(s): 0.5 credit in philosophy or permission of the Department.
Lectures three hours a week.

PHIL 2408 [0.5 credit]
Bioethics
Ethical and political issues in medicine, public health, biotechnology, and the life sciences. Topics may include reproductive ethics, research on human subjects, animal research and treatment, justice and health care, physician-patient relationships, death and the end of life, and genetic engineering.
Precludes additional credit for PHIL 3408.
Prerequisite(s): a course in philosophy or second-year standing.
Lectures three hours a week. Tutorials may be offered in selected terms.

PHIL 2501 [0.5 credit]
Introduction to Philosophy of Mind
An introduction to major philosophical issues concerning human cognition. Topics may include: the relation of mind to body, knowledge of other minds, the relation of mental states to personhood and personal identity, mental illness, consciousness, intentionality, action, mental realism.
Precludes additional credit for PHIL 2502.
Prerequisite(s): a course in philosophy or second-year standing.

PHIL 2504 [0.5 credit]
Language and Communication
Some of the central topics in the study of language and communication as pursued by linguists and philosophers. The nature of meaning; the connections between language, communication and cognition; language as a social activity.
Also listed as COMS 2504, LING 2504.
Precludes additional credit for COMM 2800, LALS 2504, LALS 2800 and PHIL 2800.
Prerequisite(s): second-year standing.
Lectures three hours a week.
PHIL 2807 [0.5 credit]
Philosophy of Art
Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences. Also listed as ARTH 2807.
Lecture three hours a week.

PHIL 2901 [0.5 credit]
Truth and Propaganda
Ancient and modern techniques of persuasion from analytical, ethical and jurisprudential perspectives. Objectivity and bias, advertising and public relations ethics, the viability of democracy in the light of pressures on and within the modern mass media. Precludes additional credit for PHIL 2900 (no longer offered). Prerequisite(s): 0.5 credit in PHIL or second-year standing. Lectures three hours per week.

PHIL 3000 [0.5 credit]
Topics in Ancient Philosophy
A study of philosophers, texts, problems and issues in ancient philosophy, generally with a focus on Plato and Aristotle. Also listed as CLCV 3011. Prerequisite(s): 0.5 credit in philosophy and second-year standing, or permission of the department. Lectures three hours a week.

PHIL 3001 [0.5 credit]
Early Greek Philosophy
A study of the pre-Socratic Greek philosophers and of the Sophists and Socrates. Also listed as CLCV 3001. Prerequisite(s): CLCV 2105 or PHIL 2005 or permission of the Department. Lectures three hours a week.

PHIL 3002 [0.5 credit]
17th Century Philosophy
European philosophy of the 17th century. Representative works of writers such as Francis Bacon, Descartes, Spinoza, Leibniz, and Locke. Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department. Lectures three hours a week.

PHIL 3003 [0.5 credit]
18th Century Philosophy
European philosophy of the 18th century. Representative works of writers such as Berkeley, Hume, and Kant. Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department. Lectures three hours a week.

PHIL 3005 [0.5 credit]
19th Century Philosophy
European philosophy in the 19th century. May include Hegel, Marx, Schopenhauer, Kierkegaard, Nietzsche, Mill. Precludes additional credit for PHIL 3007. Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the Department. Lectures three hours a week.

PHIL 3009 [0.5 credit]
Topics in European Philosophy
A study of philosophers, texts, problems and issues in any period of European philosophy. Prerequisite(s): 0.5 credit in philosophy or second-year standing. Lectures three hours a week.

PHIL 3010 [0.5 credit]
Global Philosophical Traditions
A study of philosophers, texts, and doctrines beyond the Western tradition. Traditions covered will vary but may include Asian, African, Muslim or Indigenous philosophy, possibly with critical comparison to Western counterparts. Precludes additional credit for PHIL 2004. Prerequisite(s): 0.5 credit in philosophy or second-year standing. Lectures three hours a week.

PHIL 3102 [0.5 credit]
Philosophy of Law: The Logic of Law
Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession. Also listed as LAWS 3102. Prerequisite(s): 0.5 credit in philosophy or permission of the Department. Lectures three hours a week.

PHIL 3104 [0.5 credit]
The Roots of Analytic Philosophy
In the context of the work of such writers as Frege and Bradley, a discussion of early philosophical works of Russell, Moore and Wittgenstein. In addition some early representatives of positivism and pragmatism may be examined. Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department. Lectures and seminar three hours a week.
PHIL 3140 [0.5 credit]  
Epistemology  
Fundamental issues concerning the relation between evidence, rationality, and knowledge. Topics may include: skepticism, the nature of belief, the structure of justification, the relative contributions of reason and sense experience to knowledge, innate knowledge, the problem of induction, and the knowledge of other minds. Precludes additional credit for PHIL 2300. Prerequisite(s): 0.5 credit in philosophy and third-year standing in a philosophy program or permission of the department.

PHIL 3150 [0.5 credit]  
Metaphysics  
Philosophical issues concerning the fundamental nature of being. Topics may include: time and temporality, space, substance, universals/particulars, identity, causation, freedom/determinism, the nature of norms. Precludes additional credit for PHIL 2302. Prerequisite(s): 0.5 credit in philosophy and third-year standing in a philosophy program, or permission of the department.

PHIL 3301 [0.5 credit]  
Issues in the Philosophy of Science  
Selected topic(s) in the philosophy of science, such as its relationship to values, or in the philosophy of a particular science (such as philosophy of mathematics, philosophy of physics, philosophy of biology, and philosophy of the social sciences). Prerequisite(s): PHIL 2301 or permission of the department. Lectures three hours a week.

PHIL 3306 [0.5 credit]  
Symbolic Logic  
A review of the basic techniques of propositional and predicate logic. Natural deduction and consistency trees. Soundness and completeness. Alternative semantics. Extensions to basic logic: identity, modal logic with possible world semantics, three valued systems, deontic logic. Precludes additional credit for PHIL 3305. Prerequisite(s): PHIL 2001 or permission of the Department. Lectures three hours a week.

PHIL 3320 [0.5 credit]  
Contemporary Ethical Theory  
Critical study of modern ethical theories, their views on the nature of morality and the justification of moral claims. Topics may include utilitarianism, libertarianism, communitarianism, egoism, neo-Kantianism, virtue ethics, social contract ethics, feminist ethics, and moral rights. Precludes additional credit for PHIL 2102. Prerequisite(s): PHIL 2020 or PHIL 2101 or permission of the department. Lectures three hours a week.

PHIL 3330 [0.5 credit]  
Topics in History of Social and Political Philosophy  
A critical examination of selected topics and perspectives in the history of social and political philosophy. Precludes additional credit for PHIL 3300. Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.

PHIL 3340 [0.5 credit]  
Topics in Contemporary Social and Political Philosophy  
A critical examination of some contemporary approaches to topics in social and political philosophy, such as liberalism, feminism, contractarianism, Marxism, libertarianism, and communitarianism. Precludes additional credit for PHIL 3300. Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.

PHIL 3350 [0.5 credit]  
Philosophy, Ethics, and Public Affairs  
Advanced study of a set of public policy issues, a particular theory or group of theories, or a particular philosopher, concerning philosophical and ethical aspects of public affairs. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

PHIL 3360 [0.5 credit]  
Philosophy, Economics, and Public Policy  
The course explores issues at the intersection of philosophy and economics, with a special focus on socially and politically relevant issues. Topics may include: efficiency, cooperation, equity and distributive justice, commodification and the moral limits of markets. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

PHIL 3380 [0.5 credit]  
Environments, Technology and Values  
Advanced treatment of ethical issues concerning technologies and environments, including: sustainable development, women and the environment, biological diversity, intrinsic or natural value or rights of non-humans, humans’ relation to the rest of the natural world, obligations to future generations, liberty versus equality. Precludes additional credit for PHIL 2804. Prerequisite(s): PHIL 1804 or PHIL 2380 and third-year standing, or permission of the Department. Lectures three hours a week.
PHIL 3450 [0.5 credit]
Topics in Aesthetics
Topics may include theories of aesthetic norms and valuation from ancient Greece onward, or applications of aesthetic theory to various genres of art.
Precludes additional credit for PHIL 2400, PHIL 3400, PHIL 3401, and PHIL 3402.
Prerequisite(s): At least 0.5 credit in philosophy, or HUMS 1000, or ARTH 2807, or permission of the Department.
Seminar two hours a week.

PHIL 3501 [0.5 credit]
Philosophy of Cognitive Science
Philosophical issues arising from cognitive science. Topics may include: the proper methodology for studying the mind, the very possibility of a "science of mind", the computer model of the mind and reactions to it.
Prerequisite(s): PHIL 2501 or PHIL 2502 or second-year standing in Cognitive Science, or permission of the department.

PHIL 3502 [0.5 credit]
Mind and Action
Philosophical thought concerning the relation between mentality and agency. Topics may include: the relation between belief, desire, and behaviour; rationality and normativity; representing and doing; subjectivity and intersubjectivity; physical and psychological laws; mental causation. Authors may include: Wittgenstein, Heidegger, Ryle, Sellars, Anscombe, Davidson, Taylor, McDowell.
Prerequisite(s): PHIL 2501 or PHIL 2502, or permission of the Department.

PHIL 3504 [0.5 credit]
Pragmatics
The study of language use in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker’s reference; speech acts. May include cross-cultural pragmatics.
Also listed as LING 3504.
Precludes additional credit for LALS 2800 [1.0], LALS 3504, MCOM 2800 [1.0], MCOM 3504 and PHIL 2800 [1.0].
Prerequisite(s): third-year standing, and one of FYSM 1206, LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or LALS/LING 3504 or LALS/LING 3505/PHIL 3506; or permission of the Department of Philosophy or School of Linguistics and Applied Language Studies.
Lectures three hours a week.

PHIL 3506 [0.5 credit]
Semantics
Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.
Also listed as LING 3505.
Precludes additional credit for LALS 3505.
Prerequisite(s): third-year standing, and one of LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or PHIL/LALS/LING 3504; or permission of the Department of Philosophy or School of Linguistics and Applied Language Studies.
Lectures three hours a week.

PHIL 3530 [0.5 credit]
Philosophy of Language
An intensive introduction to philosophy of language. Topics may include meaning, reference and truth, speech acts, the nature of concepts, language learning, metaphor, compositionality, context-sensitivity.
Prerequisite(s): third-year standing, and one of FYSM 1206, LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or LALS/LING 3504 or LALS/LING 3505/PHIL 3506; or permission of the department.
Lectures three hours a week.

PHIL 3540 [0.5 credit]
Philosophy of Emotions
Emotions are central to human experience and widely studied in philosophy and science. In order to better understand them and their role in our lives, this course explores philosophical questions about emotions as they arise in philosophy of mind and cognitive science, ethics, and aesthetics.
Prerequisite(s): PHIL 2501, or permission of the department.
Lectures three hours a week.

PHIL 3901 [0.5 credit]
Independent Study
Essays and/or examinations based on a list of readings provided by the instructor.
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3902 [0.5 credit]
Independent Study
Essays and/or examinations based on a list of readings provided by the instructor.
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.
PHIL 3903 [0.5 credit]
Independent Study
Essays and/or examinations based on a list of readings provided by the instructor.
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3906 [0.5 credit]
Independent Study
Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3907 [0.5 credit]
Independent Study
Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3908 [0.5 credit]
Independent Study
Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 4003 [0.5 credit]
Seminar in philosophy Before the Modern Period
Detailed study of selected philosophers or issues in philosophy before the modern period.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4004 [0.5 credit]
Seminar in philosophy Before the Modern Period
Detailed study of selected philosophers or issues in philosophy before the modern period.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4005 [0.5 credit]
Seminar in Modern Philosophy
Detailed study of selected philosophers or issues in modern philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4006 [0.5 credit]
Seminar in Modern Philosophy
Detailed study of selected philosophers or issues in modern philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4007 [0.5 credit]
Seminar in Contemporary Philosophy
Detailed study of selected philosophers or issues in contemporary philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5500, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4008 [0.5 credit]
Seminar in Contemporary Philosophy
Detailed study of selected philosophers or issues in contemporary philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5500, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4055 [0.5 credit]
Lexical Semantics
Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.
Also listed as LING 4510.
Precludes additional credit for LING 4055 (no longer offered).
Prerequisite(s): LING 3505 or PHIL 3506.
Also offered at the graduate level, with different requirements, as LING 5510 and PHIL 5660, for which additional credit is precluded.
Seminars three hours a week.
PHIL 4100 [0.5 credit]
Special Topic
Detailed study of a special topic in philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5000, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4210 [0.5 credit]
Seminar in Philosophy of Language or Linguistics
Detailed study of selected issues or the work of selected philosophers in philosophy of language or on philosophical topics in linguistics.
Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5200, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4220 [0.5 credit]
Seminar in philosophy of Mind or Cognition
Detailed study of selected issues or the work of selected philosophers in philosophy of mind or philosophical aspects of cognition.
Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5200, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4230 [0.5 credit]
Seminar in Metaphysics, Epistemology, or Philosophy of Science
Detailed study of selected issues or the work of selected philosophers in metaphysics, epistemology, or philosophy of science.
Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5250, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4240 [0.5 credit]
Seminar in Ethical Theory or Meta-Ethics
Detailed study of selected issues pertaining to ethical theory or issues of meta-ethics such as realism, relativism, moral knowledge.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5300, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4250 [0.5 credit]
Seminar in Ethics or Moral Philosophy
Detailed study of selected issues in ethics or moral philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5350, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4260 [0.5 credit]
Seminar in Social or Political Philosophy
Detailed study of selected issues in social or political philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5350, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4300 [0.5 credit]
Special Topic in Applied Ethics
Detailed study of a special topic in applied ethics.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4305 [0.5 credit]
Special Topic in Aesthetics or Philosophy of Art
Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.
PHIL 4406 [0.5 credit]
**Special Topic in Aesthetics or Philosophy of Art**
Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4407 [0.5 credit]
**Special Topic in Philosophy of Law**
Detailed study of a special topic in philosophy of law.
Also listed as LAWS 4103.
Prerequisite(s): eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.
Seminars three hours a week.

PHIL 4408 [0.5 credit]
**Special Topic in Philosophy of Law**
Detailed study of a special topic in philosophy of law.
Also listed as LAWS 4104.
Prerequisite(s): eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.
Seminars three hours a week.

PHIL 4503 [0.5 credit]
**Special Topic in Philosophy of Computing**
Detailed study of a special topic in philosophy of computing.
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4504 [0.5 credit]
**Special Topic in Philosophy of Computing**
Detailed study of a special topic in philosophy of computing.
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4505 [0.5 credit]
**Formal Semantics**
Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.
Also listed as LING 4505.
Precludes additional credit for LALS 4507 (no longer offered).
Prerequisite(s): LALS 3505 or LING 3505 or PHIL 3506 or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Seminars three hours a week.

PHIL 4603 [0.5 credit]
**Special Topic in Feminist Philosophy**
Detailed study of a special topic in feminist philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4604 [0.5 credit]
**Special Topic in Feminist Philosophy**
Detailed study of a special topic in feminist philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4606 [0.5 credit]
**Special Topic in Continental Philosophy**
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4607 [0.5 credit]
**Special Topic in Continental Philosophy**
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4701 [0.5 credit]
**Special Topic in Logic**
Detailed study of a special topic in Logic.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4702 [0.5 credit]
**Special Topic in Logic**
Detailed study of a special topic in Logic.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4703 [0.5 credit]
**Special Topic in Philosophical Logic**
Detailed study of a special topic in Philosophical Logic.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4704 [0.5 credit]
**Special Topic in Philosophical Logic**
Detailed study of a special topic in Philosophical Logic.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.
PHIL 4900 [1.0 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4901 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4902 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4903 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4904 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4906 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

Physics

This section presents the requirements for programs in:
- Physics (Astrophysics Stream) B.Sc. Honours
- Physics (Experimental Stream) B.Sc. Honours
- Physics (Theory Stream) B.Sc. Honours
- Physics B.Sc. Major
- Applied Physics B.Sc. Honours
- Mathematics and Physics B.Sc. Double Honours
- Biology and Physics B.Sc. Combined Honours
- Chemistry and Physics B.Sc. Combined Honours
- Minor in Physics

The Department of Physics also offers the program: Engineering Physics - B.Eng. Consult the Engineering program section for details about this program.

Program Requirements

Course Categories for Physics

The program descriptions below make use of the following course categories, which are defined in the B.Sc. Regulations section.

- Approved Courses Outside the Faculties of Science and Engineering and Design
- Free Elective

Physics (Astrophysics Stream)
B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit from:
- PHYS 1001 [0.5] Foundations of Physics I & PHYS 1002 [0.5] Foundations of Physics II
- PHYS 1003 [0.5] Introductory Mechanics and & PHYS 1004 [0.5] Thermodynamics
- PHYS 1007 [0.5] Elementary University Physics I & PHYS 1008 [0.5] Elementary University Physics II (with an average grade of B- or higher)

2. 2.5 credits in:
- PHYS 2202 [0.5] Wave Motion and Optics
- PHYS 2203 [0.5] Astronomy
- PHYS 2305 [0.5] Electricity and Magnetism
- PHYS 2401 [0.5] Thermal Physics
- PHYS 2604 [0.5] Modern Physics I

3. 5.0 credits in:
- PHYS 3009 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars with Observational Astronomy
- PHYS 3308 [0.5] Electromagnetism
- PHYS 3606 [0.5] Modern Physics II
- PHYS 3701 [0.5] Elements of Quantum Mechanics
- PHYS 3802 [0.5] Advanced Dynamics
- PHYS 3807 [0.5] Mathematical Physics I
- PHYS 4201 [0.5] Astrophysics
- PHYS 4202 [0.5] Cosmology
- PHYS 4409 [0.5] Thermodynamics and Statistical Physics
- PHYS 4707 [0.5] Introduction to Quantum Mechanics I

4. 1.0 credit from:
   a. PHYS 4907 plus 0.5 credit 4000-level PHYS
   b. PHYS 4908 plus 0.5 credit 4000-level PHYS
   c. PHYS 4909 [1.0]

5. 0.5 credit in PHYS at the 4000-level or above

6. 0.5 credit in PHYS, COMP, MATH and/or STAT at the 3000-level or above

B. Credits Not Included In the Major CGPA (9.5 credits)

7. 1.0 credit from:
- BIOL 1103 [0.5] Foundations of Biology I & BIOL 1104 [0.5] Foundations of Biology II
- CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II
- CHEM 1005 [0.5] Elementary Chemistry I & CHEM 1006 [0.5] Elementary Chemistry II
- ERTH 1006 [0.5] Exploring Planet Earth & ERTH 1009 [0.5] The Earth System Through Time

8. 3.5 credits in:
- MATH 1004 [0.5] Calculus for Engineering or Physics
B.Sc. Honours (20.0 credits)  Physics (Experimental Stream)  B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

<table>
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<tr>
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<th>Course</th>
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<td>Foundations of Physics II (recommended)</td>
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<tr>
<td>&amp; PHYS 1004 [0.5]</td>
<td>Introductory Electromagnetism and Wave Motion</td>
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<td>PHYS 2604 [0.5]</td>
<td>Modern Physics I</td>
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<td>PHYS 3606 [0.5]</td>
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<tbody>
<tr>
<td>0.5</td>
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<td>Mathematical Modeling and Computational Methods</td>
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<td>1.0</td>
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<td>Introduction to Computer Science I</td>
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<tr>
<td>or</td>
<td>ECOR 1606 [0.5]</td>
<td>Problem Solving and Computers</td>
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B. Credits Not Included in the Major CGPA (9.0 credits)

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<td>&amp; ERTH 1009 [0.5]</td>
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<td>MATH 2004 [0.5]</td>
<td>Multivariable Calculus for Engineering or Physics</td>
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<td>MATH 3705 [0.5]</td>
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<td>STAT 3502 [0.5]</td>
<td>Probability and Statistics</td>
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<tr>
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<td>ECOR 1606 [0.5]</td>
<td>Problem Solving and Computers</td>
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<td>&amp; COMP 2606 [0.5]</td>
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<td>0.5</td>
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<tr>
<td>PHYS 4908 [0.5]</td>
<td>plus 0.5 credit 4000-level PHYS</td>
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<tr>
<td>PHYS 4909 [1.0]</td>
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<td>1.5</td>
<td>PHYS 4707 [0.5]</td>
<td>Introduction to Quantum Mechanics</td>
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<td>1.0</td>
<td>PHYS 4807 [0.5]</td>
<td>Fourth-Year Physics Laboratory: Selected Experiments and Workshop</td>
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<td>20.0</td>
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Physics (Theory Stream)
B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit from: 1.0
   - PHYS 1001 [0.5] Foundations of Physics I
     & PHYS 1002 [0.5] Foundations of Physics II (recommended)
   - PHYS 1003 [0.5] Introductory Mechanics and
     & PHYS 1004 [0.5] Thermodynamics
     Introductory Electromagnetism and
     Wave Motion
   - PHYS 1007 [0.5] Elementary University Physics I
     & PHYS 1008 [0.5] Elementary University Physics II
     (with an average grade of B- or higher)

2. 2.0 credits in: 2.0
   - PHYS 2202 [0.5] Wave Motion and Optics
   - PHYS 2305 [0.5] Electricity and Magnetism
   - PHYS 2401 [0.5] Thermal Physics
   - PHYS 2604 [0.5] Modern Physics I

3. 4.5 credits in: 4.5
   - PHYS 3308 [0.5] Electromagnetism
   - PHYS 3606 [0.5] Modern Physics II
   - PHYS 3701 [0.5] Elements of Quantum Mechanics
   - PHYS 3802 [0.5] Advanced Dynamics
   - PHYS 3807 [0.5] Mathematical Physics I
   - PHYS 4409 [0.5] Thermodynamics and Statistical
     Physics
   - PHYS 4707 [0.5] Introduction to Quantum Mechanics
     I
   - PHYS 4708 [0.5] Introduction to Quantum Mechanics
     II

4. 1.0 credit from: 1.0
   a. PHYS 4907 plus 0.5 credit 4000-level PHYS
   b. PHYS 4908 plus 0.5 credit 4000-level PHYS
   c. PHYS 4909 [1.0]

5. 1.0 credit in PHYS at the 4000-level or above 1.0

6. 1.0 credit in PHYS, COMP, MATH and/or STAT at the 3000-level or above 1.0

B. Credits Not Included In the Major CGPA (9.5 credits)

7. 1.0 credit from: 1.0
   - BIOL 1103 [0.5] Foundations of Biology I
   & BIOL 1104 [0.5] Foundations of Biology II
   - CHEM 1001 [0.5] General Chemistry I
     & CHEM 1002 [0.5] General Chemistry II
   - CHEM 1005 [0.5] Elementary Chemistry I
     & CHEM 1006 [0.5] Elementary Chemistry II
   - ERTH 1006 [0.5] Exploring Planet Earth
     & ERTH 1009 [0.5] The Earth System Through Time

8. 3.5 credits in: 3.5
   - MATH 1004 [0.5] Calculus for Engineering or Physics
   - MATH 1005 [0.5] Differential Equations and Infinite
     Series for Engineering or Physics
   - MATH 1104 [0.5] Linear Algebra for Engineering or
     Science
   - MATH 2004 [0.5] Multivariable Calculus for
     Engineering or Physics

9. 0.5 credit in: 0.5
   - MATH 3800 [0.5] Mathematical Modeling and
     Computational Methods

10. 1.0 credit from: 1.0
    a. COMP 1005 [0.5] Introduction to Computer Science I
    b. COMP 1006 [0.5] Introduction to Computer Science II
    or
    - ECOR 1606 [0.5] Problem Solving and Computers
      & ECOR 2606 [0.5] Numerical Methods

11. 0.5 credit at the 2000-level or higher in COMP, MATH, or PHYS 0.5

12. 0.5 credit in: 0.5
    - NSCI 1000 [0.5] Seminar in Science
    or approved courses outside the faculties of Science
      and Engineering and Design

13. 1.5 credits in approved courses outside the faculties of Science
    and Engineering and Design 1.5

14. 1.0 credit in free electives 1.0

Total Credits 20.0

Physics
B.Sc. Major (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit from: 1.0
   - PHYS 1001 [0.5] Foundations of Physics I
     & PHYS 1002 [0.5] Foundations of Physics II (recommended)
   - PHYS 1003 [0.5] Introductory Mechanics and
     & PHYS 1004 [0.5] Thermodynamics
     Introductory Electromagnetism and
     Wave Motion
   - PHYS 1007 [0.5] Elementary University Physics I
     & PHYS 1008 [0.5] Elementary University Physics II
     (with an average grade of B- or higher)

2. 2.0 credits in: 2.0
   - PHYS 2202 [0.5] Wave Motion and Optics
   - PHYS 2305 [0.5] Electricity and Magnetism
   - PHYS 2401 [0.5] Thermal Physics
   - PHYS 2604 [0.5] Modern Physics I

3. 1.0 credit in approved computer science, engineering,
   mathematics or statistics electives at the 2000-level or
   higher which may include 0.5 credit 1000-level computer
   science 1.0

4. 2.0 credits in: 2.0
   - PHYS 3007 [0.5] Third Year Physics Laboratory:
     Selected Experiments and Seminars
   - PHYS 3308 [0.5] Electromagnetism
   - PHYS 3606 [0.5] Modern Physics II
     or
   - PHYS 3608 [0.5] Modern Applied Physics
   - PHYS 3701 [0.5] Elements of Quantum Mechanics

5. 1.0 credit in PHYS at the 4000-level 1.0

6. 1.5 credit in PHYS at the 3000-level or above 1.5

7. 0.5 credit in ELEC and/or science faculty electives
   (excluding TSES) at the 3000-level or above 0.5
B. Credits Not Included In the Major CGPA (11.0 credits)

8. 1.0 credit from:
   BIOL 1103 [0.5] Foundations of Biology I
   & BIOL 1104 [0.5] Foundations of Biology II
   CHEM 1001 [0.5] General Chemistry I
   & CHEM 1002 [0.5] General Chemistry II
   CHEM 1005 [0.5] Elementary Chemistry I
   & CHEM 1006 [0.5] Elementary Chemistry II
   ERTH 1006 [0.5] Exploring Planet Earth
   & ERTH 1009 [0.5] The Earth System Through Time

9. 3.0 credits in:
   MATH 1004 [0.5] Calculus for Engineering or Physics
   MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
   MATH 1104 [0.5] Linear Algebra for Engineering or Science
   MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
   MATH 2005 [0.5] Mathematical Methods I
   STAT 2507 [0.5] Introduction to Statistical Modeling I
   or STAT 3502 [0.5] Probability and Statistics

10. 0.5 credit from:
    COMP 1005 [0.5] Introduction to Computer Science I
    ECOR 1606 [0.5] Problem Solving and Computers

11. 3.5 credits in Advanced Science Faculty Electives
    and/or approved courses outside the Faculties of Science and Engineering selected in consultation with
    the Department to complement the study of physics;
    these credits may be used with an additional 0.5 credit to complete the requirements of a minor designation

12. 0.5 credit from:
    NSCI 1000 [0.5] Seminar in Science
    Approved courses outside the faculties of Science and Engineering and Design

13. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design

14. 1.0 credit in free electives

Total Credits 20.0

Applied Physics
B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit from:
   PHYS 1001 [0.5] Foundations of Physics I
   & PHYS 1002 [0.5] Foundations of Physics II
   (recommended)
   PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics
   & PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion
   PHYS 1007 [0.5] Elementary University Physics I
   & PHYS 1008 [0.5] Elementary University Physics II
   (with an average grade of B- or higher)

2. 2.0 credits in:
   PHYS 2202 [0.5] Wave Motion and Optics
   PHYS 2305 [0.5] Electricity and Magnetism
   PHYS 2401 [0.5] Thermal Physics
   PHYS 2604 [0.5] Modern Physics I

3. 1.0 credit in:
   PHYS 2604 [0.5] Modern Physics I

4. 0.5 credit:
   ELEC 2501 [0.5] Circuits and Signals
   ELEC 2507 [0.5] Electronics I

5. 4.0 credits in:
   ELEC 2507 [0.5] Numerical Methods
   MATH 3800 [0.5] Mathematical Modeling and Computational Methods
   PHYS 3308 [0.5] Electromagnetism
   PHYS 3608 [0.5] Modern Applied Physics
   PHYS 3701 [0.5] Elements of Quantum Mechanics
   PHYS 3802 [0.5] Advanced Dynamics
   PHYS 3807 [0.5] Mathematical Physics I
   PHYS 4008 [0.5] Fourth-Year Physics Laboratory: Selected Experiments and Workshop
   PHYS 4707 [0.5] Introduction to Quantum Mechanics I

6. 1.0 credit from:
   PHYS 3207 [0.5] Topics in Biophysics
   PHYS 4203 [0.5] Physical Applications of Fourier Analysis
   PHYS 4208 [0.5] Modern Optics
   PHYS 4608 [0.5] Nuclear Physics
   PHYS 4807 [0.5] Statistical Data Analysis Techniques for Physics

7. 0.5 credit:
   ELEC 3908 [0.5] Physical Electronics
   COMP at the 3000-level
   PHYS at the 4000-level

8. 1.0 credit from:
   a. PHYS 4907 plus 0.5 credit 4000-level PHYS
   b. PHYS 4908 plus 0.5 credit 4000-level PHYS
   c. PHYS 4909 [1.0]

B. Credits Not Included in the Major CGPA (9.0 credits)

9. 1.0 credit from:
   BIOL 1103 [0.5] Foundations of Biology I
   & BIOL 1104 [0.5] Foundations of Biology II
   CHEM 1001 [0.5] General Chemistry I
   & CHEM 1002 [0.5] General Chemistry II
   CHEM 1005 [0.5] Elementary Chemistry I
   & CHEM 1006 [0.5] Elementary Chemistry II
   ERTH 1006 [0.5] Exploring Planet Earth
   & ERTH 1009 [0.5] The Earth System Through Time

10. 3.0 credits in:
    MATH 1004 [0.5] Calculus for Engineering or Physics
    MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics
    MATH 1104 [0.5] Linear Algebra for Engineering or Science
    MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics
    STAT 3502 [0.5] Probability and Statistics
    MATH 3705 [0.5] Mathematical Methods I

11. 0.5 credit from:
    COMP 1005 [0.5] Introduction to Computer Science I
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<td>MATH 1152</td>
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<td>MATH 1800</td>
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<td>Calculus and Introductory Analysis II</td>
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<td>Algebra</td>
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<td>MATH 3001</td>
<td>Real Analysis I (Honours)</td>
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<td>MATH 3008</td>
<td>Ordinary Differential Equations (Honours)</td>
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<td>MATH 3057</td>
<td>Functions of a Complex Variable (Honours)</td>
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<td>Mathematical Methods I</td>
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<tr>
<td>STAT 2655</td>
<td>Introduction to Probability with Applications (Honours)</td>
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**A. Credits Included in the Major CGPA (17.0 credits)**

**B. Credits Not Included in the Major CGPA (4.5 credits)**

**C. Credits from (0.5 credit in free electives)**

**Total Credits** 20.0
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PHYS 1003 [0.5] &amp; PHYS 1004 [0.5]</td>
<td>Introductory Mechanics and Thermodynamics</td>
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<td>PHYS 1007 [0.5] &amp; PHYS 1008 [0.5]</td>
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<td>2. 3.5 credits in:</td>
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<td>Modern Physics I</td>
</tr>
<tr>
<td>PHYS 2202 [0.5]</td>
<td>Wave Motion and Optics</td>
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<tr>
<td>PHYS 3207 [0.5]</td>
<td>Topics in Biophysics</td>
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<tr>
<td>PHYS 3701 [0.5]</td>
<td>Elements of Quantum Mechanics</td>
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<tr>
<td>3. 1.0 credit from:</td>
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<td>PHYS 3308 [0.5]</td>
<td>Electromagnetism</td>
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<td>PHYS 3606 [0.5]</td>
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<td>4. 1.0 credit from:</td>
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</tr>
<tr>
<td>PHYS 3308 [0.5]</td>
<td>Electromagnetism</td>
</tr>
<tr>
<td>PHYS 3606 [0.5]</td>
<td>Modern Physics II</td>
</tr>
<tr>
<td>PHYS 3802 [0.5]</td>
<td>Advanced Dynamics</td>
</tr>
<tr>
<td>PHYS 3807 [0.5]</td>
<td>Mathematical Physics I</td>
</tr>
<tr>
<td>PHYS 4203 [0.5]</td>
<td>Physical Applications of Fourier Analysis</td>
</tr>
<tr>
<td>PHYS 4409 [0.5]</td>
<td>Thermodynamics and Statistical Physics</td>
</tr>
<tr>
<td>PHYS 4707 [0.5]</td>
<td>Introduction to Quantum Mechanics I</td>
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<tr>
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<tr>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
</tr>
<tr>
<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
</tr>
<tr>
<td>BIOL 2200 [0.5]</td>
<td>Cell Biochemistry</td>
</tr>
<tr>
<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
</tr>
<tr>
<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
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<tr>
<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
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<tr>
<td>BIOL 3201 [0.5]</td>
<td>Cell Biology</td>
</tr>
<tr>
<td>BIOL 3104 [0.5]</td>
<td>Molecular Genetics</td>
</tr>
<tr>
<td>BIOL 3305 [0.5]</td>
<td>Human and Comparative Physiology</td>
</tr>
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<td>BIOL 3501 [0.5]</td>
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<tr>
<td>BIOL 4106 [0.5]</td>
<td>Advances in Molecular Biology</td>
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<tr>
<td>BIOL 4109 [0.5]</td>
<td>Laboratory Techniques in Molecular Genetics</td>
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<td>BIOL 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
</tr>
<tr>
<td>BIOL 4202 [0.5]</td>
<td>Mutagenesis and DNA Repair</td>
</tr>
<tr>
<td>BIOL 4301 [0.5]</td>
<td>Current Topics in Biotechnology</td>
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<tr>
<td>BIOL 4306 [0.5]</td>
<td>Animal Neurophysiology</td>
</tr>
<tr>
<td>BIOL 4309 [0.5]</td>
<td>Studies in Human Performance</td>
</tr>
<tr>
<td>BIOL 4319 [0.5]</td>
<td>Studies in Exercise Physiology</td>
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<tr>
<td>7. 1.0 credit from:</td>
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<tr>
<td>BIOL 4905 [1.0]</td>
<td>Honours Workshop</td>
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<tr>
<td>BIOL 4907 [1.0]</td>
<td>Honours Essay and Research Proposal</td>
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<tr>
<td>BIOL 4908 [1.0]</td>
<td>Honours Research Thesis</td>
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<tr>
<td>PHYS 4909 [1.0]</td>
<td>Fourth-Year Project</td>
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<tr>
<td>PHYS 4907 plus 0.5 credit 4000-level PHYS</td>
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</tr>
<tr>
<td>PHYS 4908 plus 0.5 credit 4000-level PHYS</td>
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<tr>
<td>CHEM 1001 [0.5]</td>
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</tr>
<tr>
<td>&amp; CHEM 1002 [0.5]</td>
<td>General Chemistry II</td>
</tr>
<tr>
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<tr>
<td>MATH 1004 [0.5]</td>
<td>Calculus for Engineering or Physics</td>
</tr>
<tr>
<td>MATH 1005 [0.5]</td>
<td>Differential Equations and Infinite Series for Engineering or Physics</td>
</tr>
<tr>
<td>MATH 1104 [0.5]</td>
<td>Linear Algebra for Engineering or Science</td>
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<td>STAT 2507 [0.5]</td>
<td>Introduction to Statistical Modeling I</td>
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<td>MATH 2004 [0.5]</td>
<td>Multivariable Calculus for Engineering or Physics</td>
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<td>MATH 3705 [0.5]</td>
<td>Mathematical Methods I</td>
</tr>
<tr>
<td>MATH 3800 [0.5]</td>
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<tr>
<td>11. 0.5 credit in:</td>
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<tr>
<td>COMP 1005 [0.5]</td>
<td>Introduction to Computer Science I</td>
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<tr>
<td>12. 2.0 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)</td>
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<tr>
<td>13. 0.5 credit in free electives</td>
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<td>Total Credits</td>
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### Chemistry and Physics

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<td>PHYS 1003 [0.5] &amp; PHYS 1004 [0.5]</td>
<td>Introductory Mechanics and Thermodynamics</td>
</tr>
<tr>
<td>PHYS 1007 [0.5] &amp; PHYS 1008 [0.5]</td>
<td>Elementary University Physics I and Physics II (with an average grade of B- or higher)</td>
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<tr>
<td>2. 3.0 credits in:</td>
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<tr>
<td>PHYS 2202 [0.5]</td>
<td>Wave Motion and Optics</td>
</tr>
<tr>
<td>PHYS 2305 [0.5]</td>
<td>Electricity and Magnetism</td>
</tr>
<tr>
<td>PHYS 2604 [0.5]</td>
<td>Modern Physics I</td>
</tr>
<tr>
<td>PHYS 3007 [0.5]</td>
<td>Third Year Physics Laboratory: Selected Experiments and Seminars</td>
</tr>
<tr>
<td>PHYS 3701 [0.5]</td>
<td>Elements of Quantum Mechanics</td>
</tr>
<tr>
<td>PHYS 3807 [0.5]</td>
<td>Mathematical Physics I</td>
</tr>
<tr>
<td>3. 1.5 credits from:</td>
<td>1.5</td>
</tr>
<tr>
<td>PHYS 3308 [0.5]</td>
<td>Electromagnetism</td>
</tr>
<tr>
<td>PHYS 3606 [0.5]</td>
<td>Modern Physics II</td>
</tr>
<tr>
<td>PHYS 3802 [0.5]</td>
<td>Advanced Dynamics</td>
</tr>
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</table>
The Minor in Physics is available to students registered in degree programs other than those offered by the Department of Physics. Careful attention must be paid to prerequisites.

### Requirements

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<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tr>
<td><strong>1. 0.5 credit from:</strong></td>
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</tr>
<tr>
<td>PHYS 1001 [0.5] Foundations of Physics I</td>
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</tr>
<tr>
<td>PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics</td>
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<tr>
<td>PHYS 1007 [0.5] Elementary University Physics I (with a grade of B- or higher)</td>
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<td><strong>2. 0.5 credit from:</strong></td>
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<tr>
<td>PHYS 1002 [0.5] Foundations of Physics II</td>
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<tr>
<td>PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion</td>
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</tr>
<tr>
<td>PHYS 1008 [0.5] Elementary University Physics II (with a grade of B- or higher)</td>
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<td><strong>3. 1.0 credit in:</strong></td>
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</tr>
<tr>
<td>PHYS 2604 [0.5] Modern Physics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 3701 [0.5] Elements of Quantum Mechanics</td>
<td></td>
</tr>
<tr>
<td><strong>4. 2.0 credits from:</strong></td>
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</tr>
<tr>
<td>PHYS 2202 [0.5] Wave Motion and Optics</td>
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</tr>
<tr>
<td>PHYS 2305 [0.5] Electricity and Magnetism</td>
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</tr>
<tr>
<td>PHYS 2401 [0.5] Thermal Physics</td>
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</tr>
<tr>
<td>PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars</td>
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</tr>
<tr>
<td>PHYS 3207 [0.5] Topics in Biophysics</td>
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<tr>
<td>PHYS 3308 [0.5] Electromagnetism</td>
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<td>PHYS 3606 [0.5] Modern Physics II</td>
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<tr>
<td>PHYS 3802 [0.5] Advanced Dynamics</td>
<td></td>
</tr>
<tr>
<td>PHYS 3807 [0.5] Mathematical Physics I</td>
<td></td>
</tr>
<tr>
<td><strong>B. Credits Not Included in the Major CGPA (7.0 credits)</strong></td>
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</table>

### Regulations

In addition to the program requirements described here and academic performance evaluation requirements listed below, students must satisfy the University regulations common to all undergraduate students (see the Academic Regulations section of this Calendar).

Students should consult with the School of Mathematics and Statistics when planning their program and selecting courses.

### Academic Performance Evaluation

#### Academic Performance Evaluation for Bachelor of Mathematics

The standard procedures for Academic Performance Evaluation are followed with the following additions:

- **Good Standing** at any Academic Performance Evaluation requires that the CGPA over the following courses be at least 7.00 for Honours programs and at least 5.00 for General programs:
  - MATH 1007 [0.5] Elementary Calculus I
  - or MATH 1004 [0.5] Calculus for Engineering or Physics
  - MATH 1107 [0.5] Linear Algebra I
  - or MATH 1104 [0.5] Linear Algebra for Engineering or Science
  - MATH 2007 [0.5] Elementary Calculus II

### Minor in Physics (4.0 credits)

The Minor in Physics is available to students registered in degree programs other than those offered by the Department of Physics. Careful attention must be paid to prerequisites.

#### Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 4707 [0.5] Introduction to Quantum Mechanics I</td>
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<tr>
<td><strong>4. 0.5 credit in PHYS at the 4000 level</strong></td>
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<tr>
<td><strong>5. 5.0 credits in:</strong></td>
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<tr>
<td>CHEM 1001 [0.5] General Chemistry I</td>
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<tr>
<td>CHEM 1002 [0.5] General Chemistry II</td>
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</tr>
<tr>
<td>CHEM 2103 [0.5] Physical Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 2203 [0.5] Organic Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 2204 [0.5] Organic Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 3100 [0.5] Physical Chemistry II</td>
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</tr>
<tr>
<td>CHEM 3102 [0.5] Methods of Computational Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 3503 [0.5] Inorganic Chemistry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 4102 [0.5] Advanced Topics in Physical Chemistry II</td>
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</tr>
<tr>
<td><strong>6. 0.5 credit from:</strong></td>
<td>0.5</td>
</tr>
<tr>
<td>CHEM 3106 [0.5] Computational Chemistry Methods Laboratory</td>
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<tr>
<td>CHEM 3107 [0.5] Experimental Methods in Nanoscience</td>
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<tr>
<td><strong>7. 0.5 credit in CHEM at the 4000 level</strong></td>
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<tr>
<td><strong>8. 1.0 credit from:</strong></td>
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</tr>
<tr>
<td>CHEM 4908 [1.0] Research Project and Seminar</td>
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</tr>
<tr>
<td>PHYS 4909 [1.0] Fourth-Year Project</td>
<td></td>
</tr>
<tr>
<td>PHYS 4907 plus 0.5 credit in PHYS at the 4000 level</td>
<td></td>
</tr>
<tr>
<td>PHYS 4908 plus 0.5 credit in PHYS at the 4000 level</td>
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</tr>
<tr>
<td><strong>B. Credits Not Included in the Major CGPA (7.0 credits)</strong></td>
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</tr>
<tr>
<td><strong>9. 3.0 credits in:</strong></td>
<td>3.0</td>
</tr>
<tr>
<td>MATH 1004 [0.5] Calculus for Engineering or Physics</td>
<td></td>
</tr>
<tr>
<td>MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics</td>
<td></td>
</tr>
<tr>
<td>MATH 1104 [0.5] Linear Algebra for Engineering or Science</td>
<td></td>
</tr>
<tr>
<td>MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics</td>
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</tr>
<tr>
<td>STAT 3502 [0.5] Probability and Statistics</td>
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<tr>
<td>MATH 3705 [0.5] Mathematical Methods I</td>
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<tr>
<td><strong>10. 0.5 credit from:</strong></td>
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<tr>
<td>COMP 1005 [0.5] Introduction to Computer Science I</td>
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<tr>
<td>ECOR 1606 [0.5] Problem Solving and Computers</td>
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<td><strong>11. 0.5 credit from:</strong></td>
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<tr>
<td>MATH 3800 [0.5] Mathematical Modeling and Computational Methods</td>
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<td>ECOR 2606 [0.5] Numerical Methods</td>
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<td><strong>12. 0.5 credit from:</strong></td>
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<tr>
<td>NSCI 1000 [0.5] Seminar in Science</td>
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<td>Approved courses outside the faculties of Science and Engineering and Design</td>
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<tr>
<td><strong>13. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000, if not used above)</strong></td>
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<tr>
<td><strong>14. 1.0 credit in free electives.</strong></td>
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</table>

**Total Credits**: 20.0
or MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics

MATH 2107 [0.5] Linear Algebra II

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline: students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors.

2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000).

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.

2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

Declared and Undeclared Students

Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

Change of Program within the B.Sc. Degree

Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations

Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

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<tr>
<th>Subject</th>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>Biochemistry</td>
<td>BIOC 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
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<td>BIOC 4001 [0.5]</td>
<td>Methods in Biochemistry</td>
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<tr>
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<td>BIOC 4201 [0.5]</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
</tr>
<tr>
<td>Biology</td>
<td>BIOL 1103 [0.5]</td>
<td>Foundations of Biology I</td>
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<td>BIOL 1104 [0.5]</td>
<td>Foundations of Biology II</td>
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<td>BIOL 2001 [0.5]</td>
<td>Animals: Form and Function</td>
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<td>BIOL 2002 [0.5]</td>
<td>Plants: Form and Function</td>
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<td>BIOL 2104 [0.5]</td>
<td>Introductory Genetics</td>
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<td>BIOL 2200 [0.5]</td>
<td>Cellular Biochemistry</td>
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<td>BIOL 2600 [0.5]</td>
<td>Ecology</td>
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<tr>
<td>Chemistry</td>
<td>CHEM 1001 [0.5]</td>
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<td>CHEM 1002 [0.5]</td>
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<td>CHEM 1006 [0.5]</td>
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<td>CHEM 2103 [0.5]</td>
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<td>Organic Chemistry II</td>
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<td>CHEM 2303 [0.5]</td>
<td>Analytical Chemistry II</td>
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<td>CHEM 2800 [0.5]</td>
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<td>Earth Sciences</td>
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<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>ERTH 1006</td>
<td>Exploring Planet Earth</td>
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<td>ERTH 1009</td>
<td>The Earth System Through Time</td>
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<tr>
<td>ERTH 2102</td>
<td>Mineralogy to Petrology</td>
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<td>ERTH 2404</td>
<td>Engineering Geoscience</td>
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<td>ERTH 2802</td>
<td>Field Geology I</td>
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<tr>
<td>ERTH 3111</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
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<td>ERTH 3112</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
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<td>ERTH 3806</td>
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<td>PHYS 3606</td>
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<tr>
<td>PHYS 3608</td>
<td>Modern Applied Physics</td>
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### Course Categories for B.Sc. Programs

#### Science Geography Courses
- GEOG 1010 [0.5] Global Environmental Systems
- GEOG 2006 [0.5] Introduction to Quantitative Research
- GEOG 2013 [0.5] Weather and Water
- GEOG 2014 [0.5] The Earth's Surface
- GEOG 3003 [0.5] Quantitative Geography
- GEOG 3010 [0.5] Field Methods in Physical Geography
- GEOG 3102 [0.5] Geomorphology
- GEOG 3103 [0.5] Watershed Hydrology
- GEOG 3104 [0.5] Principles of Biogeography
- GEOG 3105 [0.5] Climate and Atmospheric Change
- GEOG 3106 [0.5] Aquatic Science and Management
- GEOG 3108 [0.5] Soil Properties
- GEOG 4000 [0.5] Field Studies
- GEOG 4005 [0.5] Directed Studies in Geography
- GEOG 4013 [0.5] Cold Region Hydrology
- GEOG 4017 [0.5] Global Biogeochemical Cycles
- GEOG 4101 [0.5] Two Million Years of Environmental Change
- GEOG 4103 [0.5] Water Resources Engineering
- GEOG 4104 [0.5] Microclimatology
- GEOG 4108 [0.5] Permafrost

#### Science Psychology Courses
- PSYC 2001 [0.5] Introduction to Research Methods in Psychology
- PSYC 2002 [0.5] Introduction to Statistics in Psychology
- PSYC 2700 [0.5] Introduction to Cognitive Psychology
- PSYC 3000 [1.0] Design and Analysis in Psychological Research
- PSYC 3506 [0.5] Cognitive Development
- PSYC 3700 [1.0] Cognition (Honours Seminar)
- PSYC 3702 [0.5] Perception
- PSYC 2307 [0.5] Human Neuropsychology I
- PSYC 3307 [0.5] Human Neuropsychology II

#### Science Continuation Courses
A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

- BIOC (Biochemistry)
- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
- ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
- ENSC (Environmental Science)
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics), except PHYS 2903
- Science Geography Courses (see list above)
- Science Psychology Courses (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.
Free Electives
Free Electives are courses at the 1000-4000 level chosen from:
- BIOC (Biochemistry)
- BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
- CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
- COMP (Computer Science) except COMP 1001
- ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
- Engineering
- ENSC 2001
- FOOD (Food Science and Nutrition)
- GEOM (Geomatics)
- HLTH (Health Science)
- ISAP (Interdisciplinary Science Practice)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
- Science Geography (see list above)
- Science Psychology (see list above)
- STAT (Statistics)
- TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives
Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)
All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives
Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program
- BIOL 4810 [0.5] Education Research in Biology
- CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs
- CHEM 1004 [0.5] Drugs and the Human Body
- CHEM 1007 [0.5] Chemistry of Art and Artifacts
- ERTH 1010 [0.5] Our Dynamic Planet Earth
- ERTH 1011 [0.5] Evolution of the Earth
- ERTH 2415 [0.5] Natural Disasters
- ISCI 1001 [0.5] Introduction to the Environment

ISCI 2000 [0.5] Natural Laws
ISCI 2002 [0.5] Human Impacts on the Environment
MATH 0107 [0.5] Algebra and Geometry
PHYS 1901 [0.5] Planetary Astronomy
PHYS 1902 [0.5] From our Star to the Cosmos
PHYS 1905 [0.5] Physics Behind Everyday Life
PHYS 2903 [0.5] Physics Towards the Future

Prohibited Courses
The following courses are not acceptable for credit in any B.Sc. program:
- COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students
- MATH 0005 [0.5] Precalculus: Functions and Graphs
- MATH 0006 [0.5] Precalculus: Trigonometric Functions and Complex Numbers
- MATH 1009 [0.5] Mathematics for Business
- MATH 1119 [0.5] Linear Algebra: with Applications to Business
- MATH 1401 [0.5] Elementary Mathematics for Economics I
- MATH 1402 [0.5] Elementary Mathematics for Economics II

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy
Admission Requirements
Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.
Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.
International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Physics, Applied Physics: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Physics and Applied Physics students must successfully complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: PHYS 3999
Work/Study Pattern:

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<td>Summer O/W</td>
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</tbody>
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Legend

S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree
- Bachelor of Mathematics (B. Math.) (Honours)
- Bachelor of Mathematics (B.Math.)

Admission Requirements
B.Math Honours Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include two prerequisite courses (Advanced Functions and Calculus and Vectors).

The overall admission cut-off average and/or the prerequisite course average may be considerably higher than the stated minimum requirements for admission to the combined B.Math/M.Sc in Mathematics or Statistics.

Advanced Standing
Applications for admission beyond first year will be assessed on their individual merits. Applicants must normally be in Good Standing (see Undergraduate Calendar Section 3.0 - Academic Regulations for Degree Students) for their year level. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

B.Math Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include two prerequisite courses (Advanced Functions and Calculus and Vectors). Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing
Applications for admission beyond first year will be assessed on their individual merits. Applicants must normally be in Good Standing (see Undergraduate Calendar Section 3.0 - Academic Regulations for Degree Students) for their year level. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Mathematics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

• B.Sc. (Honours)
• B.Sc. (Major)
• B.Sc.

Admission Requirements

B. Sc. Honours Program

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

B.Sc. Major Program

B.Sc. Program

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing

For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Physics (PHYS) Courses

PHYS 1001 [0.5 credit]
Foundations of Physics I
This calculus-based course on classical mechanics covers kinematics, dynamics, gravitation, and oscillatory motion. This is a specialist course for students intending to take further courses in physics.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1002, BIT 1203, PHYS 1003, PHYS 1007.
Prerequisite(s): Grade 12 Mathematics: Advanced Functions and Grade 12 Mathematics: Calculus and Vectors or equivalent, plus one of MATH 1004 or MATH 1002 or MATH 1052 (the MATH course may be taken concurrently); or permission of the Physics Department. Grade 12 Physics is strongly recommended.
Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1002 [0.5 credit]
Foundations of Physics II
An introduction to electricity, magnetism, electromagnetic fields, and wave motion. This is a specialist course for students intending to take further courses in physics.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1004, PHYS 1008.
Prerequisite(s): PHYS 1001, or PHYS 1003, or PHYS 1007 with a grade of B-; MATH 1004 or MATH 1002 (may be taken concurrently) or MATH 2052 (may be taken concurrently); or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1003 [0.5 credit]
Introductory Mechanics and Thermodynamics
Mechanics, gravitation, oscillations, and thermodynamics. The application of calculus to solve problems in these areas of physics is introduced. This course is intended for students in the physical sciences and engineering.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1002, BIT 1203, PHYS 1001, PHYS 1007.
Prerequisite(s): Grade 12 Physics or equivalent, plus Grade 12 Mathematics: Advanced Functions or equivalent, plus one of MATH 1004 or MATH 1002 or MATH 1052 (the MATH course may be taken concurrently). Note that Grade 12 Mathematics: Calculus and Vectors is strongly recommended.
Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1004 [0.5 credit]
Introductory Electromagnetism and Wave Motion
This calculus-based course introduces potential energy, work, electricity, magnetism, oscillations and waves.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1002, PHYS 1008.
Prerequisite(s): MATH 1004, ECOR 1101 or ECOR 1053 or (ECOR 1045 and ECOR 1046) (The ECOR courses may be taken concurrently) or PHYS 1001 or PHYS 1003 or PHYS 1007 (a grade of at least B- is required for PHYS 1007), or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1007 [0.5 credit]
Elementary University Physics I
Mechanics, properties of matter, thermodynamics. Applications chosen in part from the life sciences. For students who lack the prerequisites for PHYS 1001 or PHYS 1003, or who do not intend to take upper-year courses in physics.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1002, BIT 1203, PHYS 1001, PHYS 1003.
Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent, or MATH 0107 (may be taken concurrently); or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or MATH 1007 (a grade of at least B is required for PHYS 1007), or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours per week.
PHYS 1008 [0.5 credit]

Elementary University Physics II
Electricity and magnetism, DC and AC circuits, wave motion and light. Elements of modern physics. Applications chosen in part from the life sciences. Includes: Experiential Learning Activity
Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1002, PHYS 1004. Prerequisite(s): PHYS 1001 or PHYS 1003 or PHYS 1007.
Lectures three hours a week, laboratory or tutorial three hours per week.

PHYS 1901 [0.5 credit]

Planetary Astronomy
Description of the known stellar, galactic and extra-galactic systems together with the instruments used to study them. Modern ideas concerning the structure, origin and evolution of our own planet. Formation of the Moon - Earth system. Study of the planets in our solar system. Precludes additional credit for PHYS 2203.
Lectures two and one-half hours a week.

PHYS 1902 [0.5 credit]

From our Star to the Cosmos
Starting with the Sun, the course studies its composition and source of power, then compares our Sun with the other stars in the galaxy and beyond. Modern ideas concerning the structure, origin and evolution of the universe, pulsars and supernovae are examined. Precludes additional credit for PHYS 2203.
Lectures two and one-half hours a week.

PHYS 1905 [0.5 credit]

Physics Behind Everyday Life
Examination of the physics behind everyday life. Topics may include transportation, sports, weather and climate, electricity, and sustainable energy. No science background is required. Faculty of Science students may only take this course as a free elective. Includes: Experiential Learning Activity
Online Course.

PHYS 2004 [0.5 credit]

Modern Physics for Engineers
Introduction to aspects of modern physics relevant to engineering. Thermal radiation. Concepts of relativistic kinematics. Wave-particle duality. Elements of quantum mechanics. Optical and x-ray spectra, lasers. Nuclear physics and applications. Condensed matter physics. Precludes additional credit for PHYS 2604. Prerequisite(s): PHYS 1002 or PHYS 1004 or PHYS 1008 with a grade of B- or better, plus MATH 1004 and MATH 1104 or equivalent. Restricted to B.Eng. students not in the Engineering Physics program. Students in programs other than B.Eng. must obtain permission of the Department.
Lectures three hours a week.

PHYS 2101 [0.5 credit]

Mechanics and Properties of Matter
Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall average of B- or better; MATH 1004 and MATH 1104, or MATH 1002 and MATH 1102.
Lectures three hours a week, laboratory three hours a week, tutorials (optional) once a week.

PHYS 2202 [0.5 credit]

Wave Motion and Optics
Geometrical optics. Types of waves, vibrating string and the classical wave equation. General solutions for traveling waves. Superposition and interference, coherence, wave packets, waves in 2 and 3 dimensions. Propagation of electromagnetic waves. Light and physical optics, oscillator model for dispersion, diffraction, polarization, and refraction. Includes: Experiential Learning Activity
Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1104 or MATH 1102 or MATH 2152, and MATH 2004 or MATH 2000 (may be taken concurrently).
Lectures three hours a week, laboratory three hours a week.

PHYS 2203 [0.5 credit]

Astronomy
The observational basis of astronomy. The history of astronomy, properties of light, solar system observations and stellar astronomy. Precludes additional credit for PHYS 1901 and PHYS 1902.
Prerequisite(s): PHYS 1002 or PHYS 1004 or permission of the department. PHYS 1008 with a grade of B- or better may also be used if MATH 1004 or MATH 1007 or MATH 1002 or MATH 2052 have been successfully completed.
Lectures three hours a week.
PHYS 2305 [0.5 credit]
Electricity and Magnetism
Prerequisite(s): PHYS 1001, PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or higher; MATH 2004 or MATH 2000 (may be taken concurrently).
Lectures three hours a week.

PHYS 2306 [0.5 credit]
Physics of Electrical and Electronic Measurements I
D.C. and A.C. circuit theory. Resonant circuits. Basic measuring devices, the oscilloscope; impedances, bandwidth, noise; vacuum tubes, transistors, useful approximations for circuit design; feedback, amplifiers, oscillators; operational circuits; digital circuits. Lectures emphasize the physical basis of instrument design. Laboratory emphasizes modern digital instrumentation.
Prerequisite(s): PHYS 1001, PHYS 1002 or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or better.
Lectures three hours a week, laboratory three hours a week.

PHYS 2401 [0.5 credit]
Thermal Physics
Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B-) ; plus MATH 1004 and MATH 1104 or MATH 1002 (no longer offered) and MATH 1102 (no longer offered), or MATH 2052 and MATH 2152.
Lectures three hours a week.

PHYS 2604 [0.5 credit]
Modern Physics I
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 2004.
Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1004 and MATH 1104, or MATH 1002 (no longer offered) and MATH 1102 (no longer offered) or MATH 2052 and MATH 2152.
Lectures three hours a week, laboratory three hours a week.

PHYS 2903 [0.5 credit]
Physics Towards the Future
From classical phenomena to aspects of modern physics and recent advances. Topics may include light and colour, music and sound, cell phones, the galaxy and beyond. No science background is required. Faculty of Science students may only take this course as a free elective.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Online course.

PHYS 3007 [0.5 credit]
Third Year Physics Laboratory: Selected Experiments and Seminars
Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included.
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 3008, PHYS 3009.
Prerequisite(s): PHYS 2202 and PHYS 2604, or permission of the Department.
Six hours a week.

PHYS 3008 [0.5 credit]
Third Year Physics Laboratory: Selected Experiments and Workshop
Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given.
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 3007, PHYS 3009.
Prerequisite(s): PHYS 2202 and PHYS 2604, or permission of the department.
Six hours a week.
PHYS 3009 [0.5 credit]
Third Year Physics Laboratory: Selected Experiments and Seminars with Observational Astronomy
Students complete a small number of experiments selected from astronomy, astrophysics, modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. At least one astronomy/astrophysics related experiment is required. An exercise on literature searches and student seminars on experimental and numerical methods are included.
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 3007, PHYS 3008.
Prerequisite(s): PHYS 2202, PHYS 2604 and PHYS 2203 or permission of the Department.
Six hours a week.

PHYS 3207 [0.5 credit]
Topics in Biophysics
Introduction to biophysics. Random motion of molecules and diffusion; viscosity and the circulatory system; laws of thermodynamics and physical forces responsible for chemical reactions, molecular self-assembly and recognition; enzyme kinetics and molecular machines; nerve impulse and its propagation.
Prerequisite(s): PHYS 2604 or permission of the Department.
Lectures three hours a week, tutorial or seminar one hour a week.

PHYS 3308 [0.5 credit]
Electromagnetism
Precludes additional credit for ELEC 3909.
Prerequisite(s): PHYS 2202, PHYS 2604, PHYS 2305, MATH 2004 or MATH 2008, and MATH 3705, or permission of the Department.
Lectures three hours a week.

PHYS 3402 [0.5 credit]
Heat and Thermodynamics
Zeroth, First, Second and Third Laws of Thermodynamics; enthalpy, Helmholtz and Gibbs functions and the Maxwell relations; phase transitions; thermodynamics of magnetism; cryogenics cooling by Joule-Thompson effect, adiabatic expansion of a gas, adiabatic demagnetization, helium dilution refrigeration; black body radiation; negative temperatures.
Prerequisite(s): PHYS 2101 and PHYS 2305, MATH 2007, MATH 2008, MATH 2107 and MATH 2401 or permission of the Department.
Lectures three hours a week.

PHYS 3606 [0.5 credit]
Modern Physics II
Includes: Experiential Learning Activity
Also listed as PHYS 3608.
Prerequisite(s): PHYS 2604 and PHYS 3701, or permission of the Department.
Lectures three hours a week, laboratory two hours a week.

PHYS 3608 [0.5 credit]
Modern Applied Physics
Includes: Experiential Learning Activity
Also listed as PHYS 3606.
Prerequisite(s): PHYS 2604 and PHYS 3701, or permission of the Department.
Lectures three hours a week, laboratory three hours a week.

PHYS 3701 [0.5 credit]
Elements of Quantum Mechanics
Analysis of interference experiments with waves and particles; fundamental concepts of quantum mechanics, Schrödinger equation; angular momentum, atomic beams; hydrogen atom; atomic and molecular spectroscopy; Pauli principle; simple applications in the physics of elementary particles.
Prerequisite(s): PHYS 2604, MATH 2000 [1.0] (may be taken concurrently), or MATH 2004 or MATH 2008, and MATH 3705 (may be taken concurrently), or permission of the Department.
Lectures three hours a week.

PHYS 3801 [0.5 credit]
Classical Mechanics
Introduction to Lagrangian and Hamiltonian mechanics: Poisson brackets, tensors and dyadics; rigid body rotations; introductory fluid mechanics coupled systems and normal coordinates; relativistic dynamics.
Prerequisite(s): PHYS 2101, PHYS 2202, PHYS 2305, MATH 2007, MATH 2008, MATH 2107, MATH 2401 or permission of the Department.
Lectures three hours a week.

PHYS 3802 [0.5 credit]
Advanced Dynamics
Prerequisite(s): PHYS 2202, PHYS 2604, and MATH 2004, or permission of the Department.
Lectures three hours a week.
**PHYS 3807 [0.5 credit]**
**Mathematical Physics I**
Boundary Value problems involving curvilinear coordinates; spherical harmonics, Bessel functions, Green's functions. Functions of a complex variable: analytic functions, contour integration, residue calculus. Precludes additional credit for MATH 3007 or MATH 3057. Prerequisite(s): PHYS 2202, MATH 2004, MATH 3705 or permission of the Department. Lectures three hours a week, tutorial one hour a week.

**PHYS 3808 [0.5 credit]**
**Mathematical Physics II**
Solution of second-order total differential equations by Frobenius' method. Sturm-Liouville theory. Special functions: Legendre, Bessel, Hermite, Laguerre and associated functions. Partial differential equations: method of separation of variables, eigenfunctions and eigenvalues and eigenfunction expansions. Green's function techniques for solving inhomogeneous partial differential equations. Precludes additional credit for MATH 3004, MATH 3008, MATH 3705, and PHYS 3806. Prerequisite(s): PHYS 3807 or MATH 3007 or permission of the Department. Lectures three hours a week.

**PHYS 3999 [0.0 credit]**
**Co-operative Work Term Report**
Provides practical experience for students enrolled in the Co-operative option. Students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns. Includes: Experiential Learning Activity. Prerequisite(s): registration in the Physics Co-operative education option and permission of the Department.

**PHYS 4007 [0.5 credit]**
**Fourth-Year Physics Laboratory: Selected Experiments and Seminars**
Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included. Includes: Experiential Learning Activity. Prerequisite(s): PHYS 3606 (or PHYS 3608) and registration in the Engineering Physics program. Laboratory, six hours a week.

**PHYS 4008 [0.5 credit]**
**Fourth-Year Physics Laboratory: Selected Experiments and Workshop**
Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given. Includes: Experiential Learning Activity. Prerequisite(s): PHYS 3007. Six hours a week.

**PHYS 4201 [0.5 credit]**
**Astrophysics**
Stellar evolution, including stellar modeling, main sequence stars, red giants and the end states of stars such as neutron stars and black holes. Galactic structure and dynamics. Neutrino astrophysics. Prerequisite(s): PHYS 3701, PHYS 3606 or PHYS 3608, and PHYS 2401 or PHYS 4409, or permission of the Department. (PHYS 3606 or PHYS 3608 and PHYS 4409 may be taken concurrently). Also offered at the graduate level, with different requirements, as PHYS 5401, for which additional credit is precluded. Lectures three hours a week.

**PHYS 4202 [0.5 credit]**
**Cosmology**
Observational evidence for the Big Bang. Cosmological space-time, expansion dynamics and contents of the universe. Physical processes in the expanding universe, inflation, nucleosynthesis, the cosmic microwave background, dark matter, and dark energy. Prerequisite(s): PHYS 3701, PHYS 3606 or PHYS 3608, and PHYS 2401 or PHYS 4409, or permission of the Department. (PHYS 3606 or PHYS 3608 and PHYS 4409 may be taken concurrently). Also offered at the graduate level, with different requirements, as PHYS 5402, for which additional credit is precluded. Lectures three hours per week.

**PHYS 4203 [0.5 credit]**
**Physical Applications of Fourier Analysis**
Fourier transform, convolution. Sampling theorem. Applications to imaging: descriptors of spatial resolution, filtering. Correlation, noise power. Discrete Fourier transform, FFT. Filtering of noisy signals. Image reconstruction in computed tomography and magnetic resonance. Laplace transform. Integral transforms, application to boundary value problems. Prerequisite(s): MATH 3705, or permission of the Department. Also offered at the graduate level, with different requirements, as PHYS 5313, for which additional credit is precluded. Lectures three hours a week.
PHYS 4208 [0.5 credit]  
**Modern Optics**  
Electromagnetic wave propagation; reflection, refraction; Gaussian beams, guided waves. Laser theory: stimulated emission, cavity optics, modes, gain and bandwidth; atomic and molecular lasers. Mode locking, Q switching. Diffraction theory, coherence, Fourier optics, holography, laser applications. Optical communication systems, nonlinear effects: devices, fibre sensors, integrated optics. Prerequisite(s): PHYS 2202, PHYS 3606 (or PHYS 3608), and PHYS 3308 or permission of the Department. Also offered at the graduate level, with different requirements, as PHYS 5318, for which additional credit is precluded. Lectures three hours a week.

PHYS 4307 [0.5 credit]  
**Electromagnetic Radiation**  
Electromagnetic wave propagation in a vacuum, dielectrics, conductors, and ionized gases, reflection, refraction, polarization at the plane boundary between two media; waveguide and transmission line propagation; dipole and quadrupole radiation fields; antenna systems. Electromagnetic mass, radiation pressure. Tensor notation, transformation of the electromagnetic fields. Prerequisite(s): PHYS 3308, PHYS 3801, PHYS 3807 and PHYS 3808 (except for Mathematics and Physics Double Honours students), or permission of the Department. Lectures three hours a week.

PHYS 4407 [0.5 credit]  
**Statistical Physics**  
Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics are derived, and applied in appropriate physical situations. Fluctuations. Kinetics and transport processes, including the Boltzmann transport equation and some of its applications. Prerequisite(s): PHYS 3402, PHYS 2602 or PHYS 3601, PHYS 3701 or PHYS 3602, PHYS 4707 (may be taken concurrently); or permission of the Department. Lectures three hours a week.

PHYS 4409 [0.5 credit]  
**Thermodynamics and Statistical Physics**  
The three Laws of Thermodynamics, enthalpy, Helmholtz and Gibbs functions. Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics. Precludes additional credit for PHYS 3402 and PHYS 4407. Prerequisite(s): PHYS 3701 (may be taken concurrently), MATH 2004 and MATH 3705, or permission of the Department.

PHYS 4508 [0.5 credit]  
**Solid State Physics**  
An introduction to solid state physics. Topics include crystal structure, phonons and lattice vibrations, conductors, semiconductors, insulators and superconductivity. Prerequisite(s): PHYS 3606 or PHYS 3608, and PHYS 3701, or permission of the Department. Lectures three hours a week.

PHYS 4602 [0.5 credit]  
**Physics of Elementary Particles**  
Standard Model. Properties of leptons, quarks, hadrons. Fundamental interactions: photon, gluons, W/Z bosons. Higgs boson. Conservation laws, invariance principles, quantum numbers. Decay rates and scattering cross-sections. Quantum electrodynamics and chromodynamics. Resonances. Weak interactions, CKM matrix, parity and CP violation. Neutrino masses and oscillations. Future directions. Prerequisite(s): PHYS 4707 or permission of the Department. Also offered at the graduate level, with different requirements, as PHYS 5602, for which additional credit is precluded. Lectures three hours a week.

PHYS 4608 [0.5 credit]  
**Nuclear Physics**  
Ground state properties of nuclei. Nuclear models, binding energy, properties of excited nuclei. Alpha, beta and gamma decay. Passage of radiation through matter, detectors. Nuclear reactions, cross sections, fission, fusion. Elements of neutron physics. Prerequisite(s): PHYS 3606 or PHYS 3608 or permission of the Department. Lectures three hours a week.

PHYS 4707 [0.5 credit]  
**Introduction to Quantum Mechanics I**  
The basic interpretative postulates of quantum mechanics; applications of wave mechanics and operator methods to various quantum mechanical systems; quantum mechanical treatment of angular momentum. Prerequisite(s): PHYS 3701 and PHYS 3807 or equivalent, or permission of the Department. Lectures three hours a week.

PHYS 4708 [0.5 credit]  
**Introduction to Quantum Mechanics II**  
Scattering theory and application; bound state problems; approximation methods. Prerequisite(s): PHYS 4707 or permission of the Department. Lectures three hours a week.
PHYS 4804 [0.5 credit]
Introduction to General Relativity
Special relativity using tensor analysis. Curved spacetime with physics applications which may include the solar system, stars, black holes and gravitational waves. Introduction to differential geometry and Einstein’s field equations.
Prerequisite(s): PHYS 3308, PHYS 3802 and PHYS 3807 or equivalent, or permission of the Department.
Also offered at the graduate level, with different requirements, as PHYS 5804, for which additional credit is precluded.
Lectures three hours a week.

PHYS 4807 [0.5 credit]
Statistical Data Analysis Techniques for Physics
Prerequisite(s): third year standing in a physics program and an ability to program in Python, Java, C or C++, and permission of the Department.
Also offered at the graduate level, with different requirements, as PHYS 5002, for which additional credit is precluded.
Lectures three hours a week.

PHYS 4901 [0.5 credit]
Special Topics in Physics
Each year, at the direction of the Department, a course on a special topic may be offered.
Prerequisite(s): permission of the Department.

PHYS 4907 [0.5 credit]
Fourth-Year Project
Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.
Project. Fall term only.

PHYS 4908 [0.5 credit]
Fourth-Year Project
Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.
Project. Winter term only.

PHYS 4909 [1.0 credit]
Fourth-Year Project
Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.
Project

Political Science

This section presents the requirements for programs in:

- Political Science B.A. Honours
- Political Science B.A. Combined Honours
- Political Science B.A.
- Concentration in Canadian Politics
- Concentration in Comparative Politics and Area Studies (Global North)
- Concentration in Comparative Politics and Area Studies (Global South)
- Concentration in Gender and Politics
- Concentration in International Relations
- Concentration in North American Politics
- Concentration in Political Theory
- Concentration in Public Affairs and Policy Analysis
- Specialization in Global Politics B.G.In.S. Honours
- Stream in Global Politics B.G.In.S.
- Minor in Political Science
- Mention : Français : Political Science
- Washington Center Internship Program

Program Requirements

Course Categories
The following categories of Political Science courses are used in the program descriptions:

### Canadian Government and Politics

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### Comparative Politics and International Relations

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<td>PSCI 4609 [0.5]</td>
<td>Selected Topics in European Integration Studies</td>
</tr>
<tr>
<td>PSCI 4800 [0.5]</td>
<td>Advanced International Relations Theory</td>
</tr>
<tr>
<td>PSCI 4801 [0.5]</td>
<td>Selected Problems in Global Politics</td>
</tr>
</tbody>
</table>
B.A. Honours (20.0 credits)
Political Science

A. Credits Included in the Political Science Major CGPA (9.0 credits)
1. 1.0 credit in:
   PSCI 1100 [0.5] Democracy in Theory and Practice
   & PSCI 1200 [0.5] World Politics
2. 2.0 credits in:
   PSCI 2301 [0.5] History of Political Thought I
   PSCI 2302 [0.5] History of Political Thought II
   PSCI 2701 [0.5] Introduction to Research Methods in Political Science
   PSCI 2702 [0.5] Quantitative Research Methods in Political Science
3. 1.0 credit in: Canadian Government and Politics
4. 1.0 credit in: Comparative Politics and International Relations
5. 1.0 credit in: Political Economy of Global Money and Finance
   Transatlantic Security Issues
   Politics of Citizenship and Migration
   Global Environmental Politics
   International Politics of Forced Migration
   Latin America and the World

4000-level Seminar
All courses in the range PSCI 4001 [0.5] to PSCI 4909 [1.0]

Departmental Language Requirement
The Department requires Honours students to demonstrate proficiency in at least one language other than English, normally French. Honours students are required to demonstrate such proficiency, normally through the completion of any first-year course (or its approved equivalent) in a language offered at Carleton.
For students who consider that they already have proficiency in French, the Department of Political Science conducts a French language examination twice a year, in November and February. For students who consider themselves proficient in a second language other than French, arrangements may be made to examine the student in that language, depending on faculty resource availability. Exams in languages other than French will normally be written at the same time as the French examination – twice a year, in November and February. Departmental language examinations may not be repeated in case of failure. Students whose high school transcript shows the primary language of instruction to be other than English may apply to have the examination requirement waived. For students in the Canadian concentration, French must be used to satisfy the language requirement.

Bachelor of Arts
Political Science
B.A. Honours (20.0 credits)

A. Credits Included in the Political Science Major CGPA (9.0 credits)
1. 1.0 credit in:
   PSCI 1100 [0.5] Democracy in Theory and Practice
   & PSCI 1200 [0.5] World Politics
2. 2.0 credits in:
   PSCI 2301 [0.5] History of Political Thought I
   PSCI 2302 [0.5] History of Political Thought II
   PSCI 2701 [0.5] Introduction to Research Methods in Political Science
   PSCI 2702 [0.5] Quantitative Research Methods in Political Science
3. 1.0 credit in:
4. 1.0 credit in: Comparative Politics and International Relations
5. 1.0 credit in: Political Economy of Global Money and Finance
   Transatlantic Security Issues
   Politics of Citizenship and Migration
   Global Environmental Politics
   International Politics of Forced Migration
   Latin America and the World

B. Credits Not Included in the Major CGPA (11.0 credits)
8. 8.0 credits in electives not in PSCI
9. 3.0 credits in free electives
10. Departmental language requirement must be met

Total Credits 20.0

Notes
1. At least 1.0 credit in 4000-level seminars must be completed at Carleton University.
2. Item 5: candidates with fourth-year Honours standing in Political Science and a Major CGPA of 9.00 or better may present an Honours Research Essay PSCI 4908 [1.0] on some topic involving independent investigation; they may be examined orally on this essay and must receive a grade of B- or better in this course. PSCI 4908 [1.0] must be taken at Carleton University.
3. Students who wish to present an Honours Research Essay must identify a faculty supervisor and require permission of the Supervisor of Undergraduate Studies. Students who do not write an Honours Research Essay are required to complete 1.0 credit in Political Science in the form of one or more 4000-level seminars.

Political Science
B.A. Combined Honours (20.0 credits)

A. Credits Included in the Political Science Major CGPA (7.0 credits)
1. 1.0 credit in:
   PSCI 1100 [0.5] & PSCI 1200 [0.5] World Politics
2. 2.0 credits in:
   PSCI 2301 [0.5] History of Political Thought I
   PSCI 2302 [0.5] History of Political Thought II
   PSCI 2701 [0.5] Introduction to Research Methods in Political Science
   PSCI 2702 [0.5] Quantitative Research Methods in Political Science
3. 2.0 credits in courses in Canadian Government and Politics and/or Comparative Politics and International Relations, of which at least 1.0 credit is at the 3000-level or above
4. 2.0 credits at the 4000-level which may be satisfied by either:
   a. 2.0 credits in 4000-level PSCI seminars
   b. 1.0 credit from 4000-level PSCI seminars
5. 1.0 credit in (with permission of the department).

B. Additional Credit Requirements (13.0 credits)
6. Sufficient free electives credits to make a total of 20.0 credits for the program

Total Credits: 20.0
C. Additional Requirements

<table>
<thead>
<tr>
<th>Total Credits</th>
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</tr>
</thead>
</table>

**Note:** At least 1.0 credit in 4000-level seminars must be completed at Carleton University.

### Political Science

**B.A. (15.0 credits)**

#### A. Credits Included in the Major CGPA (6.0 credits)

<table>
<thead>
<tr>
<th>1. 1.0 credit in:</th>
<th>1.0</th>
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<tbody>
<tr>
<td>PSCI 1100 [0.5] &amp; PSCI 1200 [0.5]</td>
<td>Democracy in Theory and Practice &amp; World Politics</td>
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<table>
<thead>
<tr>
<th>2. 1.0 credit from:</th>
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<tbody>
<tr>
<td>PSCI 2301 [0.5] &amp; PSCI 2302 [0.5]</td>
<td>History of Political Thought I &amp; II</td>
</tr>
</tbody>
</table>

or

| PSCI 2701 [0.5] & PSCI 2702 [0.5] | Introduction to Research Methods in Political Science & Quantitative Research Methods in Political Science |

| 3. 2.0 credits in PSCI at the 2000-level or above | 2.0 |
| 4. 2.0 credits in PSCI at the 3000-level or above | 2.0 |

#### B. Credits Not Included in the Major CGPA (9.0 credits)

| 5. 6.0 credits not in PSCI | 7.0 |
| 6. 3.0 credits in free electives | 2.0 |

**Total Credits** | 15.0

### Concentrations

The concentrations described below are open to all students in Political Science programs. The maximum number of Political Science credits that can be counted towards the degree is 12.0 credits for the Political Science B.A. Honours program, 8.0 for the Political Science B.A. program and 9.0 for the Political Science B.A. Combined Honours program. Concentrations are open to students in the Political Science B.A. program, though it may be difficult to meet the requirements of the Concentrations within the 15.0 credits required for the degree, so that courses extra to the primary degree may have to be taken.

#### Concentration in Canadian Politics (3.5 credits)

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<tr>
<th>1. 1.0 credit in:</th>
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<tbody>
<tr>
<td>PSCI 2002 [0.5] &amp; PSCI 2003 [0.5]</td>
<td>Canadian Politics and Civil Society &amp; Canadian Political Institutions</td>
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<td>Canadian politics, including at least 0.5 credit at the 4000-level for students in honours or combined honours programs chosen from:</td>
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<tr>
<td>PSCI 3000 [0.5]</td>
<td>Canadian Provincial Politics</td>
</tr>
<tr>
<td>PSCI 3004 [0.5]</td>
<td>Political Parties and Elections in Canada</td>
</tr>
<tr>
<td>PSCI 3005 [0.5]</td>
<td>Ontario Government and Politics</td>
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<tr>
<td>PSCI 3006 [0.5]</td>
<td>Social Power in Canadian Politics</td>
</tr>
<tr>
<td>PSCI 3007 [0.5]</td>
<td>Constitutional Politics in Canada</td>
</tr>
<tr>
<td>PSCI 3109 [0.5]</td>
<td>The Politics of Law and Morality</td>
</tr>
<tr>
<td>PSCI 3401 [0.5]</td>
<td>Canadian Public Administration</td>
</tr>
<tr>
<td>PSCI 3402 [0.5]</td>
<td>Canadian Public Policy</td>
</tr>
<tr>
<td>PSCI 3406 [0.5]</td>
<td>Public Affairs and Media Strategies</td>
</tr>
<tr>
<td>PSCI 3407 [0.5]</td>
<td>Public Opinion and Public Policy</td>
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<tr>
<td>PSCI 3606 [0.5]</td>
<td>Canadian Foreign Policy</td>
</tr>
</tbody>
</table>

| PSCI 3607 [0.5] | North American Security and Defence Policy |
| PSCI 4001 [0.5] | Topics in Canadian Government and Politics |
| PSCI 4003 [0.5] | Politics and the Media |
| PSCI 4005 [0.5] | Canadian Federalism |
| PSCI 4006 [0.5] | Legislatures and Representation in Canada |
| PSCI 4008 [0.5] | National Security and Intelligence in the Modern State |
| PSCI 4009 [0.5] | Quebec Politics |
| PSCI 4010 [0.5] | Executive Power in Canadian Politics |
| PSCI 4107 [0.5] | Political Participation in Canada |
| PSCI 4109 [0.5] | The Politics of the Canadian Charter of Rights and Freedoms |
| PSCI 4206 [0.5] | Indigenous Politics of North America |
| PSCI 4209 [0.5] | Westminster Democracies: Parliaments, Parties and Elections |
| PSCI 4506 [0.5] | Women and Politics in North America |
| PSCI 4607 [0.5] | Politics of North America |
| PSCI 4908 [1.0] | Honours Research Essay (with Departmental approval, for qualified Honours students on an accepted Canadian Politics theme) |

3. French must be used to satisfy the Departmental language requirement.

**Total Credits** | 3.5

#### Concentration in Comparative Politics and Area Studies (Global North) (3.5 credits)

<table>
<thead>
<tr>
<th>1. 1.0 credit in:</th>
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<tr>
<td>PSCI 2101 [0.5]</td>
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</tr>
<tr>
<td>PSCI 2102 [0.5]</td>
<td>Comparative Politics of the Global South</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>2. 2.5 credits in:</th>
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<tbody>
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<td>Comparative Politics and Area Studies (Global North), including at least 0.5 credit at the 4000-level, for students in honours or combined honours programs, chosen from:</td>
<td></td>
</tr>
<tr>
<td>PSCI 2200 [0.5]</td>
<td>Introduction to U.S. Politics</td>
</tr>
<tr>
<td>PSCI 3108 [0.5]</td>
<td>Politics of Popular Culture</td>
</tr>
<tr>
<td>PSCI 3109 [0.5]</td>
<td>The Politics of Law and Morality</td>
</tr>
<tr>
<td>PSCI 3200 [0.5]</td>
<td>U.S. Constitutional Politics</td>
</tr>
<tr>
<td>PSCI 3206 [0.5]</td>
<td>European Democracies</td>
</tr>
<tr>
<td>PSCI 3207 [0.5]</td>
<td>The Government and Politics of European Integration</td>
</tr>
<tr>
<td>PSCI 3208 [0.5]</td>
<td>Politics in Russia and Ukraine: Power and Contestation</td>
</tr>
<tr>
<td>PSCI 3209 [0.5]</td>
<td>Reconstruction and Transformation in Europe and Eurasia</td>
</tr>
<tr>
<td>PSCI 3405 [0.5]</td>
<td>Comparative Public Policy Analysis</td>
</tr>
<tr>
<td>PSCI 3406 [0.5]</td>
<td>Public Affairs and Media Strategies</td>
</tr>
<tr>
<td>PSCI 3407 [0.5]</td>
<td>Public Opinion and Public Policy</td>
</tr>
<tr>
<td>PSCI 3703 [0.5]</td>
<td>Governing in the Global Economy</td>
</tr>
<tr>
<td>PSCI 3704 [0.5]</td>
<td>Government and Politics of Central and Eastern Europe</td>
</tr>
<tr>
<td>PSCI 3801 [0.5]</td>
<td>Environmental Politics</td>
</tr>
</tbody>
</table>
### Concentration in Comparative Politics and Area Studies (Global South) (3.5 credits)

1. **1.0 credit in:**
   - PSCI 2101 [0.5] Comparative Politics of the Global North
   - PSCI 2102 [0.5] Comparative Politics of the Global South

2. **2.5 credits in** Comparative Politics and Area Studies (Global South), including at least 0.5 credit at the 4000-level, for students in honours or combined honours programs, chosen from:
   - PSCI 3100 [0.5] Politics of Development in Africa
   - PSCI 3101 [0.5] Politics of War in Africa
   - PSCI 3102 [0.5] Politics of Development in China
   - PSCI 3103 [0.5] State, Society and Economy in Northeast Asia
   - PSCI 3105 [0.5] Imperialism
   - PSCI 3203 [0.5] Government and Politics in the Middle East
   - PSCI 3204 [0.5] Politics of Latin America
   - PSCI 3205 [0.5] Mexican Politics
   - PSCI 3302 [0.5] Comparative Political Thought
   - PSCI 3502 [0.5] Gender and Politics: Global South

### Total Credits

**3.5**

### Concentration in Gender and Politics (3.5 credits)

1. **0.5 credit in:**
   - PSCI 2500 [0.5] Gender and Politics

2. **1.5 credits in** Gender and Politics core courses, including at least 0.5 credit at the 4000-level for students in honours or combined honours, chosen from:
   - PSCI 3303 [0.5] Feminist Political Theory
   - PSCI 3502 [0.5] Gender and Politics: Global South
   - PSCI 4403 [0.5] Reproductive Rights Policy in North America
   - PSCI 4500 [0.5] Gender and Globalization
   - PSCI 4501 [0.5] Politics of Identity in Europe and the Russian Area
   - PSCI 4506 [0.5] Women and Politics in North America
   - PSCI 4605 [0.5] Gender and Globalization
   - PSCI 4606 [0.5] American Foreign Policy
   - PSCI 4607 [0.5] Politics of North America
   - PSCI 4608 [0.5] European Integration and European Security
   - PSCI 4609 [0.5] Selected Topics in European Integration Studies
   - PSCI 4803 [0.5] Foreign Policies of Major East Asian Powers
   - PSCI 4807 [0.5] Politics of Citizenship and Migration
   - PSCI 4817 [0.5] International Politics of Forced Migration
   - PSCI 4819 [0.5] Latin America and the World
   - PSCI 4908 [1.0] Honours Research Essay (with Departmental approval, for qualified Honours students on an accepted Comparative Politics and Area Studies (Global South) theme)

3. **1.5 credits in** Gender and Politics core and related courses, chosen from the list above, or the following:
   - PSCI 3006 [0.5] Social Power in Canadian Politics
   - PSCI 3108 [0.5] Politics of Popular Culture

### Total Credits

**3.5**
### Concentration in International Relations (3.5 credits)

1. **1.0 credit in:**
   - PSCI 2601 [0.5] International Relations: Global Politics
   - PSCI 2602 [0.5] International Relations: Global Political Economy

2. **2.5 credits in** International Relations, including at least 0.5 credit at the 4000-level, for students in honours or combined honours programs, chosen from:
   - PSCI 3101 [0.5] Politics of War in Africa
   - PSCI 3105 [0.5] Imperialism
   - PSCI 3207 [0.5] The Causes of War
   - PSCI 3307 [0.5] The Government and Politics of European Integration
   - PSCI 3600 [0.5] International Institutions
   - PSCI 3601 [0.5] Theories of International Politics
   - PSCI 3603 [0.5] Strategic Thought and International Security
   - PSCI 3606 [0.5] Canadian Foreign Policy
   - PSCI 3607 [0.5] North American Security and Defence Policy
   - PSCI 3702 [0.5] Israeli-Palestinian Relations
   - PSCI 3703 [0.5] Governing in the Global Economy
   - PSCI 3801 [0.5] Environmental Politics
   - PSCI 3802 [0.5] Globalization and Human Rights
   - PSCI 4303 [0.5] Governmentality and Politics
   - PSCI 4500 [0.5] Gender and Globalization
   - PSCI 4601 [0.5] Foreign Policies of Soviet Successor States
   - PSCI 4603 [0.5] Analysis of International Political Economy
   - PSCI 4604 [0.5] Selected Problems in International Political Economy
   - PSCI 4605 [0.5] Gender in International Relations
   - PSCI 4606 [0.5] American Foreign Policy
   - PSCI 4607 [0.5] Politics of North America
   - PSCI 4608 [0.5] European Integration and European Security
   - PSCI 4609 [0.5] Selected Topics in European Integration Studies
   - PSCI 4800 [0.5] Advanced International Relations Theory
   - PSCI 4801 [0.5] Selected Problems in Global Politics
   - PSCI 4802 [0.5] International Politics of Africa
   - PSCI 4803 [0.5] Foreign Policies of Major East Asian Powers
   - PSCI 4805 [0.5] Political Economy of Global Money and Finance
   - PSCI 4806 [0.5] Transatlantic Security Issues
   - PSCI 4807 [0.5] Politics of Citizenship and Migration
   - PSCI 4808 [0.5] Global Environmental Politics
   - PSCI 4817 [0.5] International Politics of Forced Migration

**Total Credits:** 3.5

### Concentration in North American Politics (3.5 credits)

1. **1.0 credit in:**
   - PSCI 2200 [0.5] Introduction to U.S. Politics and
   - PSCI 2002 [0.5] Canadian Politics and Civil Society or PSCI 2003 [0.5] Political Institutions

2. **0.5 credit in** United States politics from:
   - PSCI 3108 [0.5] Politics of Popular Culture
   - PSCI 3109 [0.5] The Politics of Law and Morality
   - PSCI 3200 [0.5] U.S. Constitutional Politics
   - PSCI 3210 [0.5] Electoral Politics in the U.S.
   - PSCI 3406 [0.5] Public Affairs and Media Strategies
   - PSCI 3407 [0.5] Public Opinion and Public Policy
   - PSCI 4003 [0.5] Politics and the Media
   - PSCI 4606 [0.5] American Foreign Policy

3. **0.5 credit in** Canadian politics from:
   - PSCI 3000 [0.5] Canadian Provincial Politics
   - PSCI 3004 [0.5] Political Parties and Elections in Canada
   - PSCI 3005 [0.5] Ontario Government and Politics
   - PSCI 3006 [0.5] Social Power in Canadian Politics
   - PSCI 3007 [0.5] Constitutional Politics in Canada
   - PSCI 3108 [0.5] Politics of Popular Culture
   - PSCI 3109 [0.5] The Politics of Law and Morality
   - PSCI 3401 [0.5] Canadian Public Administration
   - PSCI 3402 [0.5] Canadian Public Policy
   - PSCI 3406 [0.5] Public Affairs and Media Strategies
   - PSCI 3407 [0.5] Public Opinion and Public Policy
   - PSCI 3606 [0.5] Canadian Foreign Policy
   - PSCI 3607 [0.5] Canadian Foreign Policy
   - PSCI 4003 [0.5] Politics and the Media
   - PSCI 4006 [0.5] Legislatures and Representation in Canada
   - PSCI 4008 [0.5] National Security and Intelligence in the Modern State
   - PSCI 4009 [0.5] Quebec Politics
   - PSCI 4107 [0.5] Political Participation in Canada
   - PSCI 4109 [0.5] The Politics of the Canadian Charter of Rights and Freedoms

4. **0.5 credit in:**
   - PSCI 3205 [0.5] Mexican Politics

5. **1.0 credit in** North American politics, from:
   - PSCI 3109 [0.5] The Politics of Law and Morality
   - PSCI 3607 [0.5] North American Security and Defence Policy
   - PSCI 4206 [0.5] Indigenous Politics of North America
   - PSCI 4403 [0.5] Reproductive Rights Policy in North America
   - PSCI 4506 [0.5] Women and Politics in North America

**Total Credits:** 3.5
Concentration in Public Affairs and Policy Analysis (3.5 credits)

### Core Courses
- PSCI 4607 [0.5] Politics of North America
- PSCI 4905 [0.5] Washington Center Seminar I
- PSCI 4906 [0.5] Washington Center Seminar II

6. For students in honours or combined honours programs, at least 0.5 credit must be at the 4000-level. With Departmental approval, qualified Honours students may substitute PSCI 4908 [1.0], on an accepted North American politics theme, for two elective courses chosen from Items 2, 3 or 4.

**Total Credits:** 3.5

### Concentration in Political Theory (3.5 credits)

1. **1.0 credit in:**
   - PSCI 2301 [0.5] History of Political Thought I
   - PSCI 2302 [0.5] History of Political Thought II

2. **2.5 credits in Political Theory, including at least 0.5 credit at the 4000-level for students in honours or combined honours, chosen from:**
   - PSCI 3300 [0.5] Politics and Literature
   - PSCI 3302 [0.5] Comparative Political Thought
   - PSCI 3303 [0.5] Feminist Political Theory
   - PSCI 3307 [0.5] Politics of Human Rights
   - PSCI 3308 [0.5] Modern Political Thought
   - PSCI 3309 [0.5] Modern Ideologies
   - PSCI 3311 [0.5] History of Muslim Political Thought
   - PSCI 3312 [0.5] Enlightenment Political Thought
   - PSCI 3709 [0.5] Ancient and Medieval Political Thought
   - PSCI 4302 [0.5] Political Thought in the Modern Muslim Middle East
   - PSCI 4303 [0.5] Governmentality and Politics
   - PSCI 4308 [0.5] History of Political Enquiry
   - PSCI 4309 [0.5] Contemporary Approaches to Political Enquiry
   - PSCI 4311 [0.5] Political Theories of Democracy and Empire I
   - PSCI 4312 [0.5] Political Theories of Democracy and Empire II
   - PSCI 4316 [0.5] Contemporary Political Theory I
   - PSCI 4317 [0.5] Contemporary Political Theory II
   - PSCI 4318 [0.5] Concepts of Political Community I
   - PSCI 4319 [0.5] Concepts of Political Community II
   - PSCI 4908 [1.0] Honours Research Essay

**Total Credits:** 3.5

### Bachelor of Global and International Studies (B.G.In.S.)

**Note:** Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

### Specialization in Global Politics

**B.G.In.S. Honours (20.0 Credits)**

**A. Credits Included in the Major CGPA (12.0 credits)**

1. **4.5 credits in:** Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
   - GINS 2010 [0.5] Globalization and International Economic Issues
   - GINS 2020 [0.5] Global Literatures
   - GINS 3010 [0.5] Global and International Theory
   - GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
   - GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. **0.0 credit in:** International Experience Requirement Preparation
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<th>Course Title</th>
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<tr>
<td>PSCI 3405</td>
<td>Comparative Political Thought</td>
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<td>PSCI 3406</td>
<td>Public Affairs and Media Strategies</td>
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<td>PSCI 3307</td>
<td>Politics of Human Rights</td>
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<td>PSCI 3302</td>
<td>Comparative Public Policy Analysis</td>
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<tr>
<td>PSCI 3209</td>
<td>Reconstruction and Transformation in Europe and Eurasia</td>
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<tr>
<td>PSCI 3208</td>
<td>Politics in Russia and Ukraine: Power and Contestation</td>
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<td>PSCI 3207</td>
<td>The Government and Politics of European Integration</td>
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<td>European Democracies</td>
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<td>PSCI 3204</td>
<td>Politics of Latin America</td>
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<td>Government and Politics in the Middle East</td>
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<td>U.S. Constitutional Politics</td>
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<td>State, Society and Economy in Northeast Asia</td>
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<td>PSCI 3102</td>
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<tr>
<td>EURR 4002</td>
<td>Current Issues in European Politics and Society</td>
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<td>Development in the Global South - Theory and Practice</td>
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<tr>
<td>PSCI 4303</td>
<td>Governmentality and Politics</td>
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<td>PSCI 4400</td>
<td>Socio-Technical Change and Public Policy Design</td>
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<td>Reproductive Rights Policy in North America</td>
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<td>PSCI 4407</td>
<td>Public Policy: Content and Creation</td>
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<td>Gender and Globalization</td>
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<td>PSCI 4501</td>
<td>Politics of Identity in Europe and the Russian Area</td>
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<tr>
<td>PSCI 4502</td>
<td>Post-Soviet States and Societies</td>
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<tr>
<td>PSCI 4503</td>
<td>Politics of Central Eurasia</td>
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<td>PSCI 4504</td>
<td>Politics of the Caucasus and Caspian Basin</td>
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<td>PSCI 4505</td>
<td>Transitions to Democracy</td>
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<td>PSCI 4506</td>
<td>Women and Politics in North America</td>
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<tr>
<td>PSCI 4601</td>
<td>Foreign Policies of Soviet Successor States</td>
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<tr>
<td>PSCI 4603</td>
<td>Analysis of International Political Economy</td>
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<tr>
<td>PSCI 4604</td>
<td>Selected Problems in International Political Economy</td>
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<tr>
<td>PSCI 4605</td>
<td>Gender in International Relations</td>
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<td>PSCI 4606</td>
<td>American Foreign Policy</td>
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<td>PSCI 4607</td>
<td>Politics of North America</td>
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<td>PSCI 4608</td>
<td>European Integration and European Security</td>
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<td>PSCI 4609</td>
<td>Selected Topics in European Integration Studies</td>
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<tr>
<td>PSCI 4800</td>
<td>Advanced International Relations Theory</td>
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<td>Selected Problems in Global Politics</td>
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<td>PSCI 4802</td>
<td>International Politics of Africa</td>
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<tr>
<td>PSCI 4803</td>
<td>Foreign Policies of Major East Asian Powers</td>
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<td>PSCI 4805</td>
<td>Political Economy of Global Money and Finance</td>
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<td>PSCI 4806</td>
<td>Transatlantic Security Issues</td>
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<td>PSCI 4807</td>
<td>Politics of Citizenship and Migration</td>
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<td>PSCI 4817</td>
<td>International Politics of Forced Migration</td>
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**B. Credits Not Included in the Major CGPA (8.0 credits)**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GINS 2000</td>
<td>Globalization</td>
</tr>
<tr>
<td>GINS 2010</td>
<td>Globalization and International Economic Issues</td>
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</tbody>
</table>

**TOTAL CREDITS 23.0**

**Stream in Global Politics**

**B.G.In.S. (15.0 credits)**

**A. Credits Included in the Major CGPA (8.0 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GINS 1000</td>
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<tr>
<td>GINS 1010</td>
<td>International Law and Politics</td>
</tr>
<tr>
<td>GINS 1020</td>
<td>Ethnography, Globalization and Culture</td>
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</table>

**B. Credits Not Included in the Major CGPA (8.0 credits)**

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<td>GINS 2010</td>
<td>Globalization and International Economic Issues</td>
</tr>
</tbody>
</table>

**TOTAL CREDITS 25.0**
**Minor in Political Science (4.0 credits)**

The Minor in Political Science is not available to students enrolled in the B.A. Honours programs in Global Politics or the B.G.In.S. Specialization or Stream in Global Politics.

**Requirements:**

1. **1.0 credit from:**
   - PSCI 1100 [0.5] Democracy in Theory and Practice
   - & PSCI 1200 [0.5] World Politics

2. **1.0 credit in PSCI at the 2000-level**
   - 1.0

3. **1.0 credit in PSCI at the 2000-level or above**
   - 1.0

4. **1.0 credit in PSCI at the 3000-level or above**
   - 1.0

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

**Mention : Français: Political Science (4.0 credits)**

Students who wish to qualify for the Mention : Français notation in Political Science may do so by taking the following pattern of courses in their degree program:

**Requirements**

1. **1.0 credit in the advanced study of the French language (a minimum of):**
   - FREN 1100 [1.0] French 3

2. **1.0 credit in:**
   - FREN 2202 [0.5] Introduction aux études littéraires 1
   - & FREN 2203 [0.5] Introduction aux études littéraires 2

3. **1.0 credit in:**
   - PSCI 3900 [1.0] Études dirigées

4. Honours students are required to take:
   - PSCI 4909 [1.0] Mémoire de recherche

**Total Credits** 4.0

**Washington Center Internship Program (2.5 credits)**

The Washington Center Internship Program is open to Honours or Combined Honours Political Science students in the third year or the first term of fourth year. Admission is open to students with at least a 9.5 GPA in Political Science. Successful completion of the program satisfies the requirements for one term of full-time study (2.5 credits). Students spend one term (fall, winter or summer) in Washington D.C. They serve four days a week as an intern in Washington D.C. and also take two seminar courses offered by faculty of The Washington Center. The normal 2.5 credit course load for participants in the programme is:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PSCI 3905</td>
<td>Washington Center Internship</td>
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<tr>
<td>PSCI 4905</td>
<td>Washington Center Seminar I</td>
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<tr>
<td>PSCI 4906</td>
<td>Washington Center Seminar II</td>
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**Total Credits** 2.5

Full information on the program and application forms can be obtained from the Department of Political Science.

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

**First-Year Seminars**

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

**Breadth Requirement**

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration or Specialization may be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice
Breadth Area 1: Culture and Communication
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not Yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits: students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.
Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Co-operative Education
For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements
Students can apply to co-op in one of two ways; directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students’ academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000
Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term.

Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).
Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Political Science: Co-op
Admission and Continuation Requirements
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the second year of the Bachelor of Arts Honours -Political Science program;
2. Obtained and maintained an overall CGPA of 9.00.

Students in B.A. Honours Political Science must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term course: PSCI 3999
Work/Study Pattern:

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<tr>
<th>Year 1</th>
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Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements
Degrees
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option
Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law (Business Law), Law (Law, Policy and Government), Political Science, Psychology, Sociology.

Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Political Science (PSCI) Courses

PSCI 1100 [0.5 credit]
Democracy in Theory and Practice
Introduction to modern political ideas such as liberty, equality, the rule of law, representation, participation (including gender aspects), the impact of these ideas on political and policy making institutions in Canada; other countries may be examined. Basic research and academic writing skills.
Precludes additional credit for PSCI 1000, PSCI 1001, and PSCI 1003.
Lectures two hours a week, tutorials one hour a week.

PSCI 1200 [0.5 credit]
World Politics
Compares politics in selected states and world regions, including political institutions and cultures, development, public policy making, and gender. Global issues and international relations among states, international organizations, and other actors. Basic research and academic writing skills.
Precludes additional credit for PSCI 1000 (no longer offered), PSCI 1002, GPOL 1000 (no longer offered) and GPOL 1500.
Lectures two hours a week, tutorials one hour a week.

PSCI 1500 [0.5 credit]
Technology, Nature, Power
Social media, self-driving cars, genetic manipulation: technology is transforming both the human experience and the natural world. This course explores interactions among technological change, the evolution of social and political order, and the transformation of the environment (for example, with climate change).
Lectures two hours a week.

PSCI 1501 [0.5 credit]
Politics of Migration
Introduction to concepts and theories that help explain the complex phenomenon of human migration, including the social and political relevance of different types of migration to Canada and in other regions and the political responses to migration and mobility today.
Lectures two hours a week, tutorials one hour a week.

PSCI 2002 [0.5 credit]
Canadian Politics and Civil Society
An examination of the cultural, social, and economic context of Canadian politics, including interest groups and social movements, regionalism, language, ethnicity, and gender.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2003 [0.5 credit]
Canadian Political Institutions
An examination of Canadian political institutions, including federalism, Parliament, the constitution, political parties and the electoral system.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.
PSCI 2101 [0.5 credit]
Comparative Politics of the Global North
Domestic politics in states of the Global North. Comparison of political and economic regimes, political institutions, actors, political processes and cultures, and patterns of public policy making.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2102 [0.5 credit]
Comparative Politics of the Global South
Introduction to domestic politics in post-colonial and developing states of the Global South. Topics may include nationalism, authoritarianism, economic development, revolution, democratization, and the politics of gender, religion, and ethnicity.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2200 [0.5 credit]
Introduction to U.S. Politics
An examination of several important aspects of the U.S. political system, including separation of powers, checks and balances, and federalism.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorial one hour a week.

PSCI 2301 [0.5 credit]
History of Political Thought I
Western political thought from classical times to the Renaissance: Plato, Aristotle, and other thinkers.
Precludes additional credit for PSCI 2300 (no longer offered).
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2302 [0.5 credit]
History of Political Thought II
Western political thought from the Renaissance: Machiavelli, Hobbes, Locke, Rousseau and other thinkers.
Precludes additional credit for PSCI 2300 [1.0] (no longer offered).
Prerequisite(s): PSCI 2301 or permission of the department.
Lectures two hours a week, tutorials one hour a week.

PSCI 2401 [0.5 credit]
Public Affairs Analysis
Introduction to central concepts and processes involved in public affairs. Exploration of public issues, policy approaches and decision-making structures using theoretical, empirical and applied approaches.
Precludes additional credit for PSCI 2400 (no longer offered).
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2500 [0.5 credit]
Gender and Politics
Introduction to gender and politics of diversity, including how feminist activism and organizing finds expression in the political process and structures of representation such as political parties, legislatures and the state.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2601 [0.5 credit]
International Relations: Global Politics
Introduction to theories, concepts and issues in global politics. Topics may include conflict and intervention, peace and security, international institutions, norms and ethics, human rights, gender, culture, and globalization.
Precludes additional credit for GPOL 1000 (no longer offered), GPOL 1500.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2602 [0.5 credit]
International Relations: Global Political Economy
Introduction to the international political economy. Topics may include contemporary changes in the global political economy, multinational corporations, foreign economic policy, global and regional economic institutions, environmental issues, international development and relations between rich and poor countries.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2701 [0.5 credit]
Introduction to Research Methods in Political Science
Introduction to the logic and design of research. Measurement and inference in qualitative and quantitative political science.
Precludes additional credit for PSCI 2700 (no longer offered).
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2702 [0.5 credit]
Quantitative Research Methods in Political Science
The logic and methods of the quantitative study of politics, with emphasis on the application and interpretation of statistical techniques for data analysis. Students are strongly encouraged to take this course the same year as PSCI 2701.
Includes: Experiential Learning Activity
Precludes additional credit for ENST 2006, GEOG 2006, PSCI 2700 (no longer offered).
Prerequisite(s): PSCI 2701 or permission of the Department.
Lectures two hours a week, tutorials one hour a week.

PSCI 3000 [0.5 credit]
Canadian Provincial Politics
A comparative examination of the nature of Canadian provincial politics. Topics include: political culture, history, party systems, electoral systems and voting behaviour.
Prerequisite(s): third-year standing.
Lectures three hours a week.
PSCI 3004 [0.5 credit]
Political Parties and Elections in Canada
The evolution of the party system, the growth of major and minor party movements and the electoral process in Canada.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3005 [0.5 credit]
Ontario Government and Politics
A survey of the political process and political institutions in Ontario.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3006 [0.5 credit]
Social Power in Canadian Politics
The role of social forces in the Canadian political process, including interest groups, social movements, elites and classes.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3007 [0.5 credit]
Constitutional Politics in Canada
The politics of the Canadian constitution. Particular attention to historical and contemporary constitutional reform.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3008 [0.5 credit]
Politics of Development in Africa
The historical background of African independence, and contemporary struggle for democracy and economic development in Africa.
Prerequisite(s): third-year standing and one of AFRI 1002, GPOL 1000, GPOL 1500, GPOL 2500 or PSCI 2102.
Lectures three hours a week.

PSCI 3009 [0.5 credit]
Politics of War in Africa
The recurrent crises of war, and political instability in Africa, along with regional and international efforts to resolve them.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3010 [0.5 credit]
Politics of Development of China
The evolving structures and processes of government in (greater) China with particular emphasis on politics in the People's Republic of China and secondary emphasis on Taiwan and Hong Kong.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3011 [0.5 credit]
Politics of Popular Culture
Examines political themes in popular culture. Cultural media may include film, literature, television, music, cartoons/comics, and the news media. Political themes may include war, ethnicity, nationalism, revolution, citizenship, gender and sexuality.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3012 [0.5 credit]
The Politics of Law and Morality
Politics of moral regulation in Canada, the United States and other jurisdictions. The treatment in law and public policy of such human rights issues as: capital punishment, sexual orientation, euthanasia, abortion, new reproductive technologies, racial discrimination, religious and equality rights.
Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003 or PSCI 2101.
Lectures three hours a week.

PSCI 3103 [0.5 credit]
State, Society and Economy in Northeast Asia
The relationship between government structures, society and the economy in Northeast Asia with particular emphasis on Japan and Korea.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3105 [0.5 credit]
Imperialism
Ideologies, practices, and legacies of western dominance over Asia, Africa, and Latin America. Examines the complexities of imperial control and the colonial relationship from the nineteenth century to present.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3107 [0.5 credit]
The Causes of War
Alternate theories of the causes of war. Such alternate perspectives as biological, social and comparative historical approaches, including the results of peace research activities of the past two decades.
Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2601.
Lectures three hours a week.

PSCI 3108 [0.5 credit]
Politics of Popular Culture
Examines political themes in popular culture. Cultural media may include film, literature, television, music, cartoons/comics, and the news media. Political themes may include war, ethnicity, nationalism, revolution, citizenship, gender and sexuality.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3109 [0.5 credit]
The Politics of Law and Morality
Politics of moral regulation in Canada, the United States and other jurisdictions. The treatment in law and public policy of such human rights issues as: capital punishment, sexual orientation, euthanasia, abortion, new reproductive technologies, racial discrimination, religious and equality rights.
Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003 or PSCI 2101.
Lectures three hours a week.

PSCI 3200 [0.5 credit]
U.S. Constitutional Politics
The central role played by the U.S. Constitution in the country's political life, from the Framers to current controversies. Includes issues of race, class and gender.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.
PSCI 3203 [0.5 credit]  
**Government and Politics in the Middle East**  
The evolution and functioning of political systems in the Middle East region, with emphasis on the problems of political stability, the impact of the West, the role of Islam, and war and peace.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3204 [0.5 credit]  
**Politics of Latin America**  
An overview of the evolution of Latin American political systems, including the impact of the European conquest, democratization, economic liberalization, state-civil society relations, gender politics, revolutionary movements, and relations with the United States.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3205 [0.5 credit]  
**Mexican Politics**  
An introduction to the politics, society and economy of Mexico. Topics include processes of democratization and economic liberalization, human rights, the environment, the role of women, labour, and indigenous peoples, and social policy. Special emphasis on Mexico's role in the North American political economy.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing and one of GPOL 1500, GPOL 2500, PSCI 2102 or PSCI 2602.  
Lectures three hours a week.

PSCI 3206 [0.5 credit]  
**European Democracies**  
A comparative examination of select controversies over democracy in specific European countries, considered within the context of 20th century historical trends, as well as contemporary political debates.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3207 [0.5 credit]  
**The Government and Politics of European Integration**  
The process of European integration; the European Union and its institutions; core EU policies, challenges to the integration process (e.g. democratic legitimacy, enlargement); theories of European integration.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3208 [0.5 credit]  
**Politics in Russia and Ukraine: Power and Contestation**  
Political development in post-Soviet Russia and Ukraine, including examination of the complicated relationship between the two states. Historical perspectives, institutional context (including federalism) and comparative insights.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3209 [0.5 credit]  
**Reconstruction and Transformation in Europe and Eurasia**  
The politics of dramatic political changes, such as revolution, secession, constitutional revision, and systemic reform. The course will include selected historical and comparative cases from Central and Eastern Europe and the former Soviet Union.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3210 [0.5 credit]  
**Electoral Politics in the U.S.**  
An overview of specific aspects of U.S. electoral politics, including presidential and congressional elections, incumbency, the two-party system, campaign spending limits, the role of the media, and voter turnout.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3300 [0.5 credit]  
**Politics and Literature**  
A study of imaginative prose in which political ideas and/or political settings dominate. Literature as political communication, the impact of literature upon politics, the peculiar value of literature in the study of politics and its shortcomings.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3302 [0.5 credit]  
**Comparative Political Thought**  
A comparative survey of political thought focusing on a range of traditions that may include readings from Aboriginal, African, Chinese, Indian, Jewish, Latin American, Muslim, and Persian perspectives.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3303 [0.5 credit]  
**Feminist Political Theory**  
Introduction to feminist philosophical responses to sexism, taking into consideration the different waves of feminist discourse. Topics may include the concept of gender, women's diversity and its implications; 'intersectionality'; gender, capitalism and the family; and new approaches to feminist knowledge and feminist agency.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3307 [0.5 credit]  
**Politics of Human Rights**  
Politics of human rights in its historical and cultural context, including: early liberal theories of natural rights; utilitarian and Marxist critiques; contemporary rights debates; different generations of rights; feminism and women's rights; cultural relativism; state sovereignty; and, problems of implementation and enforcement.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.
PSCI 3308 [0.5 credit]
Modern Political Thought
A survey of trends in modern political thought, including some of liberalism, conservatism, neo-conservatism, Marxist and neo-Marxist socialism, communitarianism, postmodernism and globalization.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3309 [0.5 credit]
Modern Ideologies
A survey of ideologies, mainly since 1900, including some of nationalism, utopian socialism, communism, fascism, populism, environmentalism and feminism.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3311 [0.5 credit]
History of Muslim Political Thought
A survey of political thought among Muslims, tracing the emergence and influence of juridical, philosophical and administrative approaches to politics on Muslim civilization.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3312 [0.5 credit]
Enlightenment Political Thought
Major Enlightenment thinkers and major themes of Enlightenment political thought. Topics may include reason, religion, toleration, liberty, equality, the foundations of political authority, autonomy, morals, taste, progress, history or commerce.
Prerequisite(s): third-year standing.
Lecture three hours a week.

PSCI 3401 [0.5 credit]
Canadian Public Administration
Study of the institutions and dynamics of government in Canada, with emphasis on political context, administrative reforms, policy development and ongoing challenges. Analysis may include federal, provincial and/or municipal levels of government.
Includes: Experiential Learning Activity
Prerequisite(s): third year standing and one of PSCI 2002, PSCI 2401, or PAPM 2000.
Lectures three hours a week.

PSCI 3402 [0.5 credit]
Canadian Public Policy
Policy communities and policy networks in Canada with particular attention paid to policy issues, the political environment, policy instruments, impact and outcomes.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003, PSCI 2401, or PAPM 2000.
Lectures three hours a week.

PSCI 3405 [0.5 credit]
Comparative Public Policy Analysis
The formation and impact of public policy: a variety of political systems as well as a variety of policy areas. Emphasis on developing skills for the analysis of policy formation and impact.
Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2101, PSCI 2400, PSCI 2401, or PAPM 2000.
Lectures three hours a week.

PSCI 3406 [0.5 credit]
Public Affairs and Media Strategies
The public affairs and issue management strategies of corporations, government departments, and other institutions in Canada from a comparative perspective.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3407 [0.5 credit]
Public Opinion and Public Policy
Theories about the origins and dynamics of public opinion, the ways in which public opinion influences government policy and decision-making, and how decision-makers are able to shape public opinion.
Prerequisite(s): PSCI 2701 and PSCI 2702.
Lectures three hours a week.

PSCI 3410 [0.5 credit]
Introduction to Political Management
Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.
Also listed as POLM 3000 and COMS 3100.
Prerequisite(s): third-year standing.
Lecture three hours a week.

PSCI 3411 [0.5 credit]
Data Analysis for Governance: Formal Approaches and Practical Realities
Finding and using data to make, manage and evaluate public policy. Emphasis will be on developing data analysis skills, as well as the use and application of substantive theories.
Prerequisite(s): PSCI 2701 and PSCI 2702.
Lectures three hours a week.

PSCI 3502 [0.5 credit]
Gender and Politics: Global South
A contemporary approach to the role of gender in political systems of the South. Topics may include gender and development, human rights, social policies, globalization, state-civil society relations, political participation and citizenship.
Prerequisite(s): third-year standing and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2102, PSCI 2500 or PSCI 3307.
Lectures three hours a week.
PSCI 3600 [0.5 credit]
International Institutions
Origins, structure and functioning of international institutions with emphasis on the United Nations as well as regional organizations. Topics include peace and security, international aid and development, human rights and the control of global resources.
Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2601 or PSCI 2602.
Lectures three hours a week.

PSCI 3601 [0.5 credit]
Theories of International Politics
Examination of the major theoretical approaches to the study of international politics. Topics may include realism, liberalism, Marxism, constructivism, feminism, and poststructuralism.
Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2601.
Lectures three hours a week.

PSCI 3603 [0.5 credit]
Strategic Thought and International Security
The ideas of classical and contemporary strategic thinkers. International security issues and concepts.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3606 [0.5 credit]
Canadian Foreign Policy
The traditions, domestic influences, objectives, capabilities, and decision-making processes, and analysis of selected contemporary issues.
Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2002, PSCI 2003, PSCI 2601 or PSCI 2602.
Lectures three hours a week.

PSCI 3607 [0.5 credit]
North American Security and Defence Policy
The evolution of Canadian and U.S. security and defence policy as it pertains to North America. Contemporary issues and development.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3608 [0.5 credit]
Migration Governance
Advanced introduction to the politics of human mobility and migration, including attempts by states and other actors to influence migration and mobility and emerging types of governance at the national, regional and global levels.
Prerequisite(s): third-year standing or permission of the Department.
Lecture three hours a week.

PSCI 3609 [0.5 credit]
Global Politics of Food
Drawing on theories of international relations, political economy, and policy-making, this course examines the global, national and local politics of food production and distribution. Topics include food security, free trade versus fair trade, the environmental sustainability of food systems, food sovereignty and food aid.
Prerequisite(s): third-year standing or permission of the Department.
Lecture three hours a week.

PSCI 3700 [0.5 credit]
Government and Politics of South Asia
Patterns of colonialism, evolving political regimes and issues in development and foreign policy in the countries of South Asia, including India, Pakistan, Bangladesh, Sri Lanka, and other member states of SAARC.
Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2102.
Lectures three hours a week.

PSCI 3702 [0.5 credit]
Israeli-Palestinian Relations
The origins and evolution of the Israeli-Palestinian conflict and peace process.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2601 or PSCI 2602.
Lectures three hours a week.

PSCI 3703 [0.5 credit]
Governing in the Global Economy
The main approaches and policy issues in the political economy of advanced industrialized states. The relationship between state and market and the ways in which national states have responded to the pressures of governing in an increasingly interdependent global economy.
Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2602.
Lectures three hours a week.

PSCI 3704 [0.5 credit]
Government and Politics of Central and Eastern Europe
A comparative examination of Central and Eastern European states and societies. Topics discussed include political institutions and processes, societal structures and collective identities, patterns of post-communist transformation, the impact of European integration, relations with Russia and post-Soviet States.
Prerequisite(s): third-year standing.
Lectures three hours a week.
PSCI 3709 [0.5 credit]
Ancient and Medieval Political Thought
The significance for political theory of the ancient and medieval controversies over nature/convention, power/knowledge, time/eternity, theory/practice, and science/mysticism. Thinkers such as Homer, the pre-Socratics, Plato and Aristotle, the neo-Platonists, Augustine, and the Scholastics.
Prerequisite(s): (PSCI 2301 and PSCI 2302) or permission of the Department.
Lectures three hours a week.

PSCI 3801 [0.5 credit]
Environmental Politics
Environmental issues in contemporary political argument. Topics include: environmental movements and green parties, environmental ethics and animal rights, economic approaches to environmental management, the politics of sustainable development, and the international politics of the environment.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3802 [0.5 credit]
Globalization and Human Rights
An examination of the various dimensions and meanings of globalization and its relationship with human rights. The main emphasis will be on the implications of the emerging global economy for economic, social, political and cultural rights.
Also listed as SOCI 3027, ANTH 3027.
Prerequisite(s): third-year standing and one of: GPOL 1500, SOCI 1010[1.0], ANTH 1003[1.0], ANTH 1010[1.0], ISSC 1001[1.0], PSCI 2601, PSCI 2602, LAWS 2105, PHIL 2103 or (ANTH 1001 and ANTH 1002), or (SOCI 1001 and SOCI 1002).
Lectures three hours a week.

PSCI 3805 [0.5 credit]
Politics of Race
The meaning, sources and practice of racialism, as well as efforts to combat it, in a comparative context. Case studies will include South Africa, the United States, and Canada.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3809 [0.5 credit]
Selected Topics in Political Science
A lecture course on a selected contemporary topic in Political Science. Topic may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3900 [1.0 credit]
Études dirigées
Une programme de lectures choisies et de travaux écrits dans le domaine de spécialisation d’un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.
Prerequisite(s): third-year standing in the Political Science Mention : Français program.

PSCI 3905 [1.5 credit]
Washington Center Internship
One-term internship at The Washington Center in D.C.; options in American politics, international affairs, and other areas. Evaluation by Washington Center faculty, but governed by Carleton University Political Science Department regulations. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210 and permission of the department.

PSCI 3906 [1.0 credit]
Full-Year Political Science Internship
Internship gives students the opportunity to work with an organization whose focus relates to politics over a full academic year. Students complete a research paper related to their internship. Students must identify an organization to host the internship and a faculty member to provide supervision.
Includes: Experiential Learning Activity
Precludes additional credit for GPOL 3100, PSCI 3907, Carleton/Leeds Parliamentary Exchange and the Washington Internship.
Prerequisite(s): third-year Honours standing with a minimum Political Science CGPA of 9.0 or permission of the Department.

PSCI 3907 [0.5 credit]
One-Term Political Science Internship
Internship gives students the opportunity to work with an organization whose focus relates to politics over one academic term. Students complete a research paper related to their internship. Students must identify an organization to host the internship and a faculty member to provide supervision.
Includes: Experiential Learning Activity
Precludes additional credit for GPOL 3100, PSCI 3906, Carleton/Leeds Parliamentary Exchange and the Washington Internship.
Prerequisite(s): third-year Honours Standing with a minimum Political Science CGPA of 9.0 or permission of the Department.

PSCI 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
PSCI 4001 [0.5 credit]  
Topics in Canadian Government and Politics  
A seminar focused on selected topics in Canadian government and politics.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4003 [0.5 credit]  
Politics and the Media  
The role of the mass media in the Canadian political system from a comparative perspective.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4005 [0.5 credit]  
Canadian Federalism  
The evolution and contemporary operation of the Canadian federal system; the social, political, economic, and structural features underlying its operational performance, resilience in crisis, and potential for adaptation.  
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, PSCI 2003 or PSCI 2101.  
Also offered at the graduate level, with different requirements, as PSCI 5101, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4006 [0.5 credit]  
Legislatures and Representation in Canada  
The role of Parliament and of the individual M.P. in terms of policy making, party discipline, and differing conceptions of representation.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5006, for which additional credit is precluded.  
Seminar three hours per week.

PSCI 4008 [0.5 credit]  
National Security and Intelligence in the Modern State  
The state's response to foreign espionage, alleged subversion, terrorism, and counterintelligence. Major focus on the Canadian experience, but with extensive use of materials chronicling the practices of KGB, CIA, BIS, ASIO, MOSSAD, etc.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4009 [0.5 credit]  
Quebec Politics  
Society, culture, economy and politics in Quebec. Special attention to the politically relevant changes since 1960 and the central place of Quebec within the Canadian federation.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4010 [0.5 credit]  
Executive Power in Canadian Politics  
Consideration of prime ministers, premiers, cabinet ministers and senior public service leadership in Canadian politics and government.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5010, for which additional credit is precluded.

PSCI 4103 [0.5 credit]  
The Modern State  
A survey of recent thinking about the state in western societies drawing on perspectives such as those of feminists, Marxists, Weberians, poststructuralists and others. Topics may include: the rise of the modern state, economic governance, the public sphere, citizenship, sovereignty and territoriality.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4104 [0.5 credit]  
Development in the Global South - Theory and Practice  
Different theoretical approaches to the concept of development in the Global South and their relevance for selected countries in Latin America, Africa and Asia.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4105 [0.5 credit]  
Selected Problems in Development in the Global South  
Topics may include global issues of trade, finance and production, changing patterns of foreign aid, and the role of microfinance, mining, non-governmental organizations, migration, anti-poverty programs and activism in promoting development.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.
PSCI 4107 [0.5 credit]  
Political Participation in Canada  
The causes and implications of political participation by individuals with special reference to Canada. Topics include citizen participation in campaign and party organizations, political protest movements, interest groups, and community associations.  
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2002, PSCI 2003, PSCI 2101, PSCI 2102, PSCI 2700, or (PSCI 2701 and PSCI 2702).  
Seminar three hours a week.

PSCI 4109 [0.5 credit]  
The Politics of the Canadian Charter of Rights and Freedoms  
The genesis and impact of the Charter of Rights and Freedoms. Particular emphasis on the politics of aboriginal, language, and equality rights.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4203 [0.5 credit]  
Southern Africa After Apartheid  
The pathology of apartheid, the reasons for its end, and prospects for democratization and development in Southern Africa in the era of globalization.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5203, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4204 [0.5 credit]  
Elections  
The conduct and meaning of elections in contemporary states. Attention to the connection of elections to concepts of representation, policy mandates, and political parties, and to electoral systems and referendums.  
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, GPOL 2500, PSCI 2003, PSCI 2101, PSCI 2102, PSCI 2700, or (PSCI 2701 and PSCI 2702).  
Also offered at the graduate level, with different requirements, as PSCI 5204, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4206 [0.5 credit]  
Indigenous Politics of North America  
Issues of governance regarding the original peoples of Canada, Mexico and the United States since the European invasion. Contemporary movements for restoration of cultural, political, socio-economic, land and self-governance rights, emphasizing domestic and international strategies.  
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, GPOL 2500, PSCI 2001, PSCI 2002, PSCI 2003, PSCI 2101, PSCI 2102, or PSCI 3205.  
Also offered at the graduate level, with different requirements, as PSCI 5100, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4207 [0.5 credit]  
Globalization, Adjustment and Democracy in Africa  
The nature of global pressures in Africa, as states go through political and economic change.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5107, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4209 [0.5 credit]  
Westminster Democracies: Parliaments, Parties and Elections  
Examination of party and parliamentary democracy in the five principal Anglophone parliamentary democracies: Australia, Canada, Ireland, New Zealand and the United Kingdom. Consideration is given to the effects of different electoral systems and institutional arrangements on electoral politics, political participation, and party organization.  
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 2500, PSCI 2003, PSCI 2101, or PSCI 2102.  
Seminar three hours a week.

PSCI 4210 [0.5 credit]  
Political Identity through Graphic Novels  
Examination of the sources and dynamics of political identity through the medium of graphic novels and graphic memoirs. Themes may include collective memory, genocide, prostitution, violent conflict, civil rights, race and ethnicity, revolution, Indigenous issues, mental health, and gender and sexuality.  
Prerequisite(s): fourth year standing or permission of the Department.  
Seminar three hours a week.
PSCI 4211 [0.5 credit]
Op-Ed Writing and Social Media as Political Engagement
The art and craft of political opinion writing and social-media engagement. An examination of contemporary online activism, interpersonal and collective online dynamics, and an imparting of the skills required for persuasive and well-researched op-ed writing. Prerequisite(s): fourth-year Honours standing or permission of the Department. Seminar three hours a week.

PSCI 4302 [0.5 credit]
Political Thought in the Modern Muslim Middle East
Contemporary secular and religious responses to the challenges of modernity. Readings include writings of Arab, Turkish, and Iranian intellectuals. Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of (PSCI 2301 and PSCI 2302) or PSCI 3311. Also offered at the graduate level, with different requirements, as PSCI 5305, for which additional credit is precluded. Seminar three hours a week.

PSCI 4303 [0.5 credit]
Governmentality and Politics
Examination of Foucault’s concept of governmentality and work which has developed this idea, especially the relevance of governmentality for global political studies. Topics may include sovereignty, biopolitics, technopolitics, neoliberalism and citizenship. Includes: Experiential Learning Activity Prerequisite(s): fourth-year Honours standing or permission of the Department. Also offered at the graduate level, with different requirements, as PSCI 5303 and SOCI 5407, for which additional credit is precluded. Seminar three hours a week.

PSCI 4308 [0.5 credit]
History of Political Enquiry
An examination of methods adopted by major thinkers in the history of political philosophy, amidst changing understandings of metaphysics and science. Thinkers to be considered may include Plato, Aristotle, Descartes, Bacon, Kant, Hegel, Nietzsche, and Heidegger, among others. Precludes additional credit for PSCI 4304 (no longer offered). Prerequisite(s): PSCI 2301 and PSCI 2302 or permission of the Department. Seminar three hours a week.

PSCI 4309 [0.5 credit]
Contemporary Approaches to Political Enquiry
An examination of contemporary critiques and developments in modern science and social science. Thinkers to be considered may include Gadamer, Strauss, Oakeshott, Voegelin, Polanyi, Feuerabend, Heidegger, Kojève, Schmitt, Foucault, and Derrida. Precludes additional credit for PSCI 4304 (no longer offered). Prerequisite(s): PSCI 2301 and PSCI 2302 or permission of the Department. Also offered at the graduate level, with different requirements, as PSCI 5309, for which additional credit is precluded. Seminar three hours a week.

PSCI 4311 [0.5 credit]
Political Theories of Democracy and Empire I
An exploration of how ancient and modern conceptions of empire differ and how the pursuit of empire abroad can undermine good government at home in political theories including Thucydides, Plato, Aristotle and Xenophon. Precludes additional credit for PSCI 4310 (no longer offered). Prerequisite(s): fourth-year Honours standing and (PSCI 2301 and PSCI 2302) or permission of the Department. Seminar three hours a week.

PSCI 4312 [0.5 credit]
Political Theories of Democracy and Empire II
An exploration of how ancient and modern conceptions of empire differ and how the pursuit of empire abroad can undermine good government at home in political theories including Machiavelli, Hobbes, Hegel, Tocqueville and Heidegger. Precludes additional credit for PSCI 4310 (no longer offered). Prerequisite(s): fourth-year Honours standing, (PSCI 2301 and PSCI 2302) and PSCI 4311 or permission of the Department. Seminar three hours a week.

PSCI 4316 [0.5 credit]
Contemporary Political Theory I
Focus on the main currents of political thought in late and post-modernity; the relation between classical and modern philosophy, tyranny and technology, existentialism and nihilism. Thinkers such as Strauss, Kojève, Nietzsche, Arendt, Heidegger and Schmitt may be read. Precludes additional credit for PSCI 4305 (no longer offered). Prerequisite(s): fourth-year Honours standing and (PSCI 2301 and PSCI 2302) or permission of the Department. Seminar three hours a week.
PSCI 4317 [0.5 credit]  
Contemporary Political Theory II  
Continues and expands themes examined in PSCI 4316, and will include post-modernism, investigations of technology and globalization, terrorism and transhumanism. Representative thinkers may include Derrida, Foucault, Deleuze, Bataille, Rosen, Voegelin, Habermas and Steiner.  
Precludes additional credit for PSCI 4305 (no longer offered).  
Prerequisite(s): fourth-year Honours standing; PSCI 2301, PSCI 2302 and PSCI 4316, or permission of the Department.  
Seminar three hours a week.

PSCI 4318 [0.5 credit]  
Concepts of Political Community I  
Critical survey of concepts of political community, including the common good, justice, citizenship, leadership, democracy, and legitimacy, from ancient, modern, and contemporary political theory.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5308, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4319 [0.5 credit]  
Concepts of Political Community II  
A continued critical survey of concepts of political community, including the common good, justice, citizenship, statesmanship, democracy, and legitimacy, from ancient, modern, and contemporary political theory.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5309, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4400 [0.5 credit]  
Socio-Technical Change and Public Policy Design  
Joint implications of contemporary science, technology and demographics for the design of public policy. The main emphasis of the course will be general patterns of change and design relating to public policy.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4403 [0.5 credit]  
Reproductive Rights Policy in North America  
The interaction between social movements, legislatures and courts in formulating reproductive rights policy in Canada, the U.S. and Mexico.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5407, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4404 [0.5 credit]  
The Design and Evolution of Public Institutions  
An examination of the emergence, development and collapse of institutional collective action in a broad historical framework, with attention to probable future scenarios for change. Readings are taken from anthropology, economics, history and empirical political theory.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4407 [0.5 credit]  
Public Policy: Content and Creation  
The content and creation of public policy. Focus on the explanation, prediction and design of policy. Perspectives and examples are drawn from a variety of frameworks and from both Canadian and non-Canadian contexts.  
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2400, PSCI 2401, PSCI 3402, PSCI 3405, PSCI 3409 or PAPM 2000.  
Seminar three hours a week.

PSCI 4408 [0.5 credit]  
Public Affairs Management and Analysis  
Theories and practice in the management of public affairs, including the environment and administration of the public sector, public opinion, and public communications.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminars three hours a week.

PSCI 4409 [0.5 credit]  
Issues in Development Management  
An examination of the application of organization theory to policy implementation and evaluation for developing and transitional systems, with an emphasis on the role of cultural differences and divergent value systems in development management.  
Prerequisite(s): ECON 3508 and fourth-year standing in the B.P.A.P.M. program and registration in either the International Studies specialization or the Development Studies specialization or permission of the Department.  
Lectures or seminars three hours a week.
PSCI 4500 [0.5 credit]
Gender and Globalization
How globalization affects women's involvement in politics and how they organize to conceptualize and pursue gender justice in official politics; grass roots projects and cultural transformations; ideology; stand-alone movements; and mixed-sex movements like nationalism and democratization.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 2500, PSCI 3500, PSCI 3502. Seminars three hours a week.

PSCI 4501 [0.5 credit]
Politics of Identity in Europe and the Russian Area
The relationships between political transformation, identity-building, ethnicity, and gender politics in post-communist states, considered in comparison with select countries in Central and/or Western Europe.
Includes: Experiential Learning Activity
Also listed as EURR 4205.
Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2500, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.
Seminar three hours a week.

PSCI 4502 [0.5 credit]
Post-Soviet States and Societies
The relationship between social forces and state structures at both the national and local levels in the USSR and the post-communist states.
Also listed as EURR 4202.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, GPOL 1000, GPOL 1500, PSCI 3209, PSCI 3704, PSCI 3705, or HIST 2600.
Seminar three hours a week.

PSCI 4503 [0.5 credit]
Politics of Central Eurasia
Examination of the Caucasus and Central Asia, from Chechnya to former Soviet republics of the region, Afghanistan and Chinese Turkestan. Interests of Russia, China, and the United States. Emphasis on underdevelopment, oil and gas, terrorism, Islam.
Includes: Experiential Learning Activity
Also listed as EURR 4207.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4504 [0.5 credit]
Politics of the Caucasus and Caspian Basin
Examination of the South Caucasus (Azerbaijan, Georgia, Armenia), the Russian-held North Caucasus, including Chechnya, and relations with Iran. Emphasis on state and society, oil and gas, transregional communications, interests of western powers, ethnic relations.
Includes: Experiential Learning Activity
Also listed as EURR 4209.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4505 [0.5 credit]
Transitions to Democracy
A comparative analysis of processes of democratization. Diverse theoretical approaches to understanding the timing, causes, nature, and limitations of democratization. Examples from Europe and Russia, Latin America, Africa, and Asia.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2102, PSCI 3100, PSCI 3204, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.
Seminar three hours a week.

PSCI 4506 [0.5 credit]
Women and Politics in North America
The efforts of women in North America to increase their political role through public activism, including in party organizations, social movements, legislatures, courts and the executive branch of government.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4507 [0.5 credit]
The Balkans since 1989
Selected topics in Balkan politics and society since the collapse of communism in 1989, focusing on the democratic transition and the EU accession process. The legacies of communist rule, democratization and the many national questions that still exist in the region.
Also listed as EURR 4102.
Prerequisite(s): fourth year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4601 [0.5 credit]
Foreign Policies of Soviet Successor States
The foreign policies of the USSR and of Russia and selected other successor states, with special emphasis on the search for a new security order.
Also listed as EURR 4208.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, GPOL 1000, GPOL 1500, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 3107, PSCI 3208, PSCI 3209, PSCI 3600, PSCI 3603, PSCI 3703.
Seminar three hours a week.
PSCI 4603 [0.5 credit]
**Analysis of International Political Economy**
Various theoretical approaches to the study of the international political economy, with a focus on historical development and changing international structures.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.
Seminar three hours a week.

PSCI 4604 [0.5 credit]
**Selected Problems in International Political Economy**
Contemporary problems and issues in the international political economy, with particular attention given to advanced industrial countries.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.
Seminar three hours a week.

PSCI 4605 [0.5 credit]
**Gender in International Relations**
Analysis of feminist approaches to international relations. Substantive issues include the role of women in war and militarization, the gender dimensions of global political economy and gender issues in international development.
Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3500, PSCI 3303 or PSCI 3502.
Seminars three hours a week.

PSCI 4606 [0.5 credit]
**American Foreign Policy**
The sources, trends and conflicting interpretations of the international roles of the United States since World War II. Foreign policy machinery and processes assessed in terms of the relative importance of perceptions, ideology, self-interest, and domestic and foreign pressures.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2101, PSCI 2601, PSCI 2602, PSCI 3200, PSCI 3201, PSCI 3603, PSCI 3703.
Seminar three hours a week.

PSCI 4607 [0.5 credit]
**Politics of North America**
A seminar examining the evolving relationship between Canada, the United States and Mexico, including political, economic, social, environmental and defence aspects.
Includes: Experiential Learning Activity
Precludes additional credit for PSCI 5607.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4608 [0.5 credit]
**European Integration and European Security**
A seminar focusing on issues related to the formation of supra-national decision-making structures in Europe.
Includes: Experiential Learning Activity
Also listed as EURR 4104.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5608, and as EURR 4104/5104, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4609 [0.5 credit]
**Selected Topics in European Integration Studies**
A seminar focusing on selected topics related to European integration in the post-World War II period.
Also listed as EURR 4106.
Prerequisite(s): fourth-year Honours standing or permission of the department.
Seminar three hours a week.

PSCI 4610 [0.5 credit]
**Politics of Migration Management**
Seminar course that critically engages with innovative policies and instruments under the umbrella of 'migration management', and the proliferation of actors (states, international organizations, NGOs, private companies etc) involved in shaping and contributing to migration governance.
Prerequisite(s): fourth-year Honours standing or permission of the department.
Seminar three hours a week.

PSCI 4701 [0.5 credit]
**Intermediate Polimetrics for Micro Data**
Research designs and statistical techniques primarily used in analyzing survey data. Selected topics may vary from year to year. Students doing Honours papers based on micro data are advised to take this course.
Includes: Experiential Learning Activity
Prerequisite(s): PSCI 2700 or (PSCI 2701 and PSCI 2702), or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5701, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4702 [0.5 credit]
**Intermediate Research Methods for Applied Political Science**
Applied methods for policy, politics and public affairs. Primarily quantitative, but may have qualitative elements.
Includes: Experiential Learning Activity
Prerequisite(s): PSCI 2700 or (PSCI 2701 and PSCI 2702), or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5702, for which additional credit is precluded.
Seminar three hours a week.
PSCI 4800 [0.5 credit]
Advanced International Relations Theory
Close reading and analysis of theoretical research in the academic discipline of International Relations; may include analysis of methodology, normative and critical theory, and key theoretical concepts such as anarchy, sovereignty, power, inequality, coloniality, security, gender.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2601, PSCI 2602, PSCI 3601, GPOL 3000.
Seminar three hours a week.

PSCI 4801 [0.5 credit]
Selected Problems in Global Politics
The application of international relations theories to specific global problems, both historical and contemporary. Selected issues may focus on one or more of conflict analysis, terrorism, the environment, migration, globalization and global civil society.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3107, PSCI 3600, PSCI 3601, PSCI 3603, and PSCI 3703.
Seminar three hours a week.

PSCI 4802 [0.5 credit]
International Politics of Africa
Focus on a particular theme related to the interactions of African states within the African subsystem and with other sectors in the international system.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3100 or PSCI 3101.
Seminar three hours a week.

PSCI 4803 [0.5 credit]
Foreign Policies of Major East Asian Powers
The foreign policies of the East Asian powers, with special attention to China and Japan; an analysis of the domestic sources of policy, capabilities, interests, decision-making processes and foreign relations.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 3102, or PSCI 3103.
Seminar three hours a week.

PSCI 4804 [0.5 credit]
Political Economy of Global Money and Finance
An exploration of the organization of the global monetary and financial system. Issues covered include the relationship between global finance and the state, the politics of world money, and the problems associated with regulating internationally-active financial institutions.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.
Also offered at the graduate level, with different requirements, as PSCI 5802, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4805 [0.5 credit]
Transatlantic Security Issues
Precludes additional credit for PSCI 5803.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2601, PSCI 3603, PSCI 3607, or GPOL 1500.
Seminar three hours a week.

PSCI 4807 [0.5 credit]
Politics of Citizenship and Migration
How flows of people — migrants, temporary workers and refugees — challenge state sovereignty, citizenship and belonging. Emphasis on role of the state, supranational structures and international organizations in migration and mobility.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4808 [0.5 credit]
Global Environmental Politics
Global politics of transboundary environmental issues such as biodiversity protection, climate change and desertification. The perspectives, actors, institutions and economic relationships affecting international policy responses to these issues.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2401, PSCI 2601, PSCI 2602, or PSCI 3801.
Seminar three hours a week.

PSCI 4809 [0.5 credit]
Honours Seminar on a Selected Topic in Political Science
A seminar on a selected contemporary topic in Political Science. Topic may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.
PSCI 4817 [0.5 credit]
International Politics of Forced Migration
The relationship between international politics and the causes, consequences and responses to forced migration, internal displacement and refugees. Seminars and case studies are used to examine the evolution of the global refugee regime and the challenges it faces today.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4819 [0.5 credit]
Latin America and the World
Latin America’s changing relations with states, international institutions and non-state actors in the Global North and South. Topics may include security, South-South cooperation, trade, investment and transnational migration and drug trafficking.
Also listed as LACS 4819.
Prerequisite(s): fourth year standing or permission from the Department.
Seminar three hours a week.

PSCI 4901 [0.5 credit]
Tutorial in a Selected Field
Tutorials or reading courses on selected topics in which seminars are not available.
Prerequisite(s): permission of the Department and agreement of an instructor.
Tutorial hours arranged.

PSCI 4902 [0.5 credit]
Tutorial in a Selected Field
Tutorials or reading courses on selected topics in which seminars are not available.
Prerequisite(s): permission of the Department and agreement of an instructor.
Tutorial hours arranged.

PSCI 4905 [0.5 credit]
Washington Center Seminar I
A seminar offered by The Washington Center, governed by Carleton regulations, and co-ordinated by Carleton’s Department of Political Science.
Includes: Experiential Learning Activity
Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210.
Seminar three hours a week.

PSCI 4906 [0.5 credit]
Washington Center Seminar II
A seminar offered by The Washington Center, governed by Carleton regulations, and co-ordinated by Carleton’s Department of Political Science.
Includes: Experiential Learning Activity
Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210.
Seminar three hours a week.

PSCI 4908 [1.0 credit]
Honours Research Essay
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Political Science with a Political Science CGPA of 9.00 or better, or permission of the Supervisor of Undergraduate Studies.

PSCI 4909 [1.0 credit]
Mémoire de recherche
Un travail de recherche dans le domaine de spécialisation d’un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.
Prerequisite(s): fourth-year Honours standing in the Political Science Mention : Français program.

Psychology
This section presents the requirements for programs in:
- Psychology B.A. Honours
- Psychology B.A. Combined Honours
- Concentration in Cognitive Psychology
- Concentration in Developmental Psychology
- Concentration in Forensic Psychology
- Concentration in Health Psychology
- Concentration in Organizational Psychology
- Concentration in Social/Personality Psychology
- Stream in Mental Health and Well-Being
- Psychology B.A.
- Psychology B.Sc. Honours
- Minor in Human Resources and Management for B.A. Honours Psychology
- Minor in Cognitive Psychology
- Minor in Developmental Psychology
- Minor in Forensic Psychology
- Minor in Health Psychology
- Minor in Social Psychology and Personality
- Minor in Organizational Psychology
- Minor in Psychology
- Certificate in Multidisciplinary Studies in Mental Health and Well-Being

Program Requirements
Psychology
B.A. Honours (20.0 credits)
A. Credits Included in the Major CGPA (9.0 credits):
1. 1.0 credit in:
   - PSYC 1001 [0.5] Introduction to Psychology I
   - PSYC 1002 [0.5] Introduction to Psychology II
2. 1.0 credit in:

UNOFFICIAL 2021-22 Undergraduate Calendar 905
Psychology

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits):

1. 0.5 credit from:
   - PSYC 2307 [0.5] Human Neuropsychology I
   - PSYC 2700 [0.5] Introduction to Cognitive Psychology

2. 0.5 credit from:
   - PSYC 2301 [0.5] Introduction to Health Psychology
   - PSYC 2801 [0.5] Organizational Psychology I

3. 0.5 credit from:
   - PSYC 2100 [0.5] Introduction to Social Psychology
   - PSYC 2400 [0.5] Introduction to Forensic Psychology
   - PSYC 2500 [0.5] Foundations of Developmental Psychology
   - PSYC 2600 [0.5] Introduction to the Study of Personality

4. 0.5 credit from:
   - PSYC 2301 [0.5] Introduction to Health Psychology
   - PSYC 2801 [0.5] Organizational Psychology I

5. 1.0 credit from:
   - PSYC 2100 [0.5] Introduction to Social Psychology
   - PSYC 2400 [0.5] Introduction to Forensic Psychology
   - PSYC 2500 [0.5] Foundations of Developmental Psychology
   - PSYC 2600 [0.5] Introduction to the Study of Personality

6. 1.0 credit in:
   - PSYC 3000 [1.0] Design and Analysis in Psychological Research

7. 2.0 credits from:
   a. Thesis pathway:
      i. 1.0 credit from:
         - PSYC 3100 [1.0] Social Psychology (Honours Seminar)
         - PSYC 3300 [1.0] Health (Honours Seminar)
         - PSYC 3400 [1.0] Forensic Psychology (Honours Seminar)
         - PSYC 3500 [1.0] Developmental Psychology (Honours Seminar)
         - PSYC 3600 [1.0] Personality (Honours Seminar)
         - PSYC 3700 [1.0] Cognition (Honours Seminar)
         - PSYC 3805 [1.0] Organizational Psychology (Honours Seminar)
      ii. 1.0 credit in:
         - PSYC 4908 [1.0] Thesis for B.A. with Honours in Psychology
   or
   b. Project pathway
      i. 1.0 credit in PSYC at 3000-level or higher
      ii. 1.0 credit in:
         - PSYC 4910 [1.0] Project for B.A. with Honours in Psychology

8. 1.0 credit in PSYC at 3000-level or higher

9. 1.0 credit in PSYC

B. Credits Not Included in the Major CGPA (11.0 credits):

10. 2.0 credits from BIOL, CHEM, COMP, ERTH, ISCI, HLTH, MATH, NEUR, PHYS, STAT, or TSES
11. 3.0 credits at the 2000 level and above, not in PSYC
12. 3.0 credits, not in PSYC
13. 3.0 credits free electives

Total Credits: 20.0

Note: Registration in the seminars in Requirement 7 a) i) requires a Major CGPA of at least 9.00. Registration in the thesis course PSYC 4908 [1.0] requires a Major CGPA of at least 10.00.
10. Sufficient free electives to make 20.0 credits total for the program

<table>
<thead>
<tr>
<th>Total Credits</th>
<th>20.0</th>
</tr>
</thead>
</table>

Notes:
1. All students in B.A. Combined Honours Psychology must complete an Honours Project in either Psychology or the other discipline.
2. Students who choose to complete PSYC 4908 or PSYC 4910 to meet Item 7 must also complete Items 2 and 6.
3. For Item 7 above, please consult with an advisor in the Department of Psychology for acceptable alternatives to PSYC 4910 and PSYC 4908. If Item 8 is completed in the other discipline, Items 2 and 6 above may be replaced by credits from the other discipline with the permission of the Department of Psychology. In this case, replacement credits in Psychology must be completed so that a minimum of 7.0 credits in Psychology is presented at graduation.

Concentration in Cognitive Psychology (3.5 credits)
This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A. Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 0.5 credit in:
   | PSYC 2700 [0.5] Introduction to Cognitive Psychology |

2. 3.0 credits from:
   | CGSC 3201 [0.5] Cognitive Processes |
   | PSYC 2307 [0.5] Human Neuropsychology I |
   | PSYC 3307 [0.5] Human Neuropsychology II |
   | PSYC 3506 [0.5] Cognitive Development |
   | PSYC 3508 [0.5] Child Language |
   | PSYC 3700 [1.0] Cognition (Honours Seminar) |
   | PSYC 3702 [0.5] Perception |
   | PSYC 3709 [0.5] Language Processing and the Brain |
   | PSYC 3710 [0.5] Introduction to Human Factors |
   | PSYC 3901 [0.5] Practicum in Psychology |
   | PSYC 3902 [0.5] Practicum in Psychology |
   | PSYC 3905 [1.0] Practicum in Psychology |
   | PSYC 4001 [0.5] Special Topics in Psychology |
   | PSYC 4003 [0.5] Origins of Modern Psychology |
   | PSYC 4700 [0.5] Advanced Topics in Cognitive Psychology |
   | PSYC 4900 [0.5] Independent Study |
   | PSYC 4902 [0.5] Independent Study |
   | PSYC 4907 [1.0] Thesis for B.Sc. with Honours in Psychology |
   | PSYC 4908 [1.0] Thesis for B.A. with Honours in Psychology |
   | PSYC 4909 [1.0] Project for B.Sc. with Honours in Psychology |

Notes:
1. If PSYC 3901, PSYC 3902 or PSYC 3905 are presented in partial fulfillment of Item 2 above, the placements must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the focus of the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of Item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Concentration in Developmental Psychology (3.5 credits)
This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A. Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 0.5 credit in:
   | PSYC 2500 [0.5] Foundations of Developmental Psychology |

2. 3.0 credits from:
   | PSYC 3500 [1.0] Developmental Psychology (Honours Seminar) |
   | PSYC 3505 [0.5] Exceptional Children |
   | PSYC 3506 [0.5] Cognitive Development |
   | PSYC 3507 [0.5] Social Development |
   | PSYC 3508 [0.5] Child Language |
   | PSYC 3509 [0.5] Adolescence and Emerging Adulthood |
   | PSYC 3901 [0.5] Practicum in Psychology |
   | PSYC 3902 [0.5] Practicum in Psychology |
   | PSYC 3905 [1.0] Practicum in Psychology |
   | PSYC 4001 [0.5] Special Topics in Psychology |
   | PSYC 4003 [0.5] Origins of Modern Psychology |
   | PSYC 4500 [0.5] Advanced Topics in Developmental Psychology |
   | PSYC 4900 [0.5] Independent Study |
   | PSYC 4902 [0.5] Independent Study |
   | PSYC 4907 [1.0] Thesis for B.Sc. with Honours in Psychology |
   | PSYC 4908 [1.0] Thesis for B.A. with Honours in Psychology |
   | PSYC 4909 [1.0] Project for B.Sc. with Honours in Psychology |
   | PSYC 4910 [1.0] Project for B.A. with Honours in Psychology |

| Total Credits | 3.5 |
Notes:

1. If PSYC 3901, PSYC 3902 or PSYC 3905 are presented in partial fulfillment of Item 2 above, the placements must be consistent with the theme of the concentration.

2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the focus of the special topic must be consistent with the theme of the concentration.

3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of Item 2 above, the focus of the independent study must be consistent with the theme of the concentration.

4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Concentration in Forensic Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 1.0 credit in:
   - PSYC 2400 [0.5] Introduction to Forensic Psychology
   - PSYC 3402 [0.5] Criminal Behaviour

2. 2.5 credits from:
   - PSYC 3400 [1.0] Forensic Psychology (Honours Seminar)
   - PSYC 3403 [0.5] Addiction
   - PSYC 3404 [0.5] Police Psychology
   - PSYC 3901 [0.5] Practicum in Psychology
   - PSYC 3902 [0.5] Practicum in Psychology
   - PSYC 3905 [1.0] Practicum in Psychology
   - PSYC 4001 [0.5] Special Topics in Psychology
   - PSYC 4003 [0.5] Origins of Modern Psychology
   - PSYC 4400 [0.5] Advanced Topics in Forensic Psychology
   - PSYC 4403 [0.5] Female Offenders
   - PSYC 4404 [0.5] Sex Offenders
   - PSYC 4900 [0.5] Independent Study
   - PSYC 4902 [0.5] Independent Study
   - PSYC 4907 [1.0] Thesis for B.Sc. with Honours in Psychology
   - PSYC 4908 [1.0] Thesis for B.A. with Honours in Psychology
   - PSYC 4909 [1.0] Project for B.Sc. with Honours in Psychology
   - PSYC 4910 [1.0] Project for B.A. with Honours in Psychology

Total Credits 3.5

Notes:

1. If PSYC 3901, PSYC 3902, or PSYC 3905 are presented in partial fulfillment of Item 2 above, the placements must be consistent with the theme of the concentration.
Concentration in Social/Personality Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 1.0 credit in:
   - PSYC 2100 [0.5] Introduction to Social Psychology
   - PSYC 2600 [0.5] Introduction to the Study of Personality

2. 2.5 credits from:
   - PSYC 3100 [1.0] Social Psychology (Honours Seminar)
   - PSYC 3104 [0.5] Intergroup Relations: The Psychology of Conflict and Violence
   - PSYC 3106 [0.5] Close Relationships
   - PSYC 3302 [0.5] Positive Psychology
   - PSYC 3405 [0.5] Psychology of Motivation and Emotion
   - PSYC 3600 [1.0] Personality (Honours Seminar)
   - PSYC 3603 [0.5] Psychology of Women
   - PSYC 3901 [0.5] Practicum in Psychology
   - PSYC 3902 [0.5] Practicum in Psychology
   - PSYC 3905 [1.0] Practicum in Psychology
   - PSYC 4001 [0.5] Special Topics in Psychology
   - PSYC 4003 [0.5] Origins of Modern Psychology
   - PSYC 4100 [0.5] Advanced Topics in Social Psychology
   - PSYC 4600 [0.5] Advanced Topics in Personality Psychology
   - PSYC 4900 [0.5] Independent Study
   - PSYC 4902 [0.5] Independent Study
   - PSYC 4907 [1.0] Thesis for B.Sc. with Honours in Psychology
   - PSYC 4908 [1.0] Thesis for B.A. with Honours in Psychology
   - PSYC 4909 [1.0] Project for B.Sc. with Honours in Psychology
   - PSYC 4910 [1.0] Project for B.A. with Honours in Psychology

Total Credits 3.5

Notes:

1. If PSYC 3901, PSYC 3902 or PSYC 3905 are presented in partial fulfillment of Item 2 above, the focus of the placement must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Concentration in Organizational Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology and the B.A Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 0.5 credit in:
   - PSYC 2801 [0.5] Organizational Psychology I

2. 3.0 credits from:
   - PSYC 2100 [0.5] Introduction to Social Psychology
   - PSYC 3801 [0.5] Organizational Psychology II
   - PSYC 3802 [0.5] Transition to Career
   - PSYC 3805 [1.0] Organizational Psychology (Honours Seminar)
   - PSYC 3901 [0.5] Practicum in Psychology
   - PSYC 3902 [0.5] Practicum in Psychology
   - PSYC 3905 [1.0] Practicum in Psychology
   - PSYC 4001 [0.5] Special Topics in Psychology
   - PSYC 4003 [0.5] Origins of Modern Psychology
   - PSYC 4801 [0.5] Occupational Health Psychology
   - PSYC 4802 [0.5] Advanced Topics in Organizational Psychology
   - PSYC 4900 [0.5] Independent Study
   - PSYC 4902 [0.5] Independent Study
   - PSYC 4907 [1.0] Thesis for B.Sc. with Honours in Psychology
   - PSYC 4908 [1.0] Thesis for B.A. with Honours in Psychology
   - PSYC 4909 [1.0] Project for B.Sc. with Honours in Psychology
   - PSYC 4910 [1.0] Project for B.A. with Honours in Psychology

Total Credits 3.5

Notes:

1. If PSYC 3901, PSYC 3902 or PSYC 3905 are presented in partial fulfillment of Item 2 above, the placements must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.
focus of the thesis or project must be consistent with the theme of the concentration.

**Stream in Mental Health and Well-Being (2.5 credits)**
The stream in Mental Health and Well-Being has limited enrollment and is restricted to students registered in the B.A. Honours Psychology program or B.Sc. Honours Psychology program with a concentration who have attained fourth-year standing, have a Major CGPA of 10.0 or above, and Departmental approval.

Students enrolled in the stream must satisfy the requirements for the Bachelor of Arts or Bachelor of Science in Psychology while satisfying the credit requirement for the concentration and the stream through appropriate choice of courses.

Students in the Concentration in Health Psychology must complete 1.0 credit from the list of concentration courses in consultation with the Department in addition to PSYC 3302 and PSYC 3604. Students in the Concentration in Social/Personality Psychology must complete 0.5 credit from the list of concentration courses in consultation with the Department in addition to PSYC 3302.

**Requirements**

<table>
<thead>
<tr>
<th>1. 2.5 credits in: PSYC 3302 [0.5]</th>
<th>Positive Psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 3604 [0.5]</td>
<td>Clinical Psychology and Mental Illness</td>
</tr>
<tr>
<td>PSYC 4330 [1.0]</td>
<td>Community Mental Health and Well-Being</td>
</tr>
<tr>
<td>PSYC 4333 [0.5]</td>
<td>Clinical Psychology: Assessment and Intervention</td>
</tr>
</tbody>
</table>

**Psychology**

**B.A. (15.0 credits)**

<table>
<thead>
<tr>
<th>A. Credits Included in the Major CGPA (6.0 credits):</th>
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</thead>
<tbody>
<tr>
<td>1. 1.0 credit in: PSYC 1001 [0.5] Introduction to Psychology I</td>
</tr>
<tr>
<td>PSYC 1002 [0.5] Introduction to Psychology II</td>
</tr>
<tr>
<td>2. 1.0 credit in: PSYC 2001 [0.5] Introduction to Research Methods in Psychology</td>
</tr>
<tr>
<td>PSYC 2002 [0.5] Introduction to Statistics in Psychology</td>
</tr>
<tr>
<td>3. 0.5 credit from: PSYC 2307 [0.5] Human Neuropsychology I</td>
</tr>
<tr>
<td>PSYC 2700 [0.5] Introduction to Cognitive Psychology</td>
</tr>
<tr>
<td>4. 0.5 credit from: PSYC 2301 [0.5] Introduction to Health Psychology</td>
</tr>
<tr>
<td>PSYC 2801 [0.5] Organizational Psychology I</td>
</tr>
<tr>
<td>5. 1.0 credit from: PSYC 2100 [0.5] Introduction to Social Psychology</td>
</tr>
<tr>
<td>PSYC 2400 [0.5] Introduction to Forensic Psychology</td>
</tr>
<tr>
<td>PSYC 2500 [0.5] Foundations of Developmental Psychology</td>
</tr>
<tr>
<td>PSYC 2600 [0.5] Introduction to the Study of Personality</td>
</tr>
<tr>
<td>6. 1.0 credit in PSYC at 3000-level or above</td>
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</table>

<table>
<thead>
<tr>
<th>B. Credits Not Included in the Major CGPA (9.0 credits):</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. 1.0 credit in PSYC</td>
</tr>
<tr>
<td>8. 3.0 credits, not in PSYC</td>
</tr>
<tr>
<td>9. 3.0 credits at the 2000-level and above, not in PSYC</td>
</tr>
<tr>
<td>10. 3.0 credits in free electives</td>
</tr>
</tbody>
</table>

**Total Credits** 15.0

**Course Categories for B.Sc. Programs**
The program description for B.Sc. Psychology makes use of the course categories defined for all B.Sc. programs (see Academic Regulations for the Bachelor of Science Degree):

- **Science Faculty Electives**
- **Science Continuation Courses**
- **Free Elective**

**Psychology**

**B.Sc. Honours (20.0 credits)**

<table>
<thead>
<tr>
<th>A. Credits Included in the Major CGPA (9.0 credits):</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 1.0 credit in: PSYC 1001 [0.5] Introduction to Psychology I</td>
</tr>
<tr>
<td>PSYC 1002 [0.5] Introduction to Psychology II</td>
</tr>
<tr>
<td>2. 1.0 credit in: PSYC 2001 [0.5] Introduction to Research Methods in Psychology</td>
</tr>
<tr>
<td>PSYC 2002 [0.5] Introduction to Statistics in Psychology</td>
</tr>
<tr>
<td>3. 0.5 credit from: PSYC 2307 [0.5] Human Neuropsychology I</td>
</tr>
<tr>
<td>PSYC 2700 [0.5] Introduction to Cognitive Psychology</td>
</tr>
<tr>
<td>4. 0.5 credit from: PSYC 2301 [0.5] Introduction to Health Psychology</td>
</tr>
<tr>
<td>PSYC 2801 [0.5] Organizational Psychology I</td>
</tr>
<tr>
<td>5. 1.0 credit from: PSYC 2100 [0.5] Introduction to Social Psychology</td>
</tr>
<tr>
<td>PSYC 2400 [0.5] Introduction to Forensic Psychology</td>
</tr>
<tr>
<td>PSYC 2500 [0.5] Foundations of Developmental Psychology</td>
</tr>
<tr>
<td>PSYC 2600 [0.5] Introduction to the Study of Personality</td>
</tr>
<tr>
<td>6. 1.0 credit in: PSYC 3000 [1.0] Design and Analysis in Psychological Research</td>
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</table>

<table>
<thead>
<tr>
<th>B. Credits Not Included in the Major CGPA (9.0 credits):</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. 2.0 credits from:</td>
</tr>
<tr>
<td>i. 1.0 credit from: PSYC 3100 [1.0] Social Psychology (Honours Seminar)</td>
</tr>
<tr>
<td>PSYC 3300 [1.0] Health (Honours Seminar)</td>
</tr>
<tr>
<td>PSYC 3400 [1.0] Forensic Psychology (Honours Seminar)</td>
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<tr>
<td>PSYC 3500 [1.0] Developmental Psychology (Honours Seminar)</td>
</tr>
<tr>
<td>PSYC 3600 [1.0] Personality (Honours Seminar)</td>
</tr>
<tr>
<td>PSYC 3700 [1.0] Cognition (Honours Seminar)</td>
</tr>
<tr>
<td>PSYC 3805 [1.0] Organizational Psychology (Honours Seminar)</td>
</tr>
</tbody>
</table>
### Minor in Cognitive Psychology (4.0 credits)

Open to all undergraduate students in programs other than Psychology and Cognitive Science.

**Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 1001</td>
<td>0.5</td>
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<tr>
<td>PSYC 1002</td>
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<td>PSYC 2001</td>
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<tr>
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<tr>
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<tr>
<td>PSYC 2700</td>
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<tr>
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<tr>
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<tr>
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</tr>
<tr>
<td>PSYC 3710</td>
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</tr>
</tbody>
</table>

Total Credits: 5.0

### Minor in Human Resources and Management for B.A. Honours Psychology (5.0 credits)

Only students pursuing Bachelor of Arts Honours with a Major in Psychology who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 7.00 may be admitted to Minor in Human Resources and Management. Students must successfully complete PSYC 2801 prior to entry in to the Minor, with a minimum grade of B+. PSYC 3801 must be successfully completed prior to taking any of the 4000-level BUSI courses listed in the Minor. Enrolment is limited.

**Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUSI 2800</td>
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<tr>
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<tr>
<td>BUSI 3710</td>
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</tr>
</tbody>
</table>

Total Credits: 4.0

### Minor in Human Resources and Management for B.A. Honours Psychology

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

**Students are required to present a Minor CGPA of 6.50 or higher at graduation in order to be awarded a Minor in Human Resources and Management for B.A. Honours Psychology.**

**Requirements:**

<table>
<thead>
<tr>
<th>Course Code</th>
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Total Credits: 5.0

### Minor in Cognitive Psychology

Open to all undergraduate students in programs other than Psychology and Cognitive Science.

**Requirements:**

<table>
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<tr>
<th>Course Code</th>
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<tr>
<td>PSYC 3710</td>
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</tbody>
</table>

Total Credits: 4.0

Note: registration in the seminars in Item 7 a) i) requires a Major CGPA of at least 9.0. Registration in the thesis course PSYC 4907 [1.0] requires a Major CGPA of at least 10.0.
### Minor in Developmental Psychology (4.0 credits)
Open to all undergraduate students in programs other than Psychology.

**Requirements:**

1. **2.0 credits in:**
   - PSYC 1001 [0.5] Introduction to Psychology I
   - PSYC 1002 [0.5] Introduction to Psychology II
   - PSYC 2001 [0.5] Introduction to Research Methods in Psychology
   - PSYC 2002 [0.5] Introduction to Statistics in Psychology

2. **0.5 credit in:**
   - PSYC 2500 [0.5] Foundations of Developmental Psychology

3. **1.5 credits from:**
   - PSYC 3505 [0.5] Exceptional Children
   - PSYC 3506 [0.5] Cognitive Development
   - PSYC 3507 [0.5] Social Development
   - PSYC 3508 [0.5] Child Language
   - PSYC 3509 [0.5] Adolescence and Emerging Adulthood

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

### Minor in Forensic Psychology (4.0 credits)
Open to all undergraduate students in programs other than Psychology and Criminology and Criminal Justice with Concentration in Psychology.

**Requirements:**

1. **2.0 credits in:**
   - PSYC 1001 [0.5] Introduction to Psychology I
   - PSYC 1002 [0.5] Introduction to Psychology II
   - PSYC 2001 [0.5] Introduction to Research Methods in Psychology
   - PSYC 2002 [0.5] Introduction to Statistics in Psychology

2. **1.0 credits in:**
   - PSYC 2400 [0.5] Introduction to Forensic Psychology
   - PSYC 3402 [0.5] Criminal Behaviour

3. **1.0 credits from:**
   - PSYC 3403 [0.5] Addiction
   - PSYC 3404 [0.5] Police Psychology
   - PSYC 3604 [0.5] Clinical Psychology and Mental Illness

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

### Minor in Health Psychology (4.0 credits)
Open to all undergraduate students in programs other than Psychology.

**Requirements:**

1. **2.0 credits in:**
   - PSYC 1001 [0.5] Introduction to Psychology I
   - PSYC 1002 [0.5] Introduction to Psychology II
   - PSYC 2001 [0.5] Introduction to Research Methods in Psychology

2. **1.5 credits in:**
   - PSYC 2002 [0.5] Introduction to Statistics in Psychology
   - PSYC 2301 [0.5] Introduction to Health Psychology
   - PSYC 3302 [0.5] Positive Psychology
   - PSYC 3604 [0.5] Clinical Psychology and Mental Illness

3. **0.5 credit from:**
   - PSYC 3301 [0.5] Sport and Performance Psychology
   - PSYC 3403 [0.5] Addiction
   - PSYC 3405 [0.5] Psychology of Motivation and Emotion

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

### Minor in Social Psychology and Personality (4.0 credits)
Open to all undergraduate students in programs other than Psychology.

**Requirements:**

1. **2.0 credits in:**
   - PSYC 1001 [0.5] Introduction to Psychology I
   - PSYC 1002 [0.5] Introduction to Psychology II
   - PSYC 2001 [0.5] Introduction to Research Methods in Psychology
   - PSYC 2002 [0.5] Introduction to Statistics in Psychology

2. **1.0 credits in:**
   - PSYC 2100 [0.5] Introduction to Social Psychology
   - PSYC 2600 [0.5] Introduction to the Study of Personality

3. **1.0 credits from:**
   - PSYC 3104 [0.5] Intergroup Relations: The Psychology of Conflict and Violence
   - PSYC 3106 [0.5] Close Relationships
   - PSYC 3302 [0.5] Positive Psychology
   - PSYC 3405 [0.5] Psychology of Motivation and Emotion
   - PSYC 3603 [0.5] Psychology of Women

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

### Minor in Organizational Psychology (4.0 credits)
Open to all undergraduate students in programs other than Psychology.

**Requirements:**

1. **2.0 credits in:**
   - PSYC 1001 [0.5] Introduction to Psychology I
   - PSYC 1002 [0.5] Introduction to Psychology II
   - PSYC 2001 [0.5] Introduction to Research Methods in Psychology
   - PSYC 2002 [0.5] Introduction to Statistics in Psychology

2. **1.0 credits in:**
   - PSYC 2801 [0.5] Organizational Psychology I
   - PSYC 3801 [0.5] Organizational Psychology II
2.2.2 fulfill the certificate residency requirement; see Psychology may be required to take additional credits to Health and Well-Being. Students who hold a degree in undergraduate degree or concurrently with any degree May be taken following successful completion of any Health and Well-Being (5.0 credits)

Minor in Psychology
Open to all undergraduate students in programs other than Psychology.

Requirements
1. 1.0 credit in:
   PSYC 1001 [0.5] Introduction to Psychology I
   PSYC 1002 [0.5] Introduction to Psychology II

2. 1.0 credit in:
   PSYC 2001 [0.5] Introduction to Research Methods in Psychology
   PSYC 2002 [0.5] Introduction to Statistics in Psychology

3. 2.0 credits in PSYC at the 2000-level or above
   4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Certificate in Multidisciplinary Studies in Mental Health and Well-Being (5.0 credits)
May be taken following successful completion of any undergraduate degree or concurrently with any degree except for Psychology with the Stream in Mental Health and Well-Being. Students who hold a degree in Psychology may be required to take additional credits to fulfill the certificate residency requirement; see Section 2.2.2 Minimum Number of Residency Credits.

Requirements
1. 1.0 credit in:
   PSYC 1001 [0.5] Introduction to Psychology I
   PSYC 1002 [0.5] Introduction to Psychology II

2. 2.0 credits in:
   PSYC 2301 [0.5] Introduction to Health Psychology
   PSYC 3302 [0.5] Positive Psychology
   PSYC 3403 [0.5] Addiction
   PSYC 3604 [0.5] Clinical Psychology and Mental Illness

3. 2.0 credits from two or more units:
   Anthropology
   ANTH 2020 [0.5] Race and Ethnicity
   ANTH 2040 [0.5] Anthropology and Gender
   ANTH 2070 [0.5] Psychological Anthropology
   ANTH 2550 [0.5] Religion and Society
   ANTH 3020 [0.5] Studies in Race and Ethnicity
   ANTH 3040 [0.5] The Global Middle Class
   ANTH 3310 [0.5] Studies in Medical Anthropology
   ANTH 4005 [0.5] Health and Globalization
   ANTH 4780 [0.5] Anthropology of Personhood
   Business
   BUSI 3104 [0.5] Managing Individual Performance

   Disability Studies
   DBST 1001 [0.5] Introduction to Disability Studies
   Economics
   ECON 3460 [0.5] Introduction to Health Economics
   Geography
   GEG 3206 [0.5] Health, Environment, and Society
   Health Sciences
   HLTH 1001 [0.5] Principles of Health I
   HLTH 2003 [0.5] Social Determinants of Health
   HLTH 3403 [0.5] Gender and Health
   History
   HIST 3106 [0.5] Social History of Sexuality
   HIST 3120 [0.5] History of the Body
   Human Rights
   HUMR 1001 [1.0] Introduction to Human Rights
   Industrial Design
   IDES 2600 [0.5] Human Factors/Ergonomics in Design
   Law
   LAWS 2105 [0.5] Social Justice and Human Rights
   Linguistics
   LING 2604 [0.5] Communication Disorders I
   LING 3604 [0.5] Communication Disorders II
   Music
   MUSI 3303 [0.5] Introduction to Music Therapy
   Neuroscience
   NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease
   Philosophy
   PHIL 1200 [0.5] The Meaning of Life
   PHIL 1700 [0.5] Philosophy of Love and Sex
   PHIL 2307 [0.5] Gender and Philosophy
   PHIL 2380 [0.5] Introduction to Environmental Ethics
   PHIL 2408 [0.5] Bioethics
   PHIL 2540 [0.5] Personal Identity and the Self
   PHIL 2550 [0.5] Moral Psychology
   PHIL 2700 [0.5] Asian Philosophy
   Religion
   RELI 1731 [0.5] Varieties of Religious Experience
   RELI 2732 [0.5] Death and Afterlife
   Sociology
   SOCI 2020 [0.5] Race and Ethnicity
   SOCI 2030 [0.5] Work, Industry and Occupations
   SOCI 2040 [0.5] Food, Culture and Society
   SOCI 2043 [0.5] Sociology of the Family
   SOCI 2045 [0.5] Gender and Society
   SOCI 2050 [0.5] Sociology of Health
   SOCI 3010 [0.5] Power, Oppression and Resistance
   SOCI 3020 [0.5] Studies in Race and Ethnicity
   SOCI 3040 [0.5] Studies in the Sociology of Gender
   SOCI 3044 [0.5] Sociology of Sex and Sexuality
   SOCI 3050 [0.5] Studies in the Sociology of Health
   SOCI 3055 [0.5] Studies in Addictions

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B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURRE, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design


Subject codes: AERO, ARCC, ARCH, ARCNS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences


Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOEM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students...
should consult Academic Advising Centre for guidance in planning their studies prior to registration.

**Change of Program Within the B.A. Degree**
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in *Good Standing*. Other applications for change of program will be considered on their merits; students may be admitted to the new program in *Good Standing* or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**
Students registered in certain B.A. programs may earn the notation *Mention : Français* by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : Français* requirement in both disciplines.

Courses taught in French (item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on Exchange or Letter of Permission.

**B.Sc. Regulations**
The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (see the *Academic Regulations of the University* section of this Calendar).

**Breadth Requirement for the B.Sc.**
Students in a Bachelor of Science program must present the following credits at graduation:
1. 2.0 credits in Science Continuation courses not in the major discipline; *students completing a double major are considered to have completed this requirement providing they have 2.0 credits in science continuation courses in each of the two majors*
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):
1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for fewer than 10.0 credits.
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000) if, on transfer, the student received credit for 10.0 or more credits.

**Declared and Undeclared Students**
Students who are registered in a program within the degree are called Declared students. Most students designate a program of study when they first apply for admission and so begin their studies as Declared students. Students may also choose to begin their studies within the B.Sc. degree without being registered in a program. These students are referred to as Undeclared students. The recommended course pattern for Undeclared students is provided in the Undeclared entry of the Programs section of this Calendar. Undeclared students normally must apply to enter a program before beginning their second year of study. The Science Student Success Centre (SSSC) provides Undeclared students guidance to the appropriate support services in making this decision.

**Change of Program within the B.Sc. Degree**
Students may transfer to a program within the B.Sc. degree if upon entry to the new program they would be in good academic standing.

Other applications for change of program will be considered on their merits; students may be accepted
in the new program in Good Standing or on Academic Warning.

Applications to declare or change their program within the B.Sc. Degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may add a minor, concentration or specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a minor, concentration or specialization requires that the student be in Good Standing and is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement
Students in a B.Sc. degree program must present at graduation at least two full credits of experimental science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

<table>
<thead>
<tr>
<th>Category</th>
<th>Course Code</th>
<th>Title</th>
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<tbody>
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<td>Biochemistry</td>
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<td>BIOC 4001</td>
<td>Methods in Biochemistry</td>
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<td></td>
<td>BIOC 4201</td>
<td>Advanced Cell Culture and Tissue Engineering</td>
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<td>Biology</td>
<td>BIOL 1103</td>
<td>Foundations of Biology I</td>
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<td></td>
<td>BIOL 2001</td>
<td>Animals: Form and Function</td>
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<td></td>
<td>BIOL 2002</td>
<td>Plants: Form and Function</td>
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<td>BIOL 2104</td>
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<td>ERTH 3111</td>
<td>Vertebrate Evolution: Mammals, Reptiles, and Birds</td>
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<td>ERTH 3112</td>
<td>Vertebrate Evolution: Fish and Amphibians</td>
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<td>ERTH 3204</td>
<td>Mineral Deposits</td>
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<td>ERTH 3205</td>
<td>Physical Hydrogeology</td>
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<td>Food Sciences</td>
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<td>Food Analysis</td>
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<td>FOOD 3005</td>
<td>Food Microbiology</td>
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<td>Geography</td>
<td>GEG 1010</td>
<td>Global Environmental Systems</td>
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<td>GEG 3108</td>
<td>Soil Properties</td>
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<tr>
<td>Neuroscience</td>
<td>NEUR 3206</td>
<td>Sensory and Motor Neuroscience</td>
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<td>NEUR 3207</td>
<td>Systems Neuroscience</td>
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<td>NEUR 4600</td>
<td>Advanced Lab in Neuroanatomy</td>
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<td>Physics</td>
<td>PHYS 1001</td>
<td>Foundations of Physics I</td>
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<td>PHYS 1002</td>
<td>Foundations of Physics II</td>
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<tr>
<td></td>
<td>PHYS 1003</td>
<td>Introductory Mechanics and Thermodynamics</td>
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<td>PHYS 1004</td>
<td>Introductory Electromagnetism and Wave Motion</td>
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<td></td>
<td>PHYS 1007</td>
<td>Elementary University Physics I</td>
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<td>PHYS 1008</td>
<td>Elementary University Physics II</td>
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<tr>
<td></td>
<td>PHYS 2202</td>
<td>Wave Motion and Optics</td>
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<td></td>
<td>PHYS 2604</td>
<td>Modern Physics I</td>
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<td>PHYS 3007</td>
<td>Third Year Physics Laboratory: Selected Experiments and Seminars</td>
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<td></td>
<td>PHYS 3606</td>
<td>Modern Physics II</td>
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<td></td>
<td>PHYS 3608</td>
<td>Modern Applied Physics</td>
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Course Categories for B.Sc. Programs

<table>
<thead>
<tr>
<th>Category</th>
<th>Course Code</th>
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<tbody>
<tr>
<td>Science Geography</td>
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<td>GEOG 2006</td>
<td>Introduction to Quantitative Research</td>
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<td>GEOG 2013</td>
<td>Weather and Water</td>
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<td>GEOG 2014</td>
<td>The Earth's Surface</td>
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<td>GEOG 3003</td>
<td>Quantitative Geography</td>
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<td>GEOG 3010</td>
<td>Field Methods in Physical Geography</td>
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<td>GEOG 3102</td>
<td>Geomorphology</td>
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<td>GEOG 3103</td>
<td>Watershed Hydrology</td>
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<td>GEOG 3104</td>
<td>Principles of Biogeography</td>
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<td>GEOG 3105</td>
<td>Climate and Atmospheric Change</td>
</tr>
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<td>GEOG 3106</td>
<td>Aquatic Science and Management</td>
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<td>Soil Properties</td>
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<td>GEOG 4000</td>
<td>Field Studies</td>
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<td>GEOG 4005</td>
<td>Directed Studies in Geography</td>
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<td>GEOG 4013</td>
<td>Cold Region Hydrology</td>
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<td>GEOG 4017</td>
<td>Global Biogeochemical Cycles</td>
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<td></td>
<td>GEOG 4101</td>
<td>Two Million Years of Environmental Change</td>
</tr>
<tr>
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<td>GEOG 4103</td>
<td>Water Resources Engineering</td>
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Science Psychology Courses

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>PSYC 2001 [0.5]</td>
<td>Introduction to Research Methods in Psychology</td>
</tr>
<tr>
<td>PSYC 2002 [0.5]</td>
<td>Introduction to Statistics in Psychology</td>
</tr>
<tr>
<td>PSYC 2700 [0.5]</td>
<td>Introduction to Cognitive Psychology</td>
</tr>
<tr>
<td>PSYC 3000 [1.0]</td>
<td>Design and Analysis in Psychological Research</td>
</tr>
<tr>
<td>PSYC 3506 [0.5]</td>
<td>Cognitive Development</td>
</tr>
<tr>
<td>PSYC 3700 [1.0]</td>
<td>Cognition (Honours Seminar)</td>
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<tr>
<td>PSYC 3702 [0.5]</td>
<td>Perception</td>
</tr>
<tr>
<td>PSYC 2307 [0.5]</td>
<td>Human Neuropsychology I</td>
</tr>
<tr>
<td>PSYC 3307 [0.5]</td>
<td>Human Neuropsychology II</td>
</tr>
</tbody>
</table>

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

- BIOL (Biology)
- CHEM (Chemistry)
- COMP (Computer Science)
- ENSC (Environmental Science)
- GEOG (Geography)
- GEOG (Geomatics)
- HLTH (Health Sciences)
- ISAP (Interdisciplinary Science Practice)
- ISCI (Interdisciplinary Science Seminar)
- MATH (Mathematics)
- NEUR (Neuroscience)
- PHYS (Physics)
- TSES (Technology, Society, Environment)

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

- All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above), NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

- BIOL 4810 [0.5] Education Research in Biology
- CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs
- CHEM 1004 [0.5] Drugs and the Human Body
- CHEM 1007 [0.5] Chemistry of Art and Artifacts
- ERTH 1010 [0.5] Our Dynamic Planet Earth
- ERTH 1011 [0.5] Evolution of the Earth
- ERTH 2415 [0.5] Natural Disasters
- ERTH 2420 [0.5] Design and Analysis in Psychology
- ISCI 2000 [0.5] Introduction to the Environment
- ISCI 2002 [0.5] Natural Laws
- ISCI 2007 [0.5] Human Impacts on the Environment
- MATH 0107 [0.5] Introduction to Research Methods in Psychology
- PHYS 1901 [0.5] Planetary Astronomy
- PHYS 1902 [0.5] From our Star to the Cosmos
Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office
Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment
Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses
Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation
To obtain a Satisfactory grade for the co-op work term students must have:
1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a
10. Students will be provided with a letter of support to work in Canada without the proper authorization. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**Graduation with the Co-op Designation**
In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

**Note:** Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**
Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**
Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to

**B.A. Honours Psychology: Co-op Admission and Continuation Requirements**
- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Have an overall minimum CGPA of 9.50 and a major CGPA of 9.5 at the end of first year of academic study
2. Have second-year standing
3. Have successfully completed, by the start-date of the first work term, PSYC 2001 and PSYC 2002

Students in B.A. Honours Psychology must successfully complete three (3) work terms to obtain the Co-op designation.

**Work Term Report Course:** PSYC 3999

**Work/Study Pattern:**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<tbody>
<tr>
<td>Term</td>
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<td>Summer</td>
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<td>Summer</td>
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**Legend**
- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

**Admissions Information**
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

**Note:** Courses listed as recommended are not mandatory for admission. Students who do not follow
the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law (Business Law), Law (Law, Policy and Government), Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours Program

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For the Combined Honours program in Chemistry and Computer Science, 4U Chemistry and Calculus and Vectors are strongly recommended.
For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing
For entry to an Honours program after the completion of 5.0 included credits, a student must have a major CGPA of 5.50 or higher, an overall CGPA of 4.50 or higher and the recommendation of the Honours department or committee. A student beginning the final 10.0 credits towards an Honours degree must present a major CGPA of 6.00 or higher, an overall CGPA of 5.00 or higher and the recommendation of the Honours department or committee. A student beginning the final 5.0 credits towards an Honours degree must present a major CGPA of 6.50 or higher and an overall CGPA of 5.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

B.Sc. Major Program
B.Sc. Program
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics. 4U Physics is strongly recommended. Equivalent courses may be substituted between the old and new Ontario mathematics curriculum.

Advanced Standing
For entry to a B.Sc. or B.Sc. Major program after the completion of 5.0 included credits, a student must have a major and core CGPA of 3.50 or higher and an overall CGPA of 3.50 or higher. A student beginning the final 5.0 credits towards a B.Sc. or B.Sc. Major degree must present a major and core CGPA of 4.00 or higher and an overall CGPA of 4.00 or higher, as calculated for graduation. Advanced standing will be granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University.

Co-op Option
Direct Admission to the First Year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admission Requirements
To be eligible for admission to the Certificate in Multidisciplinary Studies in Mental Health and Well-Being, applicants must:
- have successfully completed any undergraduate degree, or;
- meet the admission requirements for the Bachelor of Arts, or;
- be currently enrolled and in Good Standing in any degree offered at Carleton

Note: Students who are currently enrolled in, or have graduated from, a degree in Psychology with the Stream in Mental Health and Well-Being are not eligible for this program. Students who hold a degree in Psychology may be required to take additional credits to fulfill the certificate residency requirement; see Section 2.2.2 of the Academic Regulations of the University, Minimum Number of Residency Credits.

Psychology (PSYC) Courses
PSYC 1001 [0.5 credit]
Introduction to Psychology I
A survey of topics associated with psychology's role as a natural science, including neuroscience, cognition, and learning.
Precludes additional credit for PSYC 1000.
Lecture three hours a week.

PSYC 1002 [0.5 credit]
Introduction to Psychology II
A survey of topics associated with psychology's role as a social science, including social psychology, personality, clinical psychology, and mental health.
Precludes additional credit for PSYC 1000.
Prerequisite(s): PSYC 1001.
Lecture three hours a week.

PSYC 2001 [0.5 credit]
Introduction to Research Methods in Psychology
A general introduction to research methodologies employed within contemporary psychology. Topics covered include research designs (experimental, quasi-experimental) and techniques (observations, surveys), basic descriptive statistics, and how to interpret and report research findings.
Precludes additional credit for NEUR 2001 and PSYC 2000 (no longer offered).
Prerequisite(s): PSYC 1001 and PSYC 1002.
Lecture three hours a week. May include laboratories.
PSYC 2002 [0.5 credit]
Introduction to Statistics in Psychology
A general introduction to statistical techniques employed within contemporary psychology. Topics include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square). Precludes additional credit for NEUR 2002. Prerequisite(s): PSYC 2001. Lecture three hours a week. May include laboratories.

PSYC 2100 [0.5 credit]
Introduction to Social Psychology
Introduction to social psychology, including a survey of theories, issues, methods, and findings. This course will explore how social situations may influence people's thoughts, feelings, and behaviours. Topics may include social cognition, self-knowledge, persuasion, interpersonal attraction, aggression, and prosocial behaviour. Precludes additional credit for SOCI 2150. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2301 [0.5 credit]
Introduction to Health Psychology
Introduction to health psychology, including a survey of theories, issues, methods, and findings. Using a multidisciplinary approach, topics may include the reciprocal interactions among physical health and illness, and psychological factors, including emotional well-being, coping and appraisal processes. Precludes additional credit for PSYC 3406. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2307 [0.5 credit]
Human Neuropsychology I
Introduction to study of brain-behaviour relationships, including a survey of theories, issues, methods, and findings. Topics may include basic anatomy and physiology of the human nervous system, including sensory and motor functions. Neural basis of language, perception, emotion, learning, memory, decision making and social cognition. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2400 [0.5 credit]
Introduction to Forensic Psychology
Introduction to forensic psychology, including a survey of theories, issues, methods, and findings. Topics covered may include development of offending, eyewitness testimony, victim studies, risk assessment, offender rehabilitation, offender classification, and police studies. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2500 [0.5 credit]
Foundations of Developmental Psychology
Introduction to developmental psychology, including a survey of theories, issues, methods, and findings. Topics may include biological underpinnings and genetics, as well as selected aspects of language, cognitive, moral, emotional, and social development. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2600 [0.5 credit]
Introduction to the Study of Personality
Introduction to the study of personality, including a survey of theories, issues, methods, and findings. Explores the factors that contribute to people's personality and influence how they interact with others. Topics may include traits, motives, the self, physiology, the unconscious, relationships, stress and coping. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2700 [0.5 credit]
Introduction to Cognitive Psychology
Introduction to cognitive processes, including a survey of theories, issues, methods and findings. Topics covered may include pattern recognition, attention, imagery, learning (animal and human), memory, language, and thinking. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2801 [0.5 credit]
Organizational Psychology I
Introduction to the study of organizational psychology, including a survey of theories, issues, methods, and findings. Examines individual and group behaviour in organizational settings. Topics may include understanding work-related attitudes, behaviour, motivation, and stress, personnel selection, personality in the workplace, organizational justice, and leadership. Precludes additional credit for PSYC 3105, PSYC 3803 (no longer offered). Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours per week.

PSYC 2900 [1.0 credit]
Design and Analysis in Psychological Research
Techniques in data analysis, probability, sampling distributions, and procedures of estimation. Topics include classical, Bayesian, and distribution free approaches to hypothesis testing, linear regression and curve fitting, and analysis of variance methods in experimental design. Techniques are applied with appropriate statistical software (e.g., SPSS, Excel). Includes: Experiential Learning Activity Prerequisite(s): third-year standing, PSYC 2001, and PSYC 2002. Lectures and tutorial four hours a week.
PSYC 3001 [0.5 credit]
Psychological Testing
An introduction to theory and issues pertaining to psychological tests. Topics include the creation, assessment, scoring, and interpretation of results across different testing formats (questionnaires, surveys, structured interviews, performance-based measurements). Classical and modern techniques will be incorporated. Students will apply psychological testing theory through assignments.
Prerequisite(s): PSYC 2001 and PSYC 2002.
Lectures three hours a week.

PSYC 3100 [1.0 credit]
Social Psychology (Honours Seminar)
An introduction to theory and research in social psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis. Includes: Experiential Learning Activity
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2100, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.
Seminars and laboratories six hours a week.

PSYC 3104 [0.5 credit]
Intergroup Relations: The Psychology of Conflict and Violence
In-depth coverage of the social psychology of relations within and between large societal groups. Topics may include social identity, stereotyping, prejudice, and intergroup emotions, with emphasis on their role in promoting conflict and paths to pro-social intergroup relations.
Also listed as SOWK 3103.
Precludes additional credit for PSYC 3103 (no longer offered).
Prerequisite(s): PSYC 2100.
Lectures three hours per week.

PSYC 3106 [0.5 credit]
Close Relationships
A consideration of relationship science, with a focus on social psychological theory and empirical approaches to the study of close relationships such as dating and marital relationships, and friendships. Topics may include relationship initiation, relationship maintenance, and coping with the dissolution of relationships.
Prerequisite(s): PSYC 2100.
Lectures three hours per week.

PSYC 3003 [0.5 credit]
Health (Honours Seminar)
An applied introduction to theory and research in health psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis. Includes: Experiential Learning Activity
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2301, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.
Seminars and laboratories six hours a week.

PSYC 3301 [0.5 credit]
Sport and Performance Psychology
How psychological processes influence outcomes across sport and performance environments. Topics may include self-confidence, goal-setting, arousal regulation, imagery, group dynamics, burnout, injury recovery, and how person and situational factors affect the pursuit of excellence.
Prerequisite(s): one of PSYC 2100, PSYC 2301, PSYC 2500, PSYC 2600.
Lectures three hours a week.

PSYC 3302 [0.5 credit]
Positive Psychology
A review of theoretical, historical, and empirical scholarship in positive psychology. Drawing widely across traditional sub-disciplines, content focuses on human strengths, well-being, resilience, and virtue in understanding internal, external, and developmental contributors to health and happiness.
Prerequisite(s): one of PSYC 2100, PSYC 2301, PSYC 2500, PSYC 2600.
Lectures three hours a week.

PSYC 3307 [0.5 credit]
Human Neuropsychology II
Cortical metabolism and research methods for assessment of cortical function, neuropsychological testing in the context of neurological, psychiatric and cognitive disorders caused by nervous system damage or genetic anomaly.
Precludes additional credit for PSYC 3207 (no longer offered).
Prerequisite(s): PSYC 2307.
Lectures three hours a week.
PSYC 3400 [1.0 credit]
Forensic Psychology (Honours Seminar)
An applied introduction to theory and research in forensic psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis. Includes: Experiential Learning Activity
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2400, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.
Seminars and laboratories six hours a week.

PSYC 3402 [0.5 credit]
Criminal Behaviour
A review of theoretical and empirical research in the study of criminal behaviour. Examination of offender assessment and classification, prevalence and types of offenders, and effectiveness of offender treatment including understanding specific populations of offenders such as Indigenous offenders, women offenders and violent offenders.
Prerequisite(s): PSYC 2400.
Lectures three hours a week.

PSYC 3403 [0.5 credit]
Addiction
Neurobiological and social bases of drug and behavioural addictions. Contemporary theoretical approaches to addiction; approaches to current prevention and treatment.
Prerequisite(s): one of PSYC 2301, PSYC 2307, PSYC 2400.
Lectures three hours a week.

PSYC 3404 [0.5 credit]
Police Psychology
Critical examination of theory and empirical research in the area of police psychology. Topics covered may include police culture, police selection, police suicide, police personality, stress debriefing, fitness evaluations, police training, crisis negotiations, and investigative techniques. Precludes additional credit for PSYC 4402 (no longer offered).
Prerequisite(s): PSYC 2400.
Lectures three hours per week.

PSYC 3405 [0.5 credit]
Psychology of Motivation and Emotion
This course will explore motivational and emotional factors involved in human behaviour emphasizing various perspectives, theories, and research pertaining to physiological, cognitive, and social needs. Topics may include what factors motivates people, how motivation changes over time, and how one person can motivate another individual.
Prerequisite(s): PSYC 1001 and PSYC 1002.
Lectures three hours a week.

PSYC 3500 [1.0 credit]
Developmental Psychology (Honours Seminar)
An introduction to theory and research in developmental psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis. Includes: Experiential Learning Activity
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2500, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.
Seminars and laboratories six hours a week.

PSYC 3505 [0.5 credit]
Exceptional Children
An overview of childhood exceptionalities including intellectual differences, communication disorders, sensory and physical impairments, developmental and behavioural problems.
Prerequisite(s): PSYC 2500.
Lectures three hours a week.

PSYC 3506 [0.5 credit]
Cognitive Development
Human cognitive development is examined with a focus on memory, thinking and language through the life span. Topics may include perceptual and language development, emergent literacy, development of strategies and development of reading and arithmetic skills.
Prerequisite(s): PSYC 2500 or PSYC 2700.
Lectures three hours a week.

PSYC 3507 [0.5 credit]
Social Development
Development of the individual with a focus on social cognition and social behaviour. Topics may include the role of temperament in development, parental roles, siblings and peers in social/emotional development, development of prosocial and aggressive behaviour, moral development and development of self and other understanding.
Prerequisite(s): PSYC 2500.
Lectures three hours a week.

PSYC 3508 [0.5 credit]
Child Language
Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development. Includes: Experiential Learning Activity
Also listed as LING 3603.
Precludes additional credit for LALS 2603 (no longer offered).
Prerequisite(s): LALS 1000 or LALS 1001 or LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.
Lectures three hours per week.
PSYC 3509 [0.5 credit]  
Adolescence and Emerging Adulthood  
The physical, cognitive, social and moral development of adolescents and emerging adults in multiple contexts including family, peers, media and culture. Major theories and contemporary issues and concerns.  
Prerequisite(s): PSYC 2500.  
Lectures three hours a week.

PSYC 3600 [1.0 credit]  
Personality (Honours Seminar)  
An introduction to theory and research in personality psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.  
Includes: Experiential Learning Activity  
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2600, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.  
Seminars and laboratories six hours a week.

PSYC 3603 [0.5 credit]  
Psychology of Women  
An examination of theories and research regarding the similarities and differences in women’s and men’s psychological processes. Psychological issues relevant to women (e.g., women’s health concerns, women’s sexuality, violence toward women and children) will be examined as well as feminist and traditional research methods.  
Prerequisite(s): one of PSYC 2100, PSYC 2500, PSYC 2600.  
Lectures three hours a week.

PSYC 3604 [0.5 credit]  
Clinical Psychology and Mental Illness  
The history of the concept of mental illness. Theory and selected research dealing with the nature and etiology of mental illness.  
Prerequisite(s): PSYC 2301, PSYC 2500 or PSYC 2600.  
Lectures three hours a week.

PSYC 3700 [1.0 credit]  
Cognition (Honours Seminar)  
An introduction to theory and research in cognitive psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.  
Includes: Experiential Learning Activity  
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2700, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.  
Seminars and laboratories six hours a week.

PSYC 3702 [0.5 credit]  
Perception  
Introduction to theory, research methods and principles associated with the study of perceptual processes. Examples of how perceptual principles can be applied to solve problems in communications, transportation, medicine, industrial design, manufacturing, marketing, food and beverage industries (flavoring, blending, and scenting, etc.).  
Precludes additional credit for NEUR 3202.  
Prerequisite(s): PSYC 1001 and PSYC 1002.  
Lectures three hours a week.

PSYC 3709 [0.5 credit]  
Language Processing and the Brain  
Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.  
Includes: Experiential Learning Activity  
Also listed as LING 3601.  
Precludes additional credit for LALS 2601 and LALS 3601 (no longer offered).  
Prerequisite(s): LALS 1000 or LALS 1001 or LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.  
Lectures three hours a week.

PSYC 3710 [0.5 credit]  
Introduction to Human Factors  
The theoretical foundation, philosophy and practical application of techniques for analyzing from a psychological perspective how people interact with designed environments. A major goal is to determine how these environments should be designed to suit human capabilities.  
Precludes additional credit for PSYC 2800 (no longer offered).  
Prerequisite(s): PSYC 2001 and PSYC 2002.  
Lecture three hours a week.

PSYC 3801 [0.5 credit]  
Organizational Psychology II  
Advanced coverage of the current theory and practices in Organizational Psychology. Selected topics may include workplace socialization, job attitudes, deviant work behaviours, leadership, teams and group dynamics, work-related stress and health, and organizational change and development.  
Prerequisite(s): PSYC 2801.  
Lectures three hours per week.
PSYC 3802 [0.5 credit]
Transition to Career
Within the context of an active learning environment, examines traditional and current models in career psychology. Topics may include the concepts of change and transitions, self-assessments, vocational psychology, and workplace onboarding. Students will examine their personal and professional transition from university to the work world.
Includes: Experiential Learning Activity
Prerequisite(s): third or fourth year standing in Psychology.
Lectures three hours a week.

PSYC 3805 [1.0 credit]
Organizational Psychology (Honours Seminar)
An introduction to theory and research in organizational psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2801, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.
Seminars and laboratories six hours a week.

PSYC 3901 [0.5 credit]
Practicum in Psychology
Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues.
Includes: Experiential Learning Activity
Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3902 [0.5 credit]
Practicum in Psychology
Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues.
Includes: Experiential Learning Activity
Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3905 [1.0 credit]
Practicum in Psychology
Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues.
Includes: Experiential Learning Activity
Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3999 [0.0 credit]
Co-operative Work Term
Co-operative Work Term.
Includes: Experiential Learning Activity
Work Term.

PSYC 4001 [0.5 credit]
Special Topics in Psychology
Each section of PSYC 4001 deals with a different topic. Topics change yearly. Students may register in more than one section of PSYC 4001 but can register in each section only once.
Prerequisite(s): each section will have its own.
Lectures or seminars three hours a week.

PSYC 4003 [0.5 credit]
Origins of Modern Psychology
An overview of the evolution of psychology, with an emphasis on psychology as a specialized area of knowledge and practice in the late-nineteenth and twentieth centuries. Topics covered may include the history of a particular period, content area, or cultural context.
Precludes additional credit for PSYC 2003.
Prerequisite(s): third or fourth-year standing in a Psychology Honours program.
Lectures or seminars three hours per week.

PSYC 4100 [0.5 credit]
Advanced Topics in Social Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in Social psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2100.
Lectures or seminars three hours a week.

PSYC 4301 [0.5 credit]
Advanced Topics in Health Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in health psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2301.
Lectures or seminars three hours a week.
PSYC 4330 [1.0 credit]
Community Mental Health and Well-Being
An examination of theory, research, and the practice of approaches to support peers and their well-being. Students will apply the concepts learned during the seminars in field placements.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Psychology, Mental Health and Well-Being Stream.
Seminar three hours per week.

PSYC 4333 [0.5 credit]
Clinical Psychology: Assessment and Intervention
An advanced seminar on clinical psychology and mental health. Students will learn about frequently used treatment modalities and common factors across treatments. Research methodology and recent advances dealing with a variety of common mental disorders will also be reviewed and discussed.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Psychology and PSYC 3604.
Lecture or seminar three hours a week.

PSYC 4400 [0.5 credit]
Advanced Topics in Forensic Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in Forensic psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2400.
Lectures or seminars three hours a week.

PSYC 4403 [0.5 credit]
Female Offenders
Feminist and social learning approaches to the assessment and treatment of female offenders. Theories and research relevant to selected patterns of law breaking and selected female offender types.
Prerequisite(s): third- or fourth-year standing and PSYC 3402.
Lectures or seminars three hours a week.

PSYC 4404 [0.5 credit]
Sex Offenders
Theory and research concerning the etiology and maintenance of sexual offending; assessment, treatment, and management of sex offenders. Introduction to fundamental issues and controversies in the area.
Prerequisite(s): third- or fourth-year standing, PSYC 2400, and PSYC 3402.
Lectures or seminars three hours a week.

PSYC 4410 [0.5 credit]
Children and the Law
This course will explore psychological factors affecting child witnesses and victims as they interact within the criminal justice system. The course will survey the intersection of psychology and law within the areas of eyewitness memory, police procedures, and the criminal justice system.
Prerequisite(s): fourth-year standing, and PSYC 2400 or PSYC 2500.
Lectures or seminars three hours a week.

PSYC 4430 [0.5 credit]
Advanced Topics in Developmental Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in developmental psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing, and PSYC 3500, PSYC 3505, PSYC 3506, PSYC 3507. Lectures or seminars three hours a week.

PSYC 4433 [0.5 credit]
Advanced Topics in Personality Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in personality psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2600. Lectures or seminars three hours a week.

PSYC 4400 [0.5 credit]
Advanced Topics in Cognitive Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in cognitive psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 3402. Lectures or seminars three hours a week.

PSYC 4801 [0.5 credit]
Occupational Health Psychology
The application of psychological knowledge to enhance employee physical and mental health, safety and well-being, and more broadly, to enrich organizational life. Students will be able to learn and analyze critically the relevant methodological, theoretical, and empirical Occupational Health Psychology literature.
Prerequisite(s): third or fourth-year standing and one of PSYC 2100, PSYC 2301, PSYC 2801. Lectures or seminars three hours a week.

PSYC 4802 [0.5 credit]
Advanced Topics in Organizational Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in organizational psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2801. Lectures or seminars three hours a week.
PSYC 4900 [0.5 credit]
Independent Study
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally, students may not include more than one credit of independent study in their total program.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in Psychology and permission of the Department.
Mentored work.

PSYC 4902 [0.5 credit]
Independent Study
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally, students may not include more than one credit of independent study in their total program.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in Psychology and permission of the Department.
Mentored work.

PSYC 4907 [1.0 credit]
Thesis for B.Sc. with Honours in Psychology
A thesis supervised by a Faculty Adviser. Students review the appropriate literature, contribute to the design of a study or experiment, conduct data analyses, and produce an APA style written report. Students may also present a research poster at the Psychology Undergraduate Research Event.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 4906 (no longer offered).
Prerequisite(s): fourth-year Honours standing in Psychology with a major CGPA of 10.0, PSYC 3000; one of PSYC 3100, PSYC 3300, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700 or PSYC 3805; and permission of the Department.
Lectures during the fall term given by the course instructor and mentored work arranged by the Faculty Adviser.

PSYC 4908 [1.0 credit]
Thesis for B.A. with Honours in Psychology
A thesis supervised by a Faculty Adviser. Students review the appropriate literature, contribute to the design of a study or experiment, conduct data analyses, and produce an APA style written report. Students may also present a research poster at the Psychology Undergraduate Research Event.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 4905 (no longer offered).
Prerequisite(s): fourth-year Honours standing in Psychology with a major CGPA of 10.0, PSYC 3000; one of PSYC 3100, PSYC 3300, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700 or PSYC 3805; and permission of the Department.
Lectures during the fall term given by the course instructor and mentored work arranged by the Faculty Adviser.

PSYC 4909 [1.0 credit]
Project for B.Sc. with Honours in Psychology
Within an active learning environment, students develop oral presentations and written documents that may include annotated bibliographies, essays, and presentation slides. They must also present a research poster at the Psychology Undergraduate Research Event. Students select an area of psychological research of interest to them.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 4906 (no longer offered), PSYC 4907, and PSYC 4908.
Prerequisite(s): fourth-year standing in B.Sc. (Honours) in Psychology, and PSYC 3000.
Seminars three hours a week.

PSYC 4910 [1.0 credit]
Project for B.A. with Honours in Psychology
Within an active learning environment, students develop oral presentations and written documents that may include annotated bibliographies, essays, and presentation slides. They must also present a research poster at the Psychology Undergraduate Research Event. Students select an area of psychological research of interest to them.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 4905 (no longer offered), PSYC 4907 and PSYC 4908.
Prerequisite(s): fourth-year standing in B.A (Honours) in Psychology, and PSYC 3000.
Seminars three hours a week.

Public Affairs and Policy Management
This section presents the requirements for programs in:

- Specialization in Communication and Policy Studies (Communication Technologies and Regulation) B.P.A.P.M.
- Specialization in Communication and Policy Studies (Strategic Public Opinion) B.P.A.P.M.
- Specialization in Development Policy Studies (Global Economic Relations) B.P.A.P.M.
- Specialization in Development Policy Studies (Rights and Human Development) B.P.A.P.M.
- Specialization in Development Policy Studies (Indigenous Policy) B.P.A.P.M.
- Specialization in International Policy Studies (International Relations and Conflict) B.P.A.P.M.
- Specialization in International Policy Studies (Security and Intelligence) B.P.A.P.M.
- Specialization in Public Policy and Administration (Economic Policy) B.P.A.P.M.
- Specialization in Public Policy and Administration (Environmental and Sustainable Energy Policy) B.P.A.P.M.
- Specialization in Public Policy and Administration (Social Policy) B.P.A.P.M.
• Specialization in Public Policy and Administration (Indigenous Policy) B.P.A.P.M.

Graduate Pathways
Accelerated pathways or advanced standing with transfer of credits to graduate programs at Carleton University may be available to eligible BPAPM students. Please consult the Graduate Calendar for the pathway requirements for the MA degree in International Affairs offered by the Norman Paterson School of International Affairs, the MPPA degree offered by the School of Public Policy and Administration, the MPM degree offered by the Clayton H. Riddell Graduate Program in Political Management, and the MA degree in European, Russian, and Eurasian Studies.

Program Requirements
Language Requirement for B.P.A.P.M.
Prior to graduation, students must satisfy a language proficiency requirement in one of the following ways:

1. successful completion of an approved French language credit (FREN 1100);
2. placement at a demonstrated competency level equivalent to satisfactory completion of FREN 1100 following a self-assessment questionnaire and interview administered by the Department of French (for students who already possess demonstrated capacity in French);
3. successful completion of French Immersion in high school or possession of a Bilingual Diploma or Certificate.

Students should note that they will be required to use one of their elective credits if they choose to satisfy the language requirement through an approved French language credit.

For students whose first language is not English, or for students whose Specialization interests require a language other than French, the Language Requirement may be met by substituting another language for French. Permission for substitution may be sought from the Program Coordinator. Students registering in the Specialization in International Studies should note the additional language requirement.

Bachelor of Public Affairs and Policy Management (B.P.A.P.M.)
Before the second year of study, students in this program must register in one of the specializations listed below.

Specialization in Communication and Policy Studies (Communication Technologies and Regulation)
B.P.A.P.M. (20.0 credits)

Specialization in Communication and Policy Studies (Strategic Public Opinion)
B.P.A.P.M. (20.0 credits)

A. Credits Included in the Major (10.0 credits)

1. 3.5 credits in:

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<td>Policy: Analysis, Implementation, and Evaluation</td>
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<td>Foundations of Public Policy: Political Thought</td>
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<td>PAPM 2002</td>
<td>Foundations of Public Policy: Economic Thought</td>
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<td>PAPM 3000</td>
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<td>Capstone Seminar in Public Affairs and Policy Management</td>
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<td>PAPM 4099</td>
<td>Policy Seminar</td>
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<td>PSCI 2003</td>
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<td>COMS 2300</td>
<td>Communication as Propaganda</td>
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<td>ANTH 3037</td>
<td>Studies in Information Systems and Social Power</td>
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<td>Marketing Communications</td>
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<td>BUSI 3207</td>
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<td>COMS 3108</td>
<td>Media Industries and the Network Society</td>
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<td>COMS 3302</td>
<td>Political Communication</td>
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<td>COMS 3308</td>
<td>Critical Studies in Advertising and Consumer Culture</td>
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<td>Media and Communication in Regional Contexts</td>
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<td>Alternative Media and Social Activism</td>
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<td>Politics of Popular Culture</td>
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5. 1.0 credit from:

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<td>COMS 4307</td>
<td>Politics, Communication, and the Publicity State</td>
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COMS 4316 [0.5] Indigenous Media in Global Contexts
COMS 4401 [0.5] Global Internet Policy and Governance
COMS 4406 [0.5] Open Government and Communication
JOUR 4504 [0.5] Investigating Journalism: The Media and International Development
LAWS 4402 [0.5] Employment Dispute Resolution
LAWS 4801 [0.5] Risk and the Legal Process
PSCI 4003 [0.5] Politics and the Media
PSCI 4702 [0.5] Intermediate Research Methods for Applied Political Science

6. 1.5 credits in:

For the policy stream in Communication Technologies and Regulation:
COMS 3401 [0.5] Communications Regulation in Canada
COMS 3403 [0.5] Communication, Technology and Culture
LAWS 3005 [0.5] Law and Regulation
LAWS 3202 [0.5] Intellectual Property
LAWS 3501 [0.5] Law in the Information Society

For the policy stream in Strategic Public Opinion:
COMS 3001 [0.5] Quantitative Research in Communication
COMS 3002 [0.5] Qualitative Research in Communication
COMS 3302 [0.5] Political Communication
PSCI 3000/COMS 3001 Introduction to Political Management
PSCI 3407 [0.5] Public Opinion and Public Policy

7. 1.5 credits in:

For the policy stream in Communication Technologies and Regulation:
BUSI 4400 [0.5] IS Strategy, Management and Acquisition
BUSI 4404 [0.5] IT Infrastructure
COMS 4006 [0.5] Professional Communication Research
COMS 4307 [0.5] Politics, Communication, and the Publicity State
COMS 4317 [0.5] Digital Media and Global Network Society
COMS 4405 [0.5] The Networked Self
COMS 4407 [0.5] Communication and Critical Data Studies
COMS 4410 [0.5] Mobile Media
COMS 4411 [0.5] Algorithmic Culture
COMS 4412 [0.5] Game Studies
ECON 3300 [0.5] Public Policy Toward Business
ECON 3850 [0.5] Economics of Information and the Media
IPAF 4900 [0.5] Research Experience Course
LAWS 4507 [0.5] Administrative Law and Control
LAWS 4510 [0.5] Topics in Law, Policy and Government
PAPM 4908 [1.0] Honours Research Essay

For the policy stream in Strategic Public Opinion:
LAWS 3202 [0.5] Law and Regulation
LAWS 3005 [0.5] Law and Regulation
COMS 3403 [0.5] Communication, Technology and Culture

B. Credits Not Included in the Major CGPA (10.0 credits)

8. 1.0 credit in:
PSCI 2701 [0.5] Introduction to Research Methods in Political Science
PSCI 2702 [0.5] Quantitative Research Methods in Political Science

9. 1.0 credit in:
LAWS 2501 [0.5] Law, State and Constitution
LAWS 2502 [0.5] Law, State and Citizen

10. 1.5 credits in:
ECON 1001 [0.5] Introduction to Microeconomics
ECON 1002 [0.5] Introduction to Macroeconomics
BUSI 3602 [0.5] Designing Organizational Systems: An Overview

11. 0.5 credit from:
PSCI 2002 [0.5] Canadian Politics and Civil Society
PSCI 2101 [0.5] Comparative Politics of the Global North
PSCI 2102 [0.5] Comparative Politics of the Global South

12. 1.0 credit from:
HIST 1002 [1.0] Europe in the 20th Century
HIST 1301 [0.5] Conflict and Change in Early Canadian History
HIST 1302 [0.5] Rethinking Modern Canadian History
HIST 1707 [1.0] World History
HIST 2301 [0.5] Canadian Political History
HIST 2311 [0.5] Environmental History of Canada

13. 0.5 credit from:
INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies
A. Credits Included in the Major (10.0 credits)

1. 3.5 credits in:
   - PAPM 1001 [0.5] Policy: Analysis, Implementation, and Evaluation
   - PAPM 2001 [0.5] Foundations of Public Policy: Political Thought
   - PAPM 2002 [0.5] Foundations of Public Policy: Economic Thought
   - PAPM 3000 [0.5] Policy Research
   - PAPM 4000 [0.5] Capstone Seminar in Public Affairs and Policy Management
   - PAPM 4099 [0.5] Policy Seminar
   - PSCI 2003 [0.5] Canadian Political Institutions

2. 1.0 credit in:
   - PSCI 2601 [0.5] International Relations: Global Politics
   - or PSCI 2602 [0.5] International Relations: Global Political Economy

3. 1.0 credit from:
   - ECON 3508 [0.5] Introduction to Economic Development
   - ECON 3509 [0.5] Development Planning and Project Evaluation
   - ECON 3601 [0.5] Introduction to International Trade
   - ECON 3602 [0.5] International Monetary Problems
   - LAWS 2105 [0.5] Social Justice and Human Rights
   - PSCI 3307 [0.5] Politics of Human Rights

4. 1.0 credit from:
   - LAWS 4102 [0.5] Controversies in Rights Theory
   - LAWS 4200 [0.5] International Economic Law
   - LAWS 4605 [0.5] Topics in International Law
   - PSCI 4104 [0.5] Development in the Global South - Theory and Practice
   - PSCI 4105 [0.5] Selected Problems in Development in the Global South
   - PSCI 4505 [0.5] Transitions to Democracy
   - PSCI 4603 [0.5] Analysis of International Political Economy
   - PSCI 4604 [0.5] Selected Problems in International Political Economy
   - PSCI 4805 [0.5] Political Economy of Global Money and Finance

5. 0.5 credit in:
   - PSCI 3207 [0.5] Introduction to Indigenous-Settler Encounters

For the policy stream in Global Economic Relations:
   - INAF 4401 [0.5] Topics in Global Economic Relations

For the policy stream in Rights and Human Development:
   - INAF 4301 [0.5] Topics in Rights and Human Development

For the policy stream in Indigenous Policy:
   - 0.5 credits in Indigenous Policy stream electives at the 4000-level

6. 3.0 credits in policy stream electives (at least 1.0 credit of which must be at the 4000 level):
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For the policy stream in Rights and Human Development:

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For the policy stream in Indigenous Policy:

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<tr>
<td>COMS 4316</td>
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<td>HIST 3510</td>
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A. Credits Included in the Major (10.0 credits)

1. 3.5 credits in:

- PSCI 1001 [0.5] Introduction to Indigenous Peoplehood Studies
- PSCI 1011 [0.5] Introduction to Indigenous-Settler Encounters

2. 1.0 credit in:

For the policy stream in Global Economic Relations:
- LAWS 2601 [0.5] Public International Law
- LAWS 3604 [0.5] International Organizations

For the policy stream in Rights and Human Development:
- LAWS 2601 [0.5] Public International Law
- LAWS 3602 [0.5] International Human Rights

For the policy stream in Indigenous Policy:
- LAWS 2501 [0.5] Law, State and Constitution
- LAWS 2502 [0.5] Law, State and Citizen
- LAWS 3504 [0.5] Law and Aboriginal Peoples

3. 4.5 credits in free electives

Total Credits 20.0

B. Specialization in International Policy Studies

1. Specialization in International Policy Studies (International Relations and Conflict)
B.P.A.P.M. (20.0 credits)

A. Credits Included in the Major (10.0 credits)

1. 3.5 credits in:

- PSCI 2001 [0.5] Foundations of Public Policy: Political Thought
- PSCI 2002 [0.5] Foundations of Public Policy: Economic Thought
- PSCI 2004 [0.5] Policy Research
- PSCI 2000 [0.5] Capstone Seminar in Public Affairs and Policy Management
- PAPM 1001 [0.5] Policy: Analysis, Implementation, and Evaluation

2. 1.0 credit in:

- INAF 3001 [0.5] Understanding Policy in a Global Context
- INAF 2002 [0.5] Applied Policy in a Global Context

3. 0.5 credit from:

- PSCI 2501 [0.5] International Relations: Global Politics
- PSCI 2602 [0.5] International Relations: Global Political Economy

4. 0.5 credit from:

- ECON 3501 [0.5] Introduction to International Trade
- ECON 3602 [0.5] International Monetary Problems

5. 1.0 credit from:

- PSCI 3405 [0.5] Comparative Public Policy Analysis
- PSCI 3603 [0.5] Strategic Thought and International Security
- PSCI 3606 [0.5] Canadian Foreign Policy
- PSCI 3607 [0.5] North American Security and Defence Policy

6. 1.0 credit from:

- PAPM 3000 [0.5] Canadian Political Institutions
- PAPM 3001 [0.5] Comparing Public Policy: Theory and Practice
- PAPM 3002 [0.5] Comparative Policy Analysis and Management

Total Credits 20.0
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GINS 4090 [0.5] Honours Seminar in Global and International Studies
HIST 3217 [0.5] Empire and Globalization
HIST 3304 [0.5] Canada-United States Relations
HIST 3306 [0.5] Canada's International Policies
HIST 3800 [0.5] International History 1914-41
HIST 3801 [0.5] International History 1941-90
HIST 3905 [0.5] Topics in International History
INAF 4101 [0.5] Topics in Conflict and Conflict Management
INAF 4301 [0.5] Topics in Rights and Human Development
INAF 4401 [0.5] Topics in Global Economic Relations
IPAF 4900 [0.5] Research Experience Course
LAWS 4102 [0.5] Controversies in Rights Theory
LAWS 4106 [0.5] Law and Violence
LAWS 4304 [0.5] Policing and Social Surveillance
LAWS 4309 [0.5] State Security and Dissent
LAWS 4601 [0.5] Transnational Law and Human Rights
LAWS 4605 [0.5] Topics in International Law
LAWS 4610 [0.5] Special Topics in Transnational Law and Human Rights
PAPM 4908 [1.0] Honours Research Essay
PSCI 3107 [0.5] The Causes of War
PSCI 3405 [0.5] Comparative Public Policy Analysis
PSCI 3603 [0.5] Strategic Thought and International Security
PSCI 3607 [0.5] North American Security and Defence Policy
PSCI 3608 [0.5] Migration Governance
PSCI 3802 [0.5] Globalization and Human Rights
PSCI 4008 [0.5] National Security and Intelligence in the Modern State
PSCI 4601 [0.5] Foreign Policies of Soviet Successor States
PSCI 4606 [0.5] American Foreign Policy
PSCI 4608 [0.5] European Integration and European Security
PSCI 4800 [0.5] Advanced International Relations Theory
PSCI 4801 [0.5] Selected Problems in Global Politics
PSCI 4803 [0.5] Foreign Policies of Major East Asian Powers
PSCI 4806 [0.5] Transatlantic Security Issues

B. Credits Not Included in the Major CGPA (10.0 credits)

9. 1.0 credit in: 1.0
PSCI 2701 [0.5] Introduction to Research Methods in Political Science
PSCI 2702 [0.5] Quantitative Research Methods in Political Science

10. 1.0 credit in: 1.0
LAWS 2601 [0.5] Public International Law
LAWS 3604 [0.5] International Organizations

11. 1.5 credits in: 1.5

ECON 1001 [0.5] Introduction to Microeconomics
ECON 1002 [0.5] Introduction to Macroeconomics
BUSI 3602 [0.5] Designing Organizational Systems: An Overview

12. 0.5 credit from: 0.5
PSCI 2002 [0.5] Canadian Politics and Civil Society
PSCI 2101 [0.5] Comparative Politics of the Global North
PSCI 2102 [0.5] Comparative Politics of the Global South

13. 1.0 credit from: 1.0
HIST 1002 [1.0] Europe in the 20th Century
HIST 1301 [0.5] Conflict and Change in Early Canadian History
HIST 1302 [0.5] Rethinking Modern Canadian History
HIST 1707 [1.0] World History
HIST 2301 [0.5] Canadian Political History
HIST 2311 [0.5] Environmental History of Canada

14. 0.5 credit from: 0.5
INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies
INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters

15. 4.5 credits in free electives 4.5

C. Additional Requirement
16. In addition to satisfying the French language requirement, students must successfully complete 1.0 credit in a language or possess an equivalent level of proficiency as demonstrated by successfully completing a language test. The language may be either French at a level higher than FREN 1100, or, with the permission of the Director, another language directly relevant to their studies. Students registered in the International Policy Studies specialization will be required to use one of their elective credits if they satisfy this additional language requirement through course work.

Total Credits 20.0

Specialization in Public Policy and Administration (Economic Policy) B.P.A.P.M. (20.0 credits)
Specialization in Public Policy and Administration (Environmental and Sustainable Energy Policy) B.P.A.P.M. (20.0 credits)
Specialization in Public Policy and Administration (Social Policy) B.P.A.P.M. (20.0 credits)
Specialization in Public Policy and Administration (Indigenous Policy) B.P.A.P.M (20.0 credits)

A. Credits Included in the Major (10.0 credits)
1. 3.5 credits in: 3.5
PAPM 1001 [0.5] Policy: Analysis, Implementation, and Evaluation
PAPM 2001 [0.5] Foundations of Public Policy: Political Thought
PAPM 2002 [0.5] Foundations of Public Policy: Economic Thought
PAPM 3000 [0.5] Policy Research
PAPM 4000 [0.5] Capstone Seminar in Public Affairs and Policy Management
PAPM 4099 [0.5] Policy Seminar
PSCI 2003 [0.5] Canadian Political Institutions

2. **1.0 credit from:**
ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors
ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors
ECON 3201 [0.5] Economic Thought and Policy in Canada
ECON 3220 [0.5] Canadian Economic History
ECON 3230 [0.5] Selected Topics in Economic History
ECON 3300 [0.5] Public Policy Toward Business
ECON 3360 [0.5] Introduction to Labour Economics
ECON 3370 [0.5] The Economics of Migration
ECON 3380 [0.5] The Economics of Gender and Ethnicity
ECON 3420 [0.5] Economic Theories of Federalism
ECON 3460 [0.5] Introduction to Health Economics
ECON 3801 [0.5] Regional Economics
ECON 3803 [0.5] The Economics of Natural Resources
ECON 3804 [0.5] Environmental Economics
ECON 3820 [0.5] Topics in Canadian Economic Policy
ECON 3850 [0.5] Economics of Information and the Media
ECON 3856 [0.5] Housing Economics
ECON 3864 [0.5] Transportation Economics
HIST 3220 [0.5] Canadian Economic History

3. **1.5 credit in:**
ECON 3403 [0.5] Introduction to Public Economics: Expenditures
ECON 3405 [0.5] Introduction to Public Economics: Taxation
PADM 3105 [0.5] Management in the Public Sector

4. **0.5 credit in:**
PADM 4230 [0.5] Ethics for Public Policy

5. **0.5 credit in:**

For the policy stream in Economic Policy:
LAWS 3506 [0.5] Administrative Law
PSCI 3006 [0.5] Social Power in Canadian Politics
PSCI 3401 [0.5] Canadian Public Administration
PSCI 3402 [0.5] Canadian Public Policy

For the policy stream in Environmental and Sustainable Energy Policy:
ECON 3803 [0.5] The Economics of Natural Resources
ECON 3804 [0.5] Environmental Economics
ENST 3022/GEOG 3022 [0.5] Sustainable and Natural Resources
LAWS 3800 [0.5] Law of Environmental Quality

For the policy stream in Social Policy:
SOWK 3100 [0.5] Social Policy and Administration

For the policy stream in Indigenous Policy:
HIST 3510 [0.5] Indigenous Peoples of Canada
HIST 3511 [0.5] Themes in Indigenous History
LAWS 3504 [0.5] Law and Aboriginal Peoples

6. **3.0 credits in policy stream electives:**

For the policy stream in Economic Policy:
3.0 credits from Economic Policy electives list below, including at least 0.5 credit in PADM or ECON and 1.0 credit at the 4000 level:
BUSA 3102 [0.5] Introduction to Human Resources Management
BUSA 4105 [0.5] Managing Change
BUSA 4108 [0.5] Organizational Learning
BUSA 4607 [0.5] Management of Technology and Innovation
BUSA 4704 [0.5] The Business Environment in Europe
CDNS 3610 [0.5] The Canadian Political Economy Tradition
ECON 3220 [0.5] Canadian Economic History
ECON 3230 [0.5] Selected Topics in Economic History
ECON 3300 [0.5] Public Policy Toward Business
ECON 3360 [0.5] Introduction to Labour Economics
ECON 3365 [0.5] Introduction to Industrial Relations
ECON 3370 [0.5] The Economics of Migration
ECON 3420 [0.5] Economic Theories of Federalism
ECON 3450 [0.5] Political Economy in the Modern State
ECON 3460 [0.5] Introduction to Health Economics
ECON 3508 [0.5] Introduction to Economic Development
ECON 3600 [0.5] Introduction to International Economics
ECON 3601 [0.5] Introduction to International Trade
ECON 3607 [0.5] Monetary and Financial Institutions
ECON 3801 [0.5] Regional Economics
ECON 3803 [0.5] The Economics of Natural Resources
ECON 3807 [0.5] European Economic Integration
ECON 3820 [0.5] Topics in Canadian Economic Policy
ECON 3860 [0.5] Agricultural Economics
ECON 3870 [0.5] Comparative Economic Systems
GEOG 3404 [0.5] Geographies of Economic Development
IPAF 4900 [0.5] Research Experience Course
LAWS 3005 [0.5] Law and Regulation
LAWS 3201 [0.5] Business Enterprise Frameworks
LAWS 3202 [0.5] Intellectual Property
LAWS 3205 [0.5] Consumer Law
LAWS 3208 [0.5] International Trade Regulation
LAWS 3401 [0.5] Employment Law
LAWS 3405 [0.5] Labour Law
LAWS 4200 [0.5] International Economic Law
LAWS 4507 [0.5] Administrative Law and Control
PADM 4214 [0.5] Budgetary Policy in the Public Sector
PADM 4220 [0.5] Regulation and Public Policy
For the policy stream in Environmental and Sustainable Energy Policy:

3.0 credits from the Environmental and Sustainable Energy electives list below, including 1.0 credit at the 4000 level:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSI 3119</td>
<td>Business and Environmental Sustainability</td>
</tr>
<tr>
<td>ECON 3300</td>
<td>Public Policy Toward Business</td>
</tr>
<tr>
<td>ENST 2001</td>
<td>Sustainable Futures: Environmental Challenges and Solutions</td>
</tr>
<tr>
<td>ENST 3022/GEOG 3206</td>
<td>Environmental and Natural Resources</td>
</tr>
<tr>
<td>ENST 4006</td>
<td>Environmental Policy Analysis</td>
</tr>
<tr>
<td>GEOG 2500</td>
<td>Climate Change: Social Science Perspectives</td>
</tr>
<tr>
<td>GEOG 3023</td>
<td>Cities in a Global World</td>
</tr>
<tr>
<td>GEOG 3206</td>
<td>Health, Environment, and Society</td>
</tr>
<tr>
<td>GEOG 3209</td>
<td>Sustainability and Environment in the South</td>
</tr>
<tr>
<td>GEOG 4004</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>GEOG 4022</td>
<td>Seminar in People, Resources and Environmental Change</td>
</tr>
<tr>
<td>HUMR 3503</td>
<td>Global Environmental Justice</td>
</tr>
<tr>
<td>IPAF 4900</td>
<td>Research Experience Course</td>
</tr>
<tr>
<td>LAWS 3005</td>
<td>Law and Regulation</td>
</tr>
<tr>
<td>LAWS 3800</td>
<td>Law of Environmental Quality</td>
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<tr>
<td>LAWS 4507</td>
<td>Administrative Law and Control</td>
</tr>
<tr>
<td>PADM 4220</td>
<td>Regulation and Public Policy</td>
</tr>
<tr>
<td>PADM 4611</td>
<td>Science and Technology Policies</td>
</tr>
<tr>
<td>PADM 4612</td>
<td>Industrial Policy, Innovation and Sustainable Production</td>
</tr>
<tr>
<td>PADM 4615</td>
<td>Politics and Policy of Energy in Canada</td>
</tr>
<tr>
<td>PADM 4616</td>
<td>Environmental Policy</td>
</tr>
<tr>
<td>PAPM 4908</td>
<td>Honours Research Essay</td>
</tr>
<tr>
<td>PHIL 2380</td>
<td>Introduction to Environmental Ethics</td>
</tr>
<tr>
<td>PSCI 3103</td>
<td>State, Society and Economy in Northeast Asia</td>
</tr>
<tr>
<td>PSCI 3402</td>
<td>Canadian Public Policy</td>
</tr>
<tr>
<td>PSCI 3406</td>
<td>Public Affairs and Media Strategies</td>
</tr>
<tr>
<td>PSCI 3703</td>
<td>Governing in the Global Economy</td>
</tr>
<tr>
<td>PSCI 3801</td>
<td>Environmental Politics</td>
</tr>
<tr>
<td>PSCI 4404</td>
<td>The Design and Evolution of Public Institutions</td>
</tr>
<tr>
<td>PSCI 4603</td>
<td>Analysis of International Political Economy</td>
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<tr>
<td>PSCI 4604</td>
<td>Selected Problems in International Political Economy</td>
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<tr>
<td>PSCI 4805</td>
<td>Political Economy of Global Money and Finance</td>
</tr>
<tr>
<td>TSES 3002</td>
<td>Energy and Sustainability</td>
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<tr>
<td>TSES 4001</td>
<td>Technology and Society: Risk</td>
</tr>
<tr>
<td>TSES 4007</td>
<td>Product Life Cycle Analysis</td>
</tr>
<tr>
<td>TSES 4008</td>
<td>Environmentally Harmonious Lifestyles</td>
</tr>
</tbody>
</table>

For the policy stream in Social Policy:

3.0 credits from the Social Policy electives list below, including at least 0.5 credit in PADM or SOWK and 0.5 credit at the 4000 level:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 3360</td>
<td>Introduction to Labour Economics</td>
</tr>
<tr>
<td>ECON 3460</td>
<td>Introduction to Health Economics</td>
</tr>
<tr>
<td>GEOG 3023</td>
<td>Cities in a Global World</td>
</tr>
<tr>
<td>GEOG 3206</td>
<td>Health, Environment, and Society</td>
</tr>
<tr>
<td>GEOG 3501</td>
<td>Geographies of the Canadian North</td>
</tr>
<tr>
<td>HIST 3510</td>
<td>Indigenous Peoples of Canada</td>
</tr>
<tr>
<td>HLTH 3103</td>
<td>Health Policy and Canada's Health Care System</td>
</tr>
<tr>
<td>IPAF 4900</td>
<td>Research Experience Course</td>
</tr>
<tr>
<td>LAWS 3001</td>
<td>Women and the Legal Process</td>
</tr>
<tr>
<td>LAWS 3503</td>
<td>Equality and Discrimination</td>
</tr>
<tr>
<td>LAWS 3504</td>
<td>Law and Aboriginal Peoples</td>
</tr>
<tr>
<td>LAWS 3506</td>
<td>Administrative Law</td>
</tr>
<tr>
<td>LAWS 3508</td>
<td>Health Law</td>
</tr>
<tr>
<td>LAWS 4507</td>
<td>Administrative Law and Control</td>
</tr>
<tr>
<td>LAWS 4607</td>
<td>Immigration and Refugee Law</td>
</tr>
<tr>
<td>PADM 4213</td>
<td>Gender and Public Policy</td>
</tr>
<tr>
<td>PADM 4221</td>
<td>Health Policy in Canada</td>
</tr>
<tr>
<td>PADM 4224</td>
<td>Aboriginal Policy</td>
</tr>
<tr>
<td>PADM 4227</td>
<td>Education Policy</td>
</tr>
<tr>
<td>PADM 4228</td>
<td>Social Policy</td>
</tr>
<tr>
<td>PADM 4817</td>
<td>Health Policy in Developing Countries</td>
</tr>
<tr>
<td>PAPM 4908</td>
<td>Honours Research Essay</td>
</tr>
<tr>
<td>PSCI 3405</td>
<td>Comparative Public Policy Analysis</td>
</tr>
<tr>
<td>PSCI 3402</td>
<td>Canadian Public Policy</td>
</tr>
<tr>
<td>PSCI 3406</td>
<td>Public Affairs and Media Strategies</td>
</tr>
<tr>
<td>PSCI 4006</td>
<td>Legislatures and Representation in Canada</td>
</tr>
<tr>
<td>PSCI 4103</td>
<td>The Modern State</td>
</tr>
<tr>
<td>PSCI 4403</td>
<td>Reproductive Rights Policy in North America</td>
</tr>
<tr>
<td>PSCI 4506</td>
<td>Women and Politics in North America</td>
</tr>
<tr>
<td>PSCI 4610</td>
<td>Politics of Migration Management</td>
</tr>
<tr>
<td>SOCI 2010</td>
<td>Critical Approaches to Economic Inequality</td>
</tr>
<tr>
<td>SOCI 3300</td>
<td>Studies in the Sociology of Education</td>
</tr>
<tr>
<td>SOWK 4102</td>
<td>Indigenous Peoples and Social Policy</td>
</tr>
<tr>
<td>SOWK 4103</td>
<td>Practice and Policy in Immigration</td>
</tr>
</tbody>
</table>

For the policy stream in Indigenous Policy:

3.0 credits from the Indigenous Policy electives list below, including 1.0 credit at the 4000 level:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMS 4316</td>
<td>Indigenous Media in Global Contexts</td>
</tr>
<tr>
<td>HIST 3510</td>
<td>Indigenous Peoples of Canada</td>
</tr>
</tbody>
</table>
### Credits Not Included in the Major CGPA (10.0 credits)

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0</td>
<td>PSCI 2701</td>
<td>Introduction to Research Methods in Political Science</td>
</tr>
<tr>
<td></td>
<td>PSCI 2702</td>
<td>Quantitative Research Methods in Political Science</td>
</tr>
<tr>
<td>1.0</td>
<td>LAWS 2501</td>
<td>Law, State and Constitution</td>
</tr>
<tr>
<td></td>
<td>LAWS 2502</td>
<td>Law, State and Citizen</td>
</tr>
<tr>
<td>1.5</td>
<td>BUSI 3602</td>
<td>Designing Organizational Systems: An Overview</td>
</tr>
<tr>
<td></td>
<td>ECON 1001</td>
<td>Introduction to Microeconomics</td>
</tr>
<tr>
<td></td>
<td>ECON 1002</td>
<td>Introduction to Macroeconomics</td>
</tr>
<tr>
<td>0.5</td>
<td>PSCI 2002</td>
<td>Canadian Politics and Civil Society</td>
</tr>
<tr>
<td></td>
<td>PSCI 2101</td>
<td>Comparative Politics of the Global North</td>
</tr>
<tr>
<td></td>
<td>PSCI 2102</td>
<td>Comparative Politics of the Global South</td>
</tr>
<tr>
<td>1.0</td>
<td>HIST 1002</td>
<td>Europe in the 20th Century</td>
</tr>
<tr>
<td></td>
<td>HIST 1301</td>
<td>Conflict and Change in Early Canadian History</td>
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<td>HIST 1302</td>
<td>Rethinking Modern Canadian History</td>
</tr>
<tr>
<td></td>
<td>HIST 1707</td>
<td>World History</td>
</tr>
<tr>
<td></td>
<td>HIST 2301</td>
<td>Canadian Political History</td>
</tr>
</tbody>
</table>

### Regulations

In addition to the requirements listed here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar.) Students should consult the College when planning their program and selecting courses.

### Graduation

Following are the minimum CGPA requirements for B.P.A.P.M. graduation:

- **Overall CGPA:** 6.50
- **Major CGPA:** 6.50

### Academic Performance Evaluation for Bachelor of Public Affairs and Policy Management

Students in the B.P.A.P.M. are subject to the standard Academic Performance Evaluation (APE) process with the following additions and amendments:

1. Students are in **Good Standing** at the first APE if they have a Major CGPA of at least 7.0 and an Overall CGPA of at least 7.0. A student who is not in Good Standing but has a Major CGPA of at least 6.0 and an Overall CGPA of at least 6.0 is on Academic Warning. Students with a Major CGPA of less than 6.0 or an Overall CGPA of less than 6.0 are required to leave the program with the status of **Continue in Alternate (CA)** or the status **Dismissed from Program (DP).**

2. Students in **Good Standing** at any subsequent APE and at graduation if they have a Major CGPA of at least 6.0 and an Overall CGPA of at least 6.0. Students who do not receive **Good Standing** at any subsequent Academic Performance Evaluation will be required to withdraw from the program with the status **Continue in Alternate (CA)** or the status **Dismissed from Program (DP).**

### Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

### Undergraduate Co-operative Education Policy

#### Admission Requirements

Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to
their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts. While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term.

Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals
The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student’s failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students
All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit.

Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Public Affairs and Policy Management: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work);
- Have successfully completed COOP 1000 [0.0]

In addition to the following:
1. Registered as a full-time student in the B.P.A.P.M. program;
2. Obtained an overall CGPA of 9.00 or higher calculated on at least 5.0 credits.

Students in the Bachelor of Public Affairs and Policy Management must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: PAPM 3999

Work/Study Pattern:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
<td>Pattern</td>
<td>Term</td>
</tr>
<tr>
<td>Fall</td>
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<td></td>
<td>Winter</td>
<td></td>
<td>W/S</td>
</tr>
<tr>
<td>Summer</td>
<td></td>
<td>W</td>
<td></td>
<td>S</td>
</tr>
</tbody>
</table>

Legend
S: Study
W: Work
O: Optional
* indicates recommended work study pattern
** indicates student finds own employer for this work-term.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree
- B.P.A.P.M.

Admission Requirements
First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

Advanced Standing
Applications for admission with advanced standing to the program will be evaluated individually by the Program Management Committee. Advanced standing will be granted only for those courses deemed to be appropriate to the program. On admission, students will not receive credit for courses graded below C-.

Continuation to second year will be guaranteed only to those students who have an overall CGPA of 7.00 or higher and a grade of B- or higher in PAPM 1001.

Co-op Option
Direct Admission to the first year of the Co-op Option
Applicants must:
1. meet the required overall admission cut-off average and/or prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the B.P.A.P.M. program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Public Affairs and Policy Management (PAPM) Courses

PAPM 1001 [0.5 credit]
Policy: Analysis, Implementation, and Evaluation
The processes of policy-making, implementation and evaluation. Forces that shape policy deliberations and alternative tools for managing policy action and policy evaluation. Theoretical approaches to understanding the origins of policy, and methods by which programs are designed and assessed.
Includes: Experiential Learning Activity
Precludes additional credit for PAPM 2000. Lecture two hours a week, discussion one hour per week.

PAPM 2001 [0.5 credit]
Foundations of Public Policy: Political Thought
Theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in political philosophy and theory, students consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs, public interest.
Precludes additional credit for PAPM 1000. Lecture two hours a week, discussion one hour per week.

PAPM 2002 [0.5 credit]
Foundations of Public Policy: Economic Thought
Theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in economic philosophy and theory, students consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs, public interest.
Precludes additional credit for PAPM 1000. Lecture two hours a week, discussion one hour per week.

PAPM 3000 [0.5 credit]
Policy Research
An examination of the research strategies and techniques relevant to policy analysis and evaluation. Using the case study method, the role of research and research organizations in the policy process is discussed. The issue of ethical dilemmas in policy research is also considered.
Includes: Experiential Learning Activity
Prerequisite(s): PSCI 2701 and PSCI 2702, or COMM 2001, or ECON 2201 and ECON 2202 and Good Standing in the Bachelor of Public Affairs and Policy Management program.
Lecture and discussion three hours a week.

PAPM 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

PAPM 4000 [0.5 credit]
Capstone Seminar in Public Affairs and Policy Management
Policy workshop focusing on the application of public affairs analysis to develop problem solving and research skills. Seminar is policy-focused and organized by area of Specialization in the program. Students, working in small groups, examine concrete policy problems, actual or simulated, in specific institutional contexts.
Includes: Experiential Learning Activity
Prerequisite(s): PAPM 3000 and Good Standing in the Bachelor of Public Affairs and Policy Management program. Seminar three hours a week.

PAPM 4099 [0.5 credit]
Policy Seminar
Students address a specific policy problem or problems, in interaction with local, national or international policy experts or practitioners. Emphasis on policy analysis, research, and communication skills.
Includes: Experiential Learning Activity
Seminar three hours per week.

PAPM 4100 [0.5 credit]
Special Topics in Public Affairs and Policy Management
Analysis of selected issues in public affairs and policy management not ordinarily treated in the regular course program. The choice of topics will vary from year to year. Students should consult with the College regarding the topic offered.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.P.A.P.M. program or permission of the Kroeger College.
Seminar three hours per week.

PAPM 4908 [1.0 credit]
Honours Research Essay
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Public Affairs and Policy Management program with a Major CGPA or 9.0 or better, or permission of the Director of the Public Affairs and Policy Management program.

Religion
This section presents the requirements for programs in:
- Religion B.A. Honours
- Religion B.A. Combined Honours
- Religion B.A.
Program Requirements

Religion

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in Foundations
   - RELI 1710 [0.5] Judaism, Christianity, Islam
   - RELI 1712 [0.5] Religions of South and East Asia

2. 0.5 credit from Traditions and Contexts: Judaism, Christianity, and Islam
   - RELI 2110 [0.5] Judaism
   - RELI 2200 [0.5] Christianity
   - RELI 2310 [0.5] Islam

3. 0.5 credit from Traditions and Contexts: Hinduism, Buddhism, Religions of China
   - RELI 2410 [0.5] Buddhism
   - RELI 2510 [0.5] Hinduism
   - RELI 2600 [0.5] Religions of China

4. 0.5 credit from Indigenous Traditions
   - RELI 2800 [0.5] Indigenous Traditions

5. 1.0 credit from Comparative and Global Themes
   - RELI 1741 [0.5] Global Religions: Identity and Community
   - RELI 2230 [0.5] Global Christianity
   - RELI 2535 [0.5] Religion and Gender
   - RELI 2711 [0.5] Love and Its Myths
   - RELI 2712 [0.5] Religious Diversity of Canada
   - RELI 2713 [0.5] Mystical and Contemplative Traditions
   - RELI 2732 [0.5] Death and Afterlife
   - RELI 2736 [0.5] Religion and Society
   - RELI 2738 [0.5] Philosophy of Religion
   - RELI 2810 [0.5] Special Topics in Religion and Popular Culture
   - RELI 2811 [0.5] Religions and the Environment
   - RELI 3000 [0.5] Religion and Public Life
   - RELI 3101 [0.5] Special Topics in Religions and the Body
   - RELI 3301 [0.5] Music and Religion
   - RELI 3722 [0.5] Religion and Violence

6. 1.5 credits in Disciplinary Core Courses
   - RELI 2741 [0.5] Big Questions in Religious Studies
   - RELI 3741 [0.5] Classical Approaches to Religion
   - RELI 4741 [0.5] Contemporary Issues in the Study of Religion

7. 0.5 credit in RELI at the 2000 level or above
   (excluding RELI 2741)

8. 1.0 credit in RELI at the 3000 level (excluding RELI 3741)

9. 1.5 credits in RELI at the 4000 level (excluding RELI 4741)

B. Credits Not Included in the Major CGPA (12.0 credits)

10. 8.0 credits in electives not in RELI

11. 4.0 credits in free electives (can be in RELI)

Total Credits 20.0

Religion

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Religion Major CGPA (6.0 credits)

1. 1.0 credit in Foundations
   - RELI 1710 [0.5] Judaism, Christianity, Islam
   - RELI 1712 [0.5] Religions of South and East Asia

2. 0.5 credit from Traditions and Contexts: Judaism, Christianity, and Islam
   - RELI 2110 [0.5] Judaism
   - RELI 2200 [0.5] Christianity
   - RELI 2310 [0.5] Islam

3. 0.5 credit from Traditions and Contexts: Hinduism, Buddhism, Religions of China
   - RELI 2410 [0.5] Buddhism
   - RELI 2510 [0.5] Hinduism
   - RELI 2600 [0.5] Religions of China

4. 0.5 credit from Indigenous Traditions
   - RELI 2800 [0.5] Indigenous Traditions

5. 1.0 credit from Comparative and Global Themes
   - RELI 1741 [0.5] Global Religions: Identity and Community
   - RELI 2230 [0.5] Global Christianity
   - RELI 2535 [0.5] Religion and Gender
   - RELI 2711 [0.5] Love and Its Myths
   - RELI 2712 [0.5] Religious Diversity of Canada
   - RELI 2713 [0.5] Mystical and Contemplative Traditions
   - RELI 2732 [0.5] Death and Afterlife
   - RELI 2736 [0.5] Religion and Society
   - RELI 2738 [0.5] Philosophy of Religion
   - RELI 2810 [0.5] Special Topics in Religion and Popular Culture
   - RELI 2811 [0.5] Religions and the Environment
   - RELI 3000 [0.5] Religion and Public Life
   - RELI 3101 [0.5] Special Topics in Religions and the Body
   - RELI 3301 [0.5] Music and Religion
   - RELI 3722 [0.5] Religion and Violence

6. 1.5 credits in Disciplinary Core Courses
   - RELI 2741 [0.5] Big Questions in Religious Studies
   - RELI 3741 [0.5] Classical Approaches to Religion
   - RELI 4741 [0.5] Contemporary Issues in the Study of Religion

7. 1.0 credit in RELI at the 4000 level (excluding RELI 4741)

B. Additional Requirements (14.0 credits)

8. The requirements from the other discipline must be satisfied

9. Sufficient free electives to make 20.0 credits for the degree

Total Credits 20.0
## Religion
### B.A. (15.0 credits)

**A. Credits Included in the Major CGPA (6.0 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 1710 (0.5) Judaism, Christianity, Islam</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 1712 (0.5) Religions of South and East Asia</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**B. 0.5 credit from Traditions and Contexts: Judaism, Christianity, and Islam**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 2110 (0.5) Judaism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2200 (0.5) Christianity</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2310 (0.5) Islam</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**C. 0.5 credit from Traditions and Contexts: Hinduism, Buddhism, Religions of China**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 2410 (0.5) Buddhism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2510 (0.5) Hinduism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2600 (0.5) Religions of China</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**D. 0.5 credit from Indigenous Traditions**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 2800 (0.5) Indigenous Traditions</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**E. 1.5 credits from Comparative and Global Themes**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 2535 (0.5) Religion and Gender</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2711 (0.5) Love and Its Myths</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2712 (0.5) Religious Diversity of Canada</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2713 (0.5) Mystical and Contemplative Traditions</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2732 (0.5) Death and Afterlife</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2736 (0.5) Religion and Society</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2810 (0.5) Special Topics in Religion and Popular Culture</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2811 (0.5) Religions and the Environment</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3000 (0.5) Religion and Public Life</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3101 (0.5) Special Topics in Religions and the Body</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3722 (0.5) Religion and Violence</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**F. 1.0 credit in Disciplinary Core Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 2741 (0.5) Big Questions in Religious Studies</td>
<td>1.0</td>
</tr>
<tr>
<td>RELI 3741 (0.5) Classical Approaches to Religion</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**G. 1.0 credit in RELI at the 2000-level or above**

**B. Credits Not Included in the Major CGPA (9.0 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 1710 (0.5) Judaism, Christianity, Islam</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2110 (0.5) Judaism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2200 (0.5) Christianity</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2310 (0.5) Islam</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**Specialization in Global Religions: Identity and Community**

**B.G.In.S. Honours (20.0 credits)**

**A. Credits Included in the Major CGPA (12.0 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GINS 1000 (0.5) Global History</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 1010 (0.5) International Law and Politics</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 1020 (0.5) Ethnography, Globalization and Culture</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 2000 (0.5) Globalization and International Economic Issues</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 2010 (0.5) Global Literatures</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 3010 (0.5) Global and International Theory</td>
<td>0.5</td>
</tr>
<tr>
<td>GINS 3020 (0.5) Places, Boundaries, Movements and Global Environmental Change</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 1710 (0.5) Judaism, Christianity, Islam</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2110 (0.5) Judaism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2200 (0.5) Christianity</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2310 (0.5) Islam</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2410 (0.5) Buddhism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2510 (0.5) Hinduism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2600 (0.5) Religions of China</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2800 (0.5) Indigenous Traditions</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**GINS 4090 (0.5) Honours Seminar in Global and International Studies**

**2. 0.0 credit in:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GINS 1300 (0.0) International Experience Requirement Preparation</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**3. 7.5 credits in: the Specialization**

**a. 1.5 credits in Global Religious Studies Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 1741 (0.5) Global Religions: Identity and Community</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2741 (0.5) Big Questions in Religious Studies</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3741 (0.5) Classical Approaches to Religion</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**b. 1.0 credit from Foundations in Judaism, Christianity, and Islam (no more than 0.5 credit at the 1000 level)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 1710 (0.5) Judaism, Christianity, Islam</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2110 (0.5) Judaism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2200 (0.5) Christianity</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2210 (0.5) Early Christianity</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2230 (0.5) Global Christianity</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2310 (0.5) Islam</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2330 (0.5) The Qur'an</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2350 (0.5) Classical Islamic Thought</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2355 (0.5) Islamic Ethics</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2735 (0.5) Greek Religion</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2737 (0.5) Roman Religion</td>
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</tbody>
</table>

**c. 1.0 credit from Foundations in Asian or Indigenous Religions (no more than 0.5 credit at the 1000 level)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>RELI 1712 (0.5) Religions of South and East Asia</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2410 (0.5) Buddhism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2510 (0.5) Hinduism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2720 (0.5) Indigenous Religions of Canada</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2750 (0.5) Sikhism</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2800 (0.5) Indigenous Traditions</td>
<td>0.5</td>
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</table>

**d. 1.0 credit in Advanced Traditions and Contexts**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 3140 (0.5) Holocaust Encounters</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3220 (0.5) Reformation Europe</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3230 (0.5) Jesus of Nazareth</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3231 (0.5) Paul of Tarsus</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3232 (0.5) Christian Discipline</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 3250 (0.5) Evangelical Christianity in Social-Historical Perspective</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**e. 1.5 credits from Comparative and Global Religion (at least 0.5 credit at the third-year level)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELI 2535 (0.5) Religion and Gender</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2711 (0.5) Love and Its Myths</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2712 (0.5) Religious Diversity of Canada</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2713 (0.5) Mystical and Contemplative Traditions</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2714 (0.5) Global Religions: Identity and Community</td>
<td>0.5</td>
</tr>
<tr>
<td>RELI 2715 (0.5) Classical Approaches to Religion</td>
<td>0.5</td>
</tr>
</tbody>
</table>
RELI 2732 [0.5] Death and Afterlife
RELI 2736 [0.5] Religion and Society
RELI 2810 [0.5] Special Topics in Religion and Popular Culture
RELI 2811 [0.5] Religions and the Environment
RELI 2840 [0.5] Topics in Religion
RELI 3000 [0.5] Religion and Public Life
RELI 3101 [0.5] Special Topics in Religions and the Body
RELI 3722 [0.5] Religion and Violence
RELI 3840 [0.5] Topics in Religion
RELI 3850 [0.5] Topics in the Study of Religion Abroad

f. 1.5 credits from Honours Seminars and Honours Research Essay:
RELI 4741 [0.5] Contemporary Issues in the Study of Religion

and
1.0 credit in RELI at the 4000 level

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits 20.0

Stream in Global Religions: Identity and Community
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5] Global History
GINS 1010 [0.5] International Law and Politics
GINS 1020 [0.5] Ethnography, Globalization and Culture
GINS 2000 [0.5] Ethics and Globalization
GINS 2010 [0.5] Globalization and International Economic Issues
GINS 2020 [0.5] Global Literatures
GINS 3010 [0.5] Global and International Theory
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Global Religious Studies Core
RELI 1741 [0.5] Global Religions: Identity and Community
RELI 2741 [0.5] Big Questions in Religious Studies
RELI 3741 [0.5] Classical Approaches to Religion

b. Foundations in Judaism, Christianity, and Islam
RELI 1710 [0.5] Judaism, Christianity, Islam
RELI 2110 [0.5] Judaism
RELI 2121 [0.5] Hebrew Bible
RELI 2200 [0.5] Christianity
RELI 2220 [0.5] Early Christianity
RELI 2230 [0.5] Global Christianity
RELI 2310 [0.5] Islam
RELI 2330 [0.5] The Qur’an
RELI 2350 [0.5] Classical Islamic Thought

RELI 2355 [0.5] Islamic Ethics
RELI 2735 [0.5] Greek Religion
RELI 2737 [0.5] Roman Religion
c. Foundations in Asian or Indigenous Religions
RELI 1712 [0.5] Religions of South and East Asia
RELI 2410 [0.5] Buddhism
RELI 2510 [0.5] Hinduism
RELI 2515 [0.5] Religion and Aesthetics in India
RELI 2750 [0.5] Sikhism
RELI 2720 [0.5] Indigenous Religions of Canada
RELI 2800 [0.5] Indigenous Traditions
d. Advanced Traditions and Contexts
RELI 3101 [0.5] Special Topics in Religions and the Body
RELI 3140 [0.5] Holocaust Encounters
RELI 3220 [0.5] Reformation Europe
RELI 3230 [0.5] Jesus of Nazareth
RELI 3231 [0.5] Paul of Tarsus
RELI 3232 [0.5] Christian Discipline
RELI 3250 [0.5] Evangelical Christianity in Social-Historical Perspective
RELI 3330 [0.5] Sufism
RELI 3340 [0.5] The Life and Image of Muhammad
RELI 3360 [0.5] Special Topics in Islamic Traditions & Narratives
RELI 3420 [0.5] Early Buddhism
RELI 3422 [0.5] Buddhism Beyond India
RELI 3520 [0.5] Early Hinduism
RELI 3522 [0.5] Modern Hinduism
RELI 3732 [0.5] Studies in Greek Art
RELI 3733 [0.5] Studies in Roman Art
e. Comparative and Global Religion
RELI 2535 [0.5] Religion and Gender
RELI 2711 [0.5] Love and Its Myths
RELI 2712 [0.5] Religious Diversity of Canada
RELI 2713 [0.5] Mystical and Contemplative Traditions
RELI 2732 [0.5] Death and Afterlife
RELI 2736 [0.5] Religion and Society
RELI 2738 [0.5] Philosophy of Religion
RELI 2840 [0.5] Topics in Religion
RELI 3722 [0.5] Religion and Violence
RELI 3840 [0.5] Topics in Religion
RELI 3850 [0.5] Topics in the Study of Religion Abroad

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in free electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Minor in Religion (4.0 credits)

Open to all undergraduate degree students not in Religion programs.

Requirements

1. 1.0 credit 1000-level RELI 1.0
2. 1.0 credit 2000-level or higher RELI 1.0
3. 1.0 credit 3000-level or higher RELI 1.0
4. 1.0 credit in RELI 1.0
5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

B.A. Regulations
The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars
B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement
Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESAF, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLFH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAS, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRJC, ECON, ENST, GEOG, GEOM, GINS, GPOL, IAFA, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered “Undeclared” if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would
be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar’s Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

**Minors, Concentrations and Specializations**

Students may apply to the Registrar’s Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Admissions Information**

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

**Admission Requirements**

**Degrees**

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

**First Year**

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

**Advanced Standing**

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**Religion (RELI) Courses**

Language courses RELI 1010 [1.0] Elementary Language Tutorial, RELI 2010 [1.0] Intermediate Language Tutorial and RELI 3010 [1.0] Advanced Language Tutorial are intended for students specializing in a particular religious tradition. They are offered according to the availability of members of the Discipline. Courses taken at the 2000-level or above will be mainly independent study under the supervision of a member of the Discipline. Students
interested in taking these courses should consult the Co-
ordinator.

**RELI 1010 [1.0 credit]**

*Elementary Language Tutorial*

Elementary study of the language required for studying a religious tradition.  
Precludes additional credit for RELI 1902 (no longer offered).  
Prerequisite(s): Major/Minor in Religion or permission of the department.  
Tutorial two hours a week.

**RELI 1710 [0.5 credit]**

*Judaism, Christianity, Islam*

A survey of the history, beliefs and practices of these major religious traditions.  
Includes: Experiential Learning Activity  
Precludes additional credit for RELI 1000.  
Lecture three hours a week.

**RELI 1712 [0.5 credit]**

*Religions of South and East Asia*

A survey of the history, beliefs, and practices of South and East Asian religious traditions, including Hinduism, Buddhism, Jainism, Sikhism, Daoism, Confucianism, and Shinto.  
Precludes additional credit for RELI 1715, RELI 1716.  
Lecture three hours per week.

**RELI 1731 [0.5 credit]**

*Varieties of Religious Experience*

The variety of religious experiences and their interpretations: myth, literature, art and religious doctrine.  
Topics include time, self, the other, journey and wisdom.  
Examples ranging from shamanistic experience to the abstractions of Buddhist philosophy.  
Precludes additional credit for RELI 1205, RELI 1206, RELI 1402, and RELI 2002.  
Prerequisite(s): restricted to students registered in the Bachelor of Humanities & Religion program.  
Lecture three hours a week.

**RELI 1741 [0.5 credit]**

*Global Religions: Identity and Community*

An introduction to major issues in the study of religion in global contexts, drawing on historical and contemporary examples.  
Lecture three hours a week.

**RELI 2110 [0.5 credit]**

*Judaism*

The history of Judaism and the Jewish people from the Second Temple until the present day.  
The organization, basic beliefs, social and ethical practices of the Jews and Judaism.  
Precludes additional credit for RELI 1008 and RELI 2508.  
Lecture three hours a week.

**RELI 2121 [0.5 credit]**

*Hebrew Bible*

Introduces the Hebrew Bible within historical and religious frameworks. All texts are in English.  
Precludes additional credit for RELI 3505C taught in 2007-2008.  
Prerequisite(s): RELI 1710 or RELI 1000 or RELI 2110 or RELI 2508 or permission of the department.  
Lecture three hours a week.

**RELI 2200 [0.5 credit]**

*Christianity*

An introduction to the history, beliefs, traditions, practices, and diversity of Christianity from its beginnings to the present day.  
Lecture three hours per week.

**RELI 2220 [0.5 credit]**

*Early Christianity*

Introduction to the critical study of the writings of the New Testament with discussion of their Hellenistic and Jewish background, the historical Jesus, Paul and his letters, and historical and sociological explanations for the rise of the early church and interpretation of its writings.  
Precludes additional credit for RELI 1003, RELI 1200 and RELI 2207.  
Lecture three hours a week.

**RELI 2230 [0.5 credit]**

*Global Christianity*

Survey of recent and current Christian movements around the world, both by region and thematically, with emphasis on institutions and networks that connect Christian communities across national boundaries.  
Special consideration is given to the cultural and political capacities of such Christian communities and networks.  
Lecture three hours a week.

**RELI 2310 [0.5 credit]**

*Islam*

The study of Muslim religious tradition and investigation of its organization, basic beliefs, social and ethical principles and practices.  
Precludes additional credit for RELI 1009 and RELI 2509.  
Lecture three hours a week.

**RELI 2330 [0.5 credit]**

*The Qur’an*

An examination of the Qur’an’s content, form, style, central themes, canonization, and classical and contemporary interpretive traditions.  
Prerequisite(s): second-year standing.  
Lecture three hours a week.
RELI 2350 [0.5 credit]
Classical Islamic Thought
A survey of the development of the central ideas and schools of Islamic theology and philosophy from the eighth century to the end of the seventeenth century CE.
Precludes additional credit for RELI 3320 or RELI 3321. Lecture three hours a week.

RELI 2355 [0.5 credit]
Islamic Ethics
A survey of Muslim ethical writings on the pursuit of virtue and the good life, human nature, individual agency, and moral responsibility.
Lecture three hours per week.

RELI 2410 [0.5 credit]
Buddhism
Basic beliefs and practices of the Buddhist tradition and a brief survey of its development and transformations in India, Sri Lanka, Southeast Asia, Tibet, China and Japan.
Precludes additional credit for RELI 1006 and RELI 2106. Lecture three hours a week.

RELI 2510 [0.5 credit]
Hinduism
Basic beliefs, practices, and social structures of the Hindu tradition as reflected in Hindu scriptures, myths and symbols, and philosophical schools.
Precludes additional credit for RELI 1005 and RELI 2005. Lecture three hours a week.

RELI 2515 [0.5 credit]
Religion and Aesthetics in India
Myths and symbols of the Indian tradition expressed in Hindu and Buddhist art. Hindu theories of beauty and the interface of the arts with the spiritual traditions of India.
Precludes additional credit for RELI 2005 (if taken before 2007-2008) and RELI 2008.
Prerequisite(s): second-year standing.
Lecture three hours a week.

RELI 2535 [0.5 credit]
Religion and Gender
An exploration of women and religion in historical and contemporary contexts.
Lecture three hours a week.

RELI 2600 [0.5 credit]
Religions of China
Survey of the origins, development, and diffusion of Chinese religious traditions, including Confucianism, Daoism, Chinese Buddhism and popular religion(s).
Includes: Experiential Learning Activity
Lecture three hours a week.

RELI 2710 [1.0 credit]
Maccabees to Muhammad
The early history, literature and ideas of Judaism, Christianity and Islam from 200 BCE to 750 CE.
Precludes additional credit for RELI 2208.
Prerequisite(s): restricted to students in the Bachelor of Humanities & Religion program.
Lecture three hours per week.

RELI 2711 [0.5 credit]
Love and Its Myths
Major devotional movements in Hinduism and Christianity, focusing on the love of the divine and philosophical accounts of these ideas over time.
Lecture three hours a week.

RELI 2712 [0.5 credit]
Religious Diversity of Canada
An historical survey emphasizing the interactions of various religious traditions in Canada, including indigenous religions, Christian missionary and colonial traditions, immigrant and global diaspora religions.
Precludes additional credit for RELI 2307 Section A (2007-2008).
Lectures three hours a week.

RELI 2713 [0.5 credit]
Mystical and Contemplative Traditions
An historical and functional study of mystical experience in its religious context, relying on examples from selected traditions such as the Christian, Buddhist, Hindu, Jewish and Muslim.
Precludes additional credit for RELI 2300.
Lecture three hours a week.

RELI 2720 [0.5 credit]
Indigenous Religions of Canada
Religions of Inuit, First Nations and Métis peoples, past and present. Considerations include concepts of tradition, syncretism and “creative ritual.” Primary sources may include textual, visual and oral materials. Course may include fieldwork, as well as in-class presentations by community elders.
Lecture three hours a week.

RELI 2722 [0.5 credit]
Death and Afterlife
The meaning of death and afterlife in some religious traditions and secular philosophies with emphasis on the Hindu teaching of the immortal soul; the Hebraic idea of collective survival; the Christian doctrine of resurrection of the body; the Buddhist conception of no-soul and nirvana.
Precludes additional credit for RELI 2308.
Lecture three hours a week.

RELI 2723 [0.5 credit]
Greek Religion
A study of religion in ancient Greece.
Also listed as CLCV 2103.
Precludes additional credit for CLCV 2102, RELI 2734, RELI 2102.
Lecture three hours a week.
RELI 2736 [0.5 credit]
Religion and Society
Cross-cultural survey of religious institutions, focusing on theories and methodologies in the study of religion. Topics may include myth, totemism, cults, ritual, belief systems, altered states of consciousness, new religious and/or new age movements and the relationship of religion with other social institutions and processes.
Includes: Experiential Learning Activity
Also listed as ANTH 2550.
Lectures and workshop three hours a week.

RELI 2737 [0.5 credit]
Roman Religion
A study of religion in ancient Rome.
Also listed as CLCV 2104.
Precludes additional credit for CLCV 2102 and RELI 2734 and RELI 2102.
Lecture three hours a week.

RELI 2738 [0.5 credit]
Philosophy of Religion
A study of philosophical issues arising from religion. Topics may include: arguments for and against the existence of God, religious experience, death and the afterlife, miracles, God and evil, the relationship between religion and science, and the relationship between religion and ethics.
Also listed as PHIL 2601.
Prerequisite(s): a course in philosophy or second-year standing.
Lecture three hours a week.

RELI 2741 [0.5 credit]
Big Questions in Religious Studies
In this Inquiry course, students will be introduced to a specific topic in Religious Studies (e.g., ritual, narrative, space) and develop a research project related to it. Focus on fostering intellectual curiosity and developing practical skills of reading, writing and research fundamentals.
Precludes additional credit for RELI 2002 (no longer offered), RELI 1205 (no longer offered), RELI 1402 (no longer offered), and RELI 1730 (no longer offered).
Seminar three hours per week.

RELI 2750 [0.5 credit]
Sikhism
An examination of the basic beliefs, practices, and social structures of the Sikh tradition as reflected in Sikh scriptures, history and philosophical schools.
Lecture three hours a week.

RELI 2800 [0.5 credit]
Indigenous Traditions
This course illuminates a recent category of “World Religions” by examining cases from all five continents, as well as in diaspora (e.g., Brazilian Candomblé, Roma/Sinti religion). Considerations include the study of minority religions, religion in oral cultures, myth & ritual studies, colonialism, globalization.
Precludes additional credit for RELI 1720 (no longer offered).
Lecture three hours per week.

RELI 2810 [0.5 credit]
Special Topics in Religion and Popular Culture
Examination of interactions between religion and popular culture in the form of music, film, video games, literature, and other media. Topic and focus will vary year to year; please check departmental website for information. May be repeated for credit when the topic changes.
Includes: Experiential Learning Activity
Lecture three hours per week.

RELI 2840 [0.5 credit]
Topics in Religion
Content of this course may vary from year to year. Please check departmental website for information on the topic.
Precludes additional credit for repeated topics.
Lecture three hours a week.

RELI 3000 [0.5 credit]
Religion and Public Life
This course examines some aspect of the intersection between religion(s) and public life, broadly construed, including social, economic, political, institutional aspects, either in the contemporary world or focused on a particular historical period.
Seminar three hours per week.

RELI 3010 [1.0 credit]
Advanced Language Tutorial
Advanced study of the language required for studying a religious tradition.
Precludes additional credit for RELI 3902 (no longer offered).
Prerequisite(s): RELI 2902 (no longer offered) or RELI 2010 or permission of the department.
Tutorial two hours a week.
RELI 3101 [0.5 credit]
Special Topics in Religions and the Body
Discussion of the embodiment of religious ideas in life, law, and practice, for example in food consumption, gender ideologies, sexuality, adornment, and death rituals. Topic will vary year to year; please check departmental website for information. May be repeated for credit when the topic changes.
Precludes additional credit for RELI 3130 (no longer offered), RELI 3131 (no longer offered), RELI 3331 (no longer offered), RELI 3734 (no longer offered).
Lecture three hours a week.

RELI 3140 [0.5 credit]
Holocaust Encounters
An examination of the experiences of different Jewish communities before, during, and after the Holocaust. Issues to be discussed include anti-Semitism, relations with non-Jewish neighbours, perpetrator motivation, local collaboration, resistance, postwar trials and memory. Also listed as HIST 3714.
Prerequisite(s): third-year standing or permission of the department.
Lecture three hours a week.

RELI 3220 [0.5 credit]
Reformation Europe
A history of the Protestant and Catholic Reformations of the sixteenth century, with emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era.
Also listed as HIST 3708.
Precludes additional credit for RELI 3708 (no longer offered).
Prerequisite(s): 0.5 credit at the 2000-level in HIST or third-year standing.
Lecture three hours a week.

RELI 3230 [0.5 credit]
Jesus of Nazareth
A study of the historical records of the life of Jesus, the methods used to interpret them, and the resulting images of Jesus.
Precludes additional credit for RELI 2205, RELI 3208 and RELI 3105.
Prerequisite(s): RELI 2207 or RELI 2220 or permission of the department.
Lectures three hours a week.

RELI 3231 [0.5 credit]
Paul of Tarsus
The social, religious, and historical context of Paul, the communities he founded, and the letters he wrote to them. Precludes additional credit for RELI 3300 and RELI 3106.
Prerequisite(s): RELI 2207 or RELI 2220 or permission of the department.
Lecture three hours a week.

RELI 3232 [0.5 credit]
Christian Discipline
An historical survey of key Christian thought and practices at the individual and collective level. Topics may include self-discipline, body discipline, monastic discipline, church discipline and social discipline. Precludes additional credit for RELI 3302 Section "A" taught in 2007-2008.
Prerequisite(s): third-year standing or permission of the department.

RELI 3250 [0.5 credit]
Evangelical Christianity in Social-Historical Perspective
The development of some protestant Christianities in relation to material factors, such as colonialism, industrial or consumer capitalism, imperialism, and in relation to major ideological trends, such as nationalism, economic or political liberalism and atheism.
Lecture three hours a week.

RELI 3301 [0.5 credit]
Music and Religion
An examination of the integral role music plays in religion and sacred ritual in different world cultures and religions. Through various case studies, the course broadly considers how sacred soundscapes shape people's worldviews, identities, and experiences within and outside of their communities.
Also listed as MUSI 3301.
Prerequisite(s): second-year standing.
Seminars three hours a week.

RELI 3330 [0.5 credit]
Sufism
An introduction to the main practical and theoretical dimensions of Islam's mystical tradition as seen through the life and work of its key representatives.
Prerequisite(s): RELI 2710 or RELI 2713 or permission of the department.
Lecture three hours a week.

RELI 3340 [0.5 credit]
The Life and Image of Muhammad
Overview of the life and teaching of the Prophet Muhammad, and the most salient motifs and features of Muslim devotion to him.
Precludes additional credit for RELI 2340.
Prerequisite(s): RELI 1710 or RELI 2310 or permission of the department.
Lecture three hours a week.

RELI 3360 [0.5 credit]
Special Topics in Islamic Texts & Narratives
A focus on post-Qur'anic Islamic literature and interpretive traditions (e.g. tafsir, hadith); texts and topics will vary from year to year; please check departmental website for information. May be repeated for credit when the topic changes.
Prerequisite(s): RELI 2310 or RELI 2330.
Lecture three hours per week.
RELI 3420 [0.5 credit]
Early Buddhism
The development of early Buddhist philosophy, psychology and practice with emphasis on the Pali Canon and its commentators.
Precludes additional credit for RELI 3215.
Prerequisite(s): RELI 2106 or RELI 2410 or permission of the department.
Lecture three hours a week.

RELI 3422 [0.5 credit]
Buddhism Beyond India
The rise of the Mahayana and the dissemination and development of Buddhist thought and practice outside of India.
Precludes additional credit for RELI 3217.
Prerequisite(s): RELI 2106 or RELI 2410 or permission of the department.
Lecture three hours a week.

RELI 3520 [0.5 credit]
Early Hinduism
Precludes additional credit for RELI 3015.
Lecture three hours a week.

RELI 3522 [0.5 credit]
Modern Hinduism
A survey of major developments in Hinduism since the period of colonial British rule. The development of “reform” Hinduism in the 18th and 19th centuries, and the emergence of Hindu nationalist movements in the 20th century.
Precludes additional credit for RELI 3007.
Lecture three hours a week.

RELI 3722 [0.5 credit]
Religion and Violence
A thematic course that examines putative cases of “religion and violence” from a range of world traditions, but also interrogates aspects of the “religion and violence” rubric itself.
Prerequisite(s): third-year standing or permission of the department.
Lecture three hours a week.

RELI 3732 [0.5 credit]
Studies in Greek Art
A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year. Also listed as ARTH 3102, CLCV 3306.
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.
Lecture three hours a week.

RELI 3733 [0.5 credit]
Studies in Roman Art
A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year. Also listed as ARTH 3105, CLCV 3307.
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.
Lecture three hours a week.

RELI 3741 [0.5 credit]
Classical Approaches to Religion
Examination of reflection on the nature and origin of religion from the ancient world up to key figures and founders of the discipline of the systematic, critical, and scientific study of religion in the nineteenth and early twentieth century.
Prerequisite(s): second-year standing.
Lecture three hours per week.

RELI 3840 [0.5 credit]
Topics in Religion
Content of this course may vary from year to year. Please check departmental website for information on the topic.
Precludes additional credit for repeated topics.
Lecture three hours a week.

RELI 3850 [0.5 credit]
Topics in the Study of Religion Abroad
This travel course explores religion in its historical and/or contemporary contexts in a particular geographic locale. Travel destinations, religious traditions studied, course content, and themes vary from year to year.
Prerequisite(s): third-year standing and 1.0 credit of study in the area related to the year’s topic religion, and permission of the department. Permission of the department is required to repeat this course.
Hours to be arranged. Costs associated with the course are borne by the student.

RELI 4741 [0.5 credit]
Contemporary Issues in the Study of Religion
This course engages with the real world implications of late twentieth and twenty-first century scholarship on religion with a focus on applied learning and developing employable skills that facilitate transition from academia to a career.
Includes: Experiential Learning Activity
Precludes additional credit for RELI 3301, RELI 4301, RELI 4740 (no longer offered).
Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.
Seminar three hours per week.

RELI 4840 [0.5 credit]
Tutorial
A tutorial on a topic in religious studies. Contents of the tutorial to be arranged with the supervising faculty member.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.
RELI 4850 [0.5 credit]
Seminar in the Study of Religion
Content of this course may vary from year to year. Please consult the departmental website for information on the topic.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.
Also offered at the graduate level, with different requirements, as RELI 5850, for which additional credit is precluded.
Seminar three hours a week.

RELI 4990 [1.0 credit]
Honours Research Essay
Honours research paper (approx. 40 pages) is due on the last day of winter term classes. Written proposal due to the Proposal Board on the first day of fall term classes. Please consult department document for full requirements and information.
Includes: Experiential Learning Activity
Precludes additional credit for RELI 4908 and RELI 4909.
Prerequisite(s): 10.0 CGPA and fourth-year standing in the Honours B.A. Religion program, or permission of the department.

Russian (Minor)
This section presents the requirements for programs in:
• Minor in Russian

Minor in Russian (4.0 credits)
Open to all undergraduate degree students.

Requirements:
1. 3.0 credits in RUSS
2. 1.0 credit in RUSS at the 3000-level or higher
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.
Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.
Students should note that they cannot go backward in a sequence of levels in language courses.

RUSS 1010 [0.5 credit]
First-Year Russian I
For students with no knowledge of Russian. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for RUSS 1110.
Four hours a week.

RUSS 1020 [0.5 credit]
First-Year Russian II
Continuation of first-year Russian. Oral skills, reading and writing. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 1010, or permission of the School.
Four hours a week.

RUSS 1110 [1.0 credit]
Intensive First-Year Russian
For students with no knowledge of Russian. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for RUSS 1010 and RUSS 1020.
Eight hours a week (one term).

RUSS 2010 [0.5 credit]
Second-Year Russian I
Further study of Russian to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 1020 or RUSS 1110, or permission of the School.
Four hours a week.
RUSS 2020 [0.5 credit]
Second-Year Russian II
Continuation of second-year Russian. Further study of Russian to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 2010, or permission of the School.
Four hours a week.

RUSS 3010 [0.5 credit]
Third-Year Russian I
Further study of Russian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 2020, or permission of the School.
Three hours a week.

RUSS 3015 [0.5 credit]
Russian for Heritage Speakers I
For students who have attained Russian language proficiency in informal settings or who completed elementary school in a Russian speaking country. The course builds literacy skills, formalizes grammar awareness, and develops writing and reading language skills in a formal academic setting.
Precludes additional credit for all 1000 through 3000 level Russian courses.
Prerequisite(s): Permission of the School.
Online.

RUSS 3020 [0.5 credit]
Third-Year Russian II
Continuation of third-year Russian. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 3010, or permission of the School.
Three hours a week.

RUSS 3025 [0.5 credit]
Russian for Heritage Speakers II
Further study of Russian to enhance students' literacy skills and formalize grammar awareness in a formal academic setting. Emphasis on the use of formal and academic language in oral and written form; further development of writing and reading skills.
Precludes additional credit for all 1000 through 3000 level Russian courses.
Prerequisite(s): RUSS 3015 or permission of the School.
Online.

RUSS 4010 [0.5 credit]
Fourth-Year Russian I
Advanced spoken and written Russian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 3020, or permission of the School.
Three hours a week.

RUSS 4020 [0.5 credit]
Fourth-Year Russian II
Continuation of fourth-year Russian. Advanced spoken and written Russian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 4010, or permission of the School.
Three hours a week.

RUSS 4115 [0.5 credit]
Russian for Social Studies
Russian language skills for translation of modern history and social science texts from Russian into English, with an emphasis on syntax. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for Russian translation offered under EURR 4901.
Prerequisite(s): permission of the School. Not open to students with native-like Russian proficiency.
Three hours a week.

RUSS 4120 [0.5 credit]
Russian for Research
Russian language skills for conducting research in modern history and social sciences, with an emphasis on practice and theory of translation from Russian into English. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for Russian translation offered under EURR 4902.
Prerequisite(s): grade of C in RUSS 4115, or permission of the School. Not open to students with native-like Russian proficiency.
Three hours a week.

RUSS 4900 [1.0 credit]
Independent Study
Research in a topic in Russian language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Russian, grade of C or higher in RUSS 3020 or equivalent, or permission of the School.
RUSS 4901 [0.5 credit]
Independent Study
Research in a topic in Russian language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Russian, grade of C or higher in RUSS 3020, or equivalent, or permission of the School.

Sexuality Studies (Minor)
This section presents the requirements for programs in:
• Minor in Sexuality Studies

Program Requirements
Minor in Sexuality Studies (4.0 credits)
This minor is available to all undergraduate degree students.

Requirements
1. 1.0 credit from:
   - FYSM 1402 [1.0] Issues in Women's and Gender Studies
   - WGST 1808 [1.0] Introduction to Feminist Social Transformation
2. 0.5 credit in:
   - SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
3. 1.0 credits in SXST or Approved Sexuality Studies Electives at the 2000-level or higher.
4. 1.5 credits in SXST or Approved Sexuality Studies Electives at the 3000-level or higher.
5. The remaining requirements of the major discipline(s) and degree must be satisfied

Total Credits 4.0

Notes:
1. Other courses may be substituted for the credits specified in items three and four, when material on sexuality is central to the course. Such substitutions must be individually approved by the Pauline Jewett Institute of Women’s and Gender Studies. Students are encouraged to consult course descriptions of Special Topics courses.

Approved Sexuality Studies Electives
Note: access to these courses is not guaranteed, and may depend on space availability and the satisfaction of other requirements such as course prerequisites.

Anthropology
- ANTH 2040 [0.5] Anthropology and Gender
- ANTH 2670 [0.5] Ethnography of Brazil
- ANTH 4780 [0.5] Anthropology of Personhood

Art History
- ARTH 3600 [0.5] Art Since 1945
- ARTH 4600 [0.5] Art, Architecture, and Gender

Canadian Studies
- CDNS 3400 [0.5] Feminists and Feminism in Canada

CDNS 3600 [0.5] Cultural Politics and Identities in Canada
Communication and Media Studies
- COMS 4604 [0.5] Media, Gender and Sexuality

Critical Race Studies
- CRST 2001 [0.5] Introduction to Critical Race Studies
- CRST 4001 [0.5] Advanced Critical Race Studies

Disability Studies
- DBST 2001 [0.5] Disabling Society
- DBST 3001 [0.5] Disability Studies: Policy and Activism
- DBST 3060 [0.5] Critical Disability Studies
- DBST 3304 [0.5] Disability and Childhood: Transnational Perspectives

English Language and Literature
- ENGL 2109 [0.5] Gender, Sexuality and Literature

Film Studies
- FILM 3301 [0.5] Topics in Cinema, Gender, and Sexuality

First Year Seminars
- FYSM 1600 [1.0] Contemporary Controversies in Canadian Society

History
- HIST 3106 [0.5] Social History of Sexuality
- HIST 3115 [0.5] Childhood and Youth in History
- HIST 3120 [0.5] History of the Body
- HIST 3406 [0.5] African-American Women
- HIST 3505 [0.5] Women in Canada
- HIST 3604 [0.5] Gender and Sexuality in Modern Europe
- HIST 3717 [0.5] Gender and Sexuality in Africa
- HIST 4505 [1.0] Seminar in Women's and Gender History

Human Rights
- HUMR 1001 [1.0] Introduction to Human Rights
- HUMR 2301 [0.5] Human Rights and Sexuality
- HUMR 4302 [0.5] Transgender Human Rights

Law
- LAWS 3001 [0.5] Women and the Legal Process
- LAWS 3503 [0.5] Equality and Discrimination
- LAWS 3804 [0.5] Law of the Family
- LAWS 4001 [0.5] Law, Family and Gender
- LAWS 4002 [0.5] Feminist Theories of Law
- LAWS 5302 [0.5] Feminism, Law and Social Transformation
- LAWS 5008/SOCI 5 Consuming Passions: The Regulation of Consumption, Appearance and Sexuality

Music
- MUSI 3302 [0.5] Music and Gender I
- MUSI 4303 [0.5] Music and Gender II

Philosophy
- PHIL 1500 [1.0] Contemporary Moral, Social and Religious Issues
- PHIL 2306 [0.5] Philosophy and Feminism

Political Science
- PSCI 2500 [0.5] Gender and Politics
<table>
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<tr>
<th>Code</th>
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<tr>
<td>PSCI 3109 [0.5]</td>
<td>The Politics of Law and Morality</td>
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<td>PSCI 3303 [0.5]</td>
<td>Feminist Political Theory</td>
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<td>PSCI 3502 [0.5]</td>
<td>Gender and Politics: Global South</td>
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<td>PSCI 4500 [0.5]</td>
<td>Gender and Globalization</td>
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<td>PSCI 4501 [0.5]</td>
<td>Politics of Identity in Europe and the Russian Area</td>
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<td>PSCI 4605 [0.5]</td>
<td>Gender in International Relations</td>
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<td>PSYC 3603 [0.5]</td>
<td>Psychology of Women</td>
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<td>SOWK 3804 [0.5]</td>
<td>Law of the Family</td>
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<td>SOWK 4206 [0.5]</td>
<td>Feminist Counselling</td>
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<td>SOCI 2043 [0.5]</td>
<td>Sociology of the Family</td>
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<td>SOCI 2045 [0.5]</td>
<td>Gender and Society</td>
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<td>SOCI 3040 [0.5]</td>
<td>Studies in the Sociology of Gender</td>
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<td>SOCI 3044 [0.5]</td>
<td>Sociology of Sex and Sexuality</td>
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<td>SOCI 3050 [0.5]</td>
<td>Studies in the Sociology of Health</td>
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<td>SOCI 3420 [0.5]</td>
<td>Studies in Gender and Criminal Justice</td>
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<td>SOCI 4040 [0.5]</td>
<td>Feminist Sociology of Intersectionality</td>
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<td>SOCI 4043 [0.5]</td>
<td>Families in the 21st Century</td>
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<td>WGST 2801 [0.5]</td>
<td>Activism, Feminisms, and Social Justice</td>
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<td>WGST 2803 [0.5]</td>
<td>Body Matters: The Politics of Bodies</td>
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<td>WGST 2811 [0.5]</td>
<td>Masculinities</td>
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<td>WGST 2812 [0.5]</td>
<td>Selected Topics in Women's and Gender Studies</td>
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<td>WGST 2814 [0.5]</td>
<td>Gender, Sexuality and Cultural Production</td>
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<td>WGST 3803 [0.5]</td>
<td>Feminisms and Transnationalism</td>
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<td>WGST 3806 [0.5]</td>
<td>Girldomds</td>
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<td>WGST 3807 [0.5]</td>
<td>Gendered Violence</td>
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<td>WGST 3812 [0.5]</td>
<td>Selected Topics in Women's and Gender Studies</td>
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<tr>
<td>WGST 4812 [0.5]</td>
<td>Selected Topics in Women's and Gender Studies</td>
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</tbody>
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**Regulations**

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

**Sexuality Studies (SXST) Courses**

**SXST 2101 [0.5 credit]**

**Sexuality Studies: A Critical Introduction**

While sexuality is often considered the most private and ‘natural’ of personal concerns, it is saturated with issues of social power, historical change, and public politics. This course offers a critical introduction to interdisciplinary studies of sexuality, focusing on history, theory, and cultural practice.

Includes: Experiential Learning Activity

Precludes additional credit for DIST 2101 (no longer offered).

Prerequisite(s): second-year standing or permission of the Institute.

Lectures and discussion groups three hours a week.

**SXST 2102 [0.5 credit]**

**Sexuality, Gender, and Security**

Historical and contemporary analysis of surveillance, security, and regulation of sexuality, race, class, and gender. Students will critically examine how ‘subversives’ were created through discourse and administrative logics such as policy and law.

Includes: Experiential Learning Activity

Also listed as HUMR 2102.

Prerequisite(s): second year standing.

Lectures and discussions three hours a week.

**SXST 3103 [0.5 credit]**

**Sexuality and Disability**

Exploration of ways that embodied categories of sex and gender, as well as desire are mediated through mainstream and alternative discourses of disability. Topics may include: crip theory, mental health issues, and LGBTQ sexualities.

Prerequisite(s): third-year standing and SXST 2101.

Lecture three hours a week.

**SXST 3104 [0.5 credit]**

**Transnational Sexualities**

Students analyze sex, gender and sexuality as power relations within, and between nation-states comprising the Global North and South, as well as new knowledge created through national border crossings. Topics may include: Orientalism, colonialization, and diasporic identities.

Prerequisite(s): third-year standing and SXST 2101.

Lecture three hours a week.

**SXST 3106 [0.5 credit]**

**Queer(ing) Archives**

Examination of the archival turn in historical and theoretical perspective with an emphasis on sexuality, race, and gender as subjectivities in queer, trans, and colonial archives.

Also listed as HIST 3102.

Prerequisite(s): third-year standing.

Seminar three hours a week.
SXST 4101 [0.5 credit]
Interdisciplinary Studies of Sexuality
A study of selected issues in sexuality studies considered from an interdisciplinary perspective. The course may focus on any one, or combination of, sexuality studies in relation to history, theory, and/or cultural practice.
Includes: Experiential Learning Activity
Precludes additional credit for DIST 4101 (no longer offered).
Prerequisite(s): SXST 2101 and fourth-year standing.
Seminar three hours a week.

SXST 4102 [0.5 credit]
Queer Theory
A critical approach to gender and sexuality by engaging in key debates and texts in the field of queer theory and studies.
Prerequisite(s): SXST 2101 and fourth-year standing.
Also offered at the graduate level, with different requirements, as WGST 5102, for which additional credit is precluded.
Seminar three hours a week.

SXST 4103 [0.5 credit]
Politics of Kink
This seminar analyzes critically the existence and regulation of non-normative sexual attitudes, behaviours and practices. Topics may include: non-monogamy, sadomasochism, pornography.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SXST 4104 [0.5 credit]
Sexuality and Political Economy
An interdisciplinary and intersectional approach to issues in the area of Sexuality Studies focusing on socio-economic relations (e.g. class location, consumption) and the ways they mediate sex, gender, and sexual subject formation and governance. SXST 4101.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year standing.
Seminar three hours a week.

SXST 4105 [0.5 credit]
Queer Ecologies
Students engage with debates within sexuality studies and transgender studies regarding the interwoven relationships between gender, race, indigeneity, desire, bodies and ecological politics. Topics may include: climate change, gendered and sexualized landscapes, and speciesism.
Prerequisite(s): fourth-year standing or by permission of the department.
Seminar three hours a week.

SXST 4106 [0.5 credit]
Queer Aesthetics: Affect, Cultural Production, Sexuality
Critical examination of affective economies made in and through LGBTQ cultural production. Drawing from feminist, queer, trans and queer of colour critique, students will consider how queer affect, sentiment and emotions uniquely circulate in art and aesthetic objects.
Prerequisite(s): fourth-year standing or permission of the Institute.
Seminar three hours a week.

Social Work
This section presents the requirements for programs in:
  - Bachelor of Social Work B.S.W. Honours

Senate Policy on Social Work Professional Suitability
Students in the Bachelor of Social Work (Honours) are expected to conform to the Canadian Association of Social Workers (CASW) Code of Ethics and the Ontario College of Social Workers and Social Service Workers (OCSWSSW) Code of Ethics and Standards of Practice. Students who violate these codes of ethics may be required, in accordance with the Senate Policy on Social Work Professional Suitability, to withdraw from the program with either the status Continue in Alternate (CA) or the status Dismissed from Program (DP).

Program Requirements
Bachelor of Social Work
B.S.W. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 4.5 credits in:
   - SOWK 1001 [0.5] Introduction to Social Welfare
   - SOWK 1002 [0.5] Introduction to Social Work
   - SOWK 2001 [0.5] Structural Analysis and Social Work
   - SOWK 2005 [0.5] Values and Ethics for Social Work
   - SOWK 2100 [0.5] The Political Economy of the Social Welfare State
   - SOWK 2202 [0.5] Introduction to Social Work Practice with Individuals and Families
   - SOWK 2203 [0.5] Introduction to Social Work Practice with Groups and Communities
   - SOWK 3100 [0.5] Social Policy and Administration
   - SOWK 4000 [0.5] Social Work and Indigenous Peoples

2. 1.0 credit in:
   - SOWK 3001 [0.5] Introduction to Research Methods in Social Work
   - SOWK 3002 [0.5] Introduction to Statistical Analysis in Social Work

3. 2.0 credits from:
   - SOWK 3600 [2.0] Practicum I (Fall and Winter)
   - SOWK 3601 [2.0] Practicum I (Winter Term)
   - SOWK 3602 [2.0] Practicum I (Fall term)

4. 0.5 credit from:
   - SOWK 4001 [0.5] Advanced Social Work Practice with Individuals and Families
Students should consult with the School of Social Work when planning their programs and selecting courses.

Senate Policy on Social Work Professional Suitability

Students in the Bachelor of Social Work (Honours) are expected to conform to the Canadian Association of Social Workers (CASSW) Code of Ethics and the Ontario College of Social Workers and Social Service Workers (OCSWSSW) Code of Ethics and Standards of Practice. Students who violate these codes of ethics may be required, in accordance with the Senate Policy on Social Work Professional Suitability, to withdraw from the program with the status Continue in Alternate (CA) or the status Dismissed from Program (DP).

Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree
• B.S.W. (Honours)

Admission Requirements

First Year
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

Although it is not an admission requirement, a 4U course in English is strongly recommended. Preference will be given to applicants with human service work experience, which may be met by employment and/or volunteer experience. Applicants will be requested to complete a personal information document that will assist in the evaluation of their suitability for the program.

Advanced Standing
Students who meet the Faculty Honours continuation standards will be considered for transfer into the second year of the B.S.W. program when spaces are available. Students who have completed an undergraduate degree are normally admitted into the program with Third-year standing.
Articulation agreements between the School of Social Work at Carleton University and several community colleges have been negotiated to facilitate the application of their graduates in their human or social service worker programs to Carleton's Bachelor of Social Work. Agreements have been established with Algonquin College, Sir Sandford Fleming College and St. Lawrence College (Cornwall and Kingston). Contact the School for more details.

**Social Work (SOWK) Courses**

**SOWK 1001 [0.5 credit]**

*Introduction to Social Welfare*

Explores definitions of social welfare and the structure of the Canadian welfare state; evolution and devolution of the welfare state in Canada; social welfare and its relationship to social work, social change, and social justice.

Precludes additional credit for SOWK 1000 (no longer offered).

Lecture three hours a week.

**SOWK 1002 [0.5 credit]**

*Introduction to Social Work*

Introduction to the profession of social work; evolution of the social work profession in Canada; social work knowledge, values and skills. Explores professional and regulatory social work bodies and international linkages.

Precludes additional credit for SOWK 1000 (no longer offered).

Lectures three hours a week.

**SOWK 2001 [0.5 credit]**

*Structural Analysis and Social Work*

Evolution of structural social work, theories and critiques of structural social work and contemporary issues and challenges.

Precludes additional credit for SOWK 2000 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

**SOWK 2005 [0.5 credit]**

*Values and Ethics for Social Work*

Focuses on knowledge and skills for ethical decision-making in social work; understanding social work values and ethics, accountability and the professional use of self.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 2000 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

**SOWK 2100 [0.5 credit]**

*The Political Economy of the Social Welfare State*

Political economic theories as lenses for structural analysis of social problems and policies affecting social work practice in Canada.

Prerequisite(s): SOWK 1001 and SOWK 1002 or permission of the School of Social Work.

Lecture three hours a week.

**SOWK 2202 [0.5 credit]**

*Introduction to Social Work Practice with Individuals and Families*

Understand and develop skills required for working with individuals and families; active listening; use of self; engagement; rapport-building; interviewing and interventions; empathy; interpersonal and professional collaboration; supervision.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 3201 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

**SOWK 2203 [0.5 credit]**

*Introduction to Social Work Practice with Groups and Communities*

Introduces students to theory and practice skills for group work and community work; structural social work with groups and communities.

Precludes additional credit for SOWK 3200 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

**SOWK 2300 [0.5 credit]**

*Drugs in Society: Theory, Policy, Practice*

Examines extent and nature of alcohol, prescription and illicit drug use, theories of drug dependence, history of drug policy; contemporary drug strategies and treatment in Canada.

Precludes additional credit for SOWK 2003 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002.

Lecture three hours a week.

**SOWK 2301 [0.5 credit]**

*Working with Children and Youth*

Preventative and protective social work intervention with children and youth. Issues addressed include child neglect, abuse and violence in the context of family; organizational mandate and social political contexts. Programs and services for children and youth.

Precludes additional credit for SOWK 2201 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002.

Lecture three hours a week.
SOWK 3001 [0.5 credit]
Introduction to Research Methods in Social Work
Research methods used in social work; research paradigms; quantitative and qualitative analysis in social work and social welfare; stages in conducting research. Precludes additional credit for SOWK 2501 (no longer offered) and SOWK 2500 (no longer offered).
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3002 [0.5 credit]
Introduction to Statistical Analysis in Social Work
Fundamentals of statistical analysis; descriptive and inferential statistics and their use in social work research. Statistical tests including Chi-Square, t-tests, correlations and simple linear regressions. Precludes additional credit for SOWK 2500 (no longer offered), SOWK 2502 (no longer offered).
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3100 [0.5 credit]
Social Policy and Administration
Understanding the welfare state and social policy in Canada; exploring issues in administration including program design and implementation; understanding and developing skills in policy-making and policy analysis. Canadian focus; recognition of the distinctiveness of social policy in Quebec.
Prerequisite(s): SOWK 2100 and third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3206 [0.5 credit]
Community Development and Social Change in an International Context
Introduction to theories, models and methods of community organizing as a strategy for social change in an international context.
Prerequisite(s): SOWK 1001 and SOWK 1002 or PAPM 2000; or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3207 [0.5 credit]
Human Rights Practice in Civil Society
Examines the advocacy role and capacity of organizations in civil society to increase popular participation in promoting and protecting human rights; includes transnational and national non-governmental organizations, grassroots movements, community organizations, and virtual or Internet-based organizations.
Prerequisite(s): SOWK 1001 and SOWK 1002 or PAPM 1000 or HUMR 1001 or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3400 [0.5 credit]
Special Topics in Social Work
Theory, policy or direct practice topics not covered in the regular course program. Choice of topics varies from year to year.
Prerequisite(s): SOWK 1001 and SOWK 1002 or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3600 [2.0 credits]
Practicum I (Fall and Winter)
Focus on integrating theory and practice in an approved community setting supervised by a field supervisor. Graded as Sat/Uns.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 3601, SOWK 3602.
Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
352 hours of field work over two terms and concurrent practicum seminars.

SOWK 3601 [2.0 credits]
Practicum I (Winter Term)
Focus on integrating theory and practice in an approved community setting supervised by a field supervisor; 352 field hours and compulsory field seminars. Graded as Sat/Uns.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 3600, SOWK 3602.
Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
352 hours of field work over one term and concurrent practicum seminars.

SOWK 3602 [2.0 credits]
Practicum I (Fall term)
Focus on integrating theory and practice in an approved community setting supervised by a field supervisor; 352 field hours and compulsory field seminars. Limited enrolment in this course subject to discretion of Field coordinator. Graded as Sat/Uns.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 3601, SOWK 3600.
Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
352 hours of field work over one term and concurrent practicum seminars.
SOWK 3804 [0.5 credit]
Law of the Family
Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes.
Also listed as LAWS 3804.
Prerequisite(s): LAWS 1000, LAWS 2201 and LAWS 2003.
Lectures three hours a week.

SOWK 4000 [0.5 credit]
Social Work and Indigenous Peoples
Social work in partnership with Indigenous peoples in Canada: impact of the past on current relationships; rebuilding through dialogue and respect; understanding Indigenous social work.
Precludes additional credit for SOWK 4200.
Prerequisite(s): third-year standing in Bachelor of Social Work.
Lecture three hours each week.

SOWK 4001 [0.5 credit]
Advanced Social Work Practice with Individuals and Families
Advanced theory, methods, techniques, and skills for direct social work practice with individuals and families; individual and family assessments, treatment planning, intervention skills, and evaluation.
Includes: Experiential Learning Activity
Prerequisite(s): SOWK 2202 and fourth-year standing in the Bachelor of Social Work.
Seminar three hours a week.

SOWK 4002 [0.5 credit]
Advanced Social Work Practice with Groups
Advanced theory, methods, techniques, and skills for social work with groups; knowledge of group work and various group formats; and social work interventions in group process.
Prerequisite(s): SOWK 2203 and fourth-year standing in the Bachelor of Social Work.
Seminar three hours a week.

SOWK 4003 [0.5 credit]
Advanced Social Work Practice with Communities
Advanced theory, methods, techniques and skills for engaging in community-based practice. Politics and challenges of social work community organizing and strategies and skills for community work.
Prerequisite(s): SOWK 2203 and fourth-year standing in the Bachelor of Social Work.
Seminar three hours a week.

SOWK 4004 [0.5 credit]
Social Policy Development and Practice
Social policy development processes in government and non-governmental agencies; refining skills in evaluating and critiquing processes of policy formation; role of lobbying and social activism.
Prerequisite(s): SOWK 3100 and fourth-year standing in the Bachelor of Social Work.
Seminar three hours a week.

SOWK 4102 [0.5 credit]
Indigenous Peoples and Social Policy
History of colonization, legacy of colonialism, Royal Proclamation, BNA Act, treaties, impact of residential schools; implications of government social policy for Indigenous peoples in Canada; importance of self-determination and Declaration on the Rights of Indigenous Peoples.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4103 [0.5 credit]
Practice and Policy in Immigration
History of immigration policies in Canada; direct practice with immigrants and refugees; diaspora, settlement and integration issues; immigrants and refugee women; intergenerational family relations; resources and community organizing.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4105 [0.5 credit]
Management of Non-Profit Organizations
Introduction to theories, models and methods of managing non-profit organizations; role, nature and values of the non-profit sector in a market society; practical knowledge of management in different types of non-profit organizations (e.g. cooperatives, voluntary associations, public advocacy and community service organizations).
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4204 [0.5 credit]
Social Work and Aging
Social perspectives on aging with focus on models of practice that contribute to the independence of elderly people. Social programs and policies, such as social insurance, social services, housing, public health and health care. Social, psychological and political issues related to independence in later life.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.
SOWK 4206 [0.5 credit]
Feminist Counselling
Examines theory and practice of feminist counselling, feminist counselling skills development.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4209 [0.5 credit]
Special Topics in Direct Social Work Practice
Theory and knowledge development of direct practice topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4210 [0.5 credit]
Special Topics in Direct Social Work Practice
Theory and knowledge development of direct practice topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4211 [0.5 credit]
Special Topics in Social Policy
Theory and knowledge development of social policy topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): SOWK 3100 and third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4212 [0.5 credit]
Special Topics in Social Policy
Theory and knowledge development of social policy topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): SOWK 3100 and third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4213 [0.5 credit]
Special Topics in Social Work
Theory and knowledge development of a combination of practice and policy topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4214 [0.5 credit]
Special Topics in Social Work
Theory and knowledge development of a combination of practice and policy topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4300 [0.5 credit]
Social Work and Persons with Disabilities
Social work theory and practice with persons with disabilities. Structural analysis of theory, models, policies and practices; disability rights; critical analysis of medical model and ableism.
Prerequisite(s): fourth-year standing in the Bachelor of Social Work.
Lecture three hours a week.

SOWK 4301 [0.5 credit]
Racialization and Social Work
Social work and racialization; racism and consequences; critical analysis of cultural formations, difference, and identities; critical examination of whiteness and privilege.
Prerequisite(s): fourth-year standing in the Bachelor of Social Work.
Lecture three hours a week.

SOWK 4302 [0.5 credit]
Poverty and Social Welfare Policy
Social work analysis of theories of poverty and economic inequality; labour force participation; poverty and wealth and income distribution in Canada and international comparisons; Canadian social policies and poverty.
Precludes additional credit for SOWK 4101 (no longer offered).
Prerequisite(s): fourth-year standing in the Bachelor of Social Work.
Lecture three hours a week.

SOWK 4303 [0.5 credit]
Gender and Sexuality
Social work and social, political, institutional and economic relations shaping everyday experiences of gender and sexuality and implications for contemporary social work.
Prerequisite(s): fourth-year standing in the Bachelor of Social Work.
Lecture three hours a week.

SOWK 4600 [2.0 credits]
Practicum II (Fall or Summer Terms)
Development, application, testing and integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or in social administration and policy. Graded Sat/Uns.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 4601, SOWK 4602.
Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
352 hours of fieldwork and concurrent practicum seminars.
SOWK 4601 [1.0 credit]
Practicum IIA
Development, application, testing, integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns. Part one of two part practicum taken consecutively with SOWK 4602. Includes: Experiential Learning Activity
Precludes additional credit for SOWK 4600.
Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major. 176 hours of fieldwork and concurrent practicum seminars.

SOWK 4602 [1.0 credit]
Practicum IIB
Development, application, testing, integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns. Part two of two part practicum taken consecutively with SOWK 4601. Includes: Experiential Learning Activity
Precludes additional credit for SOWK 4600.
Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, SOWK 4601 and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major. 176 hours of fieldwork and concurrent practicum seminars.

SOWK 4701 [0.5 credit]
Special topic in Criminal Justice and Social Policy
Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Law. Also listed as LAWS 4701.
Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4703 [0.5 credit]
Special topic in Criminal Justice and Social Policy
Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the School of Social Work. Also listed as LAWS 4703.
Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4708 [1.0 credit]
Honours Essay
Research essay under supervision of accredited faculty member. Project may be in the form of case study, historical study or other form that meets the approval of faculty advisor.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Social Work and permission of the School of Social Work.

Sociology
This section presents the requirements for programs in:

- Sociology B.A. Honours
- Sociology B.A. Combined Honours
- Sociology B.A.
- Stream in Social Justice
- Specialization in Global Inequalities and Social Change B.G.In.S. Honours
- Stream in Global Inequalities and Social Change B.G.In.S.
- Minor in Community Engagement
- Minor in Sociology

Program Requirements
Sociology
B.A. Honours (20.0 credits)
A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit from:
   - SOCI 1001 [0.5]
   - SOCI 1002 [0.5] Introduction to Sociology I
   - SOCI 1003 [1.0] Introduction to Sociological Perspectives

2. 0.5 credit in:
   - SOCI 2000 [0.5] Foundations of Sociological Inquiry

3. 0.5 credit from:
   - SOCI 2001 [0.5] Introduction to Qualitative Research Methods
   - SOCI 3000 [0.5] Descriptive Statistics in Social Research

4. 0.5 credit from:
   - SOCI 3002 [0.5] Inferential Statistics in Social Research
   - SOCI 3004 [0.5] Qualitative Research: Approaches and Strategies

5. 1.5 credits in:
   - SOCI 2005 [1.0] Histories of Sociological Thought
B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit from:
SOCI 1001 [0.5] Introduction to Sociology I
& SOCI 1002 [0.5] Introduction to Sociology II
SOCI 1003 [1.0] Introduction to Sociological Perspectives

2. 0.5 credit in:
SOCI 2000 [0.5] Foundations of Sociological Inquiry

3. 0.5 credit from:
SOCI 2001 [0.5] Introduction to Qualitative Research Methods
SOCI 3000 [0.5] Descriptive Statistics in Social Research

4. 1.0 credit in:
SOCI 2005 [1.0] Histories of Sociological Thought

5. 1.5 credits in SOCI at the 3000-level or above

6. 1.5 credits in SOCI at the 2000-level or above

B. Credits Not Included in the Major CGPA (11.0 credits)

10. 0.5 credit in:
ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology

11. 8.0 credits not in SOCI

12. 2.5 credits in free electives

Total Credits 20.0

Sociology

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Sociology Major CGPA (7.0 credits)

1. 1.0 credit from:
SOCI 1001 [0.5] Introduction to Sociology I
& SOCI 1002 [0.5] Introduction to Sociology II
SOCI 1003 [1.0] Introduction to Sociological Perspectives

2. 0.5 credit in:
SOCI 2000 [0.5] Foundations of Sociological Inquiry

3. 0.5 credit from:
SOCI 2001 [0.5] Introduction to Qualitative Research Methods
SOCI 3000 [0.5] Descriptive Statistics in Social Research

4. 1.0 credit in:
SOCI 2005 [1.0] Histories of Sociological Thought

5. 1.0 credit in SOCI at the 4000 level

6. 1.0 credit in SOCI and/or ANTH at the 4000 level

7. 1.0 credit in SOCI at the 2000 level or above

8. 1.0 credit in SOCI and/or ANTH at the 2000 level or above

B. Credits Not Included in the Major CGPA (9.0 credits)

11. 8.0 credits not in SOCI

12. 2.5 credits in free electives

Total Credits 20.0

Stream in Social Justice (2.0 credits)

The Stream in Social Justice is open to all students in Sociology Honours and Combined Honours programs.

Requirements:

1. 0.5 credit in:
SOCI 2170 [0.5] Foundations in Social Justice

2. 0.5 credit in:
SOCI 3170 [0.5] Social Justice in Action

3. 0.5 credit in:
SOCI 3430 [0.5] Studies in Collective Action and Social Movements

4. 0.5 credit in:
SOCI 4170 [0.5] Community-Engaged Sociology

Total Credits 2.0

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Inequalities and Social Change

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses
GINS 1000 [0.5] Global History
GINS 1010 [0.5] International Law and Politics
GINS 1020 [0.5] Ethnography, Globalization and Culture
GINS 2000 [0.5] Ethics and Globalization
GINS 2010 [0.5] Globalization and International Economic Issues
GINS 2020 [0.5] Global Literatures
GINS 3010 [0.5] Global and International Theory
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>GINS 1300</td>
<td>International Experience</td>
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<td>Requirement Preparation</td>
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<td><strong>3. 7.5 credits in:</strong> Global Inequalities and Social Change at the 2000-level</td>
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<td>a. 1.0 credit in: Foundations</td>
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<tr>
<td>SOCI 1001 [0.5]</td>
<td>Introduction to Sociology I</td>
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<tr>
<td>&amp; SOCI 1002 [0.5]</td>
<td>Introduction to Sociology II</td>
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<td>Or.</td>
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<tr>
<td>SOCI 1003 [1.0]</td>
<td>Introduction to Sociological Perspectives</td>
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<td>b. 1.5 credits in: Research Methods</td>
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<tr>
<td>SOCI 2000 [0.5]</td>
<td>Foundations of Sociological Inquiry</td>
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<tr>
<td>&amp; 1.0 credit from:</td>
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<td>SOCI 2001 [0.5]</td>
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<td>SOCI 3004 [0.5]</td>
<td>Qualitative Research: Approaches and Strategies</td>
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<td>c. 1.0 credit in: Theory</td>
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<tr>
<td>SOCI 2005 [1.0]</td>
<td>Histories of Sociological Thought</td>
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<td>d. 1.0 credit from: Global Inequalities and Social Change at the 2000-level</td>
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<td>SOCI 2010 [0.5]</td>
<td>Critical Approaches to Economic Inequality</td>
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<td>SOCI 2020 [0.5]</td>
<td>Race and Ethnicity</td>
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<td>SOCI 2030 [0.5]</td>
<td>Work, Industry and Occupations</td>
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<td>SOCI 2040 [0.5]</td>
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<td>SOCI 2705 [0.5]</td>
<td>Popular Culture in the Digital Age</td>
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<td>SOCI 3019 [0.5]</td>
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<td>SOCI 3020 [0.5]</td>
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<td>SOCI 3027 [0.5]</td>
<td>Globalization and Human Rights</td>
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<td>SOCI 3030 [0.5]</td>
<td>Studies in Work, Industry and Occupations: Authority and Expertise</td>
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<tr>
<td>SOCI 3035 [0.5]</td>
<td>Science, Culture and Society: Social Studies of Science</td>
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<td>SOCI 3038 [0.5]</td>
<td>Studies in Urban Sociology</td>
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<td>SOCI 3040 [0.5]</td>
<td>Studies in the Sociology of Gender</td>
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<td>SOCI 3044 [0.5]</td>
<td>Sociology of Sex and Sexuality</td>
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<td>SOCI 3045 [0.5]</td>
<td>Children and Childhood in a Globalized World</td>
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<td>SOCI 3160 [0.5]</td>
<td>Political Violence</td>
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<td>SOCI 3170 [0.5]</td>
<td>Social Justice in Action</td>
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<td>SOCI 3210 [0.5]</td>
<td>Selected Topics in Sociology</td>
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<td>SOCI 3220 [0.5]</td>
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<td>SOCI 3430 [0.5]</td>
<td>Studies in Collective Action and Social Movements</td>
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<td>SOCI 3570 [0.5]</td>
<td>Studies in Art, Culture and Society</td>
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<td>SOCI 3710 [0.5]</td>
<td>Introduction to Cultural Studies</td>
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<td>SOCI 3805 [0.5]</td>
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<td>Advanced Studies in Sociological Theory</td>
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<td>Advanced Studies in Qualitative Research</td>
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<td>SOCI 4009 [0.5]</td>
<td>Advanced Studies in Quantitative Research</td>
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<td>SOCI 4020 [0.5]</td>
<td>Advanced Studies in Race and Ethnicity</td>
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<td>SOCI 4039 [0.5]</td>
<td>Women in Contemporary Middle East Societies</td>
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<td>SOCI 4040 [0.5]</td>
<td>Feminist Sociology of Intersectionality</td>
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<td>War, Terrorism and State Terrorism</td>
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<td>SOCI 4730 [0.5]</td>
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<td>Tutorial in Sociology</td>
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<td>SOCI 4920 [0.5]</td>
<td>Tutorial in Sociology</td>
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<td><strong>B. Credits Not Included in the Major CGPA (8.0 credits)</strong></td>
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<td><strong>4. 8.0 credits in:</strong> Free Electives</td>
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<td><strong>C. Additional Requirements</strong></td>
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<td>5. The International Experience requirement must be met.</td>
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<td>6. The Language requirement must be met.</td>
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**Total Credits**: 20.0

**Stream in Global Inequalities and Social Change B.G.In.S. (15.0 credits)**

**A. Credits Included in the Major CGPA (8.0 credits)**

<table>
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<th>Course Code</th>
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<td>GINS 1000 [0.5]</td>
<td>Global History</td>
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<tr>
<td>GINS 1010 [0.5]</td>
<td>International Law and Politics</td>
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<tr>
<td>GINS 1020 [0.5]</td>
<td>Ethnography, Globalization and Culture</td>
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<td>GINS 2000 [0.5]</td>
<td>Ethics and Globalization</td>
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<tr>
<td>GINS 2010 [0.5]</td>
<td>Globalization and International Economic Issues</td>
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<tr>
<td>GINS 2020 [0.5]</td>
<td>Global Literatures</td>
</tr>
<tr>
<td>GINS 3010 [0.5]</td>
<td>Global and International Theory</td>
</tr>
<tr>
<td>GINS 3020 [0.5]</td>
<td>Places, Boundaries, Movements and Global Environmental Change</td>
</tr>
</tbody>
</table>

**B. 4.0 credits in:** the Stream | 4.0 |

| a. 1.0 credit in: Foundations | |

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964 The Academic Year (Graduate and Undergraduate Studies)
### Electives at the 2000 or 3000 level

1. **1.0 credit in: Global Inequalities and Social Change**
   - SOCI 3570
2. **1.0 credit in: Theory**
   - SOCI 3430
3. **1.0 credit in: Research Methods**
   - SOCI 2035
   - and 0.5 credit from:
     - SOCI 2001
4. **1.0 credit in: Global Inequalities and Social Change Electives at the 2000 or 3000 level**
   - SOCI 2010
   - Critical Approaches to Economic Inequality
   - SOCI 2020
   - Race and Ethnicity
   - SOCI 2030
   - Work, Industry and Occupations
   - SOCI 2035
   - Technology, Culture and Society
   - SOCI 2040
   - Food, Culture and Society
   - SOCI 2045
   - Gender and Society
   - SOCI 2060
   - Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
   - SOCI 2160
   - War and Society
   - SOCI 2170
   - Foundations in Social Justice
   - SOCI 2702
   - Power and Social Change
   - SOCI 2705
   - Popular Culture in the Digital Age
   - SOCI 2810
   - Selected Topics in Sociology
   - SOCI 2820
   - Selected Topics in Sociology
   - SOCI 3002
   - Inferential Statistics in Social Research
   - SOCI 3004
   - Qualitative Research: Approaches and Strategies
   - SOCI 3006
   - Thinking the Social: Theories and Approaches
   - SOCI 3010
   - Power, Oppression and Resistance
   - SOCI 3019
   - Sociology of International Migration
   - SOCI 3020
   - Studies in Race and Ethnicity
   - SOCI 3027
   - Globalization and Human Rights
   - SOCI 3030
   - Studies in Work, Industry and Occupations: Authority and Expertise
   - SOCI 3035
   - Science, Culture and Society: Social Studies of Science
   - SOCI 3038
   - Studies in Urban Sociology
   - SOCI 3040
   - Studies in the Sociology of Gender
   - SOCI 3044
   - Sociology of Sex and Sexuality
   - SOCI 3045
   - Children and Childhood in a Globalized World
   - SOCI 3160
   - Political Violence
   - SOCI 3170
   - Social Justice in Action
   - SOCI 3210
   - Selected Topics in Sociology
   - SOCI 3220
   - Selected Topics in Sociology
   - SOCI 3430
   - Studies in Collective Action and Social Movements
   - SOCI 3570
   - Studies in Art, Culture and Society

### B. Credits Not Included in the Major CGPA (7.0 credits)

1. **Free Electives**

### C. Additional Requirements

1. The Language requirement must be met.

### Total Credits

15.0

### Minor in Community Engagement (4.0 credits)

This minor is open to all undergraduate degree students in any program. Students in any Sociology or Anthropology major should select courses carefully if they wish to use courses from the major in their minor. Such students should always consult the department.

#### Requirements:

1. **0.5 credit from:**
   - ANTH 2180
   - Foundations in Community Engagement
   - SOCI 2180
   - Foundations in Community Engagement

2. **0.5 credit from:**
   - ANTH 4171
   - Community Engagement Capstone
   - SOCI 4171
   - Community Engagement Capstone

3. **1.0 credit from Engaging the Community courses:**
   - AFRI 3900
   - Placement
   - ANTH 4000
   - Field Placement in Anthropology
   - ANTH 4100
   - Ethnographic Field Course
   - ARTH 3701
   - Art and Architecture on Site
   - ARTH 4701
   - Art and Architecture on Site
   - CDNS 1101
   - Ottawa: Exploring National Institutions
   - CDNS 4800
   - Internship Practicum
   - CRCC 3901
   - Practicum in Criminology I
   - CRCC 3902
   - Practicum in Criminology II
   - DIGH 4005
   - Digital Humanities Practicum
   - ENST 4450
   - Community-Engaged Research
   - GEOG 3030
   - Regional Field Excursion
   - GEOG 4000
   - Field Studies
   - GEOG 4450
   - Community-Engaged Research
   - GINS 3100
   - Global and International Group Project
   - GINS 3200
   - Experiential Learning Abroad
   - GINS 3900
   - International Placement
   - GINS 3901
   - International Placement
   - GINS 3930
   - Carleton International Placement
   - GINS 3931
   - Carleton International Placement
   - HIST 3807
   - Practicum in History
   - HIST 3815
   - Group Practicum
   - HLTH 4909
   - Capstone Course – Field Placement and Research Project
   - HUMR 4905
   - Practicum Placement in Human Rights I
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5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits: 4.0

**Minor in Sociology (4.0 credits)**

Open to all undergraduate degree students in programs other than Sociology or the B.G.In.S. Stream/ Specialization in Global Inequalities and Social Change. Students in any Anthropology major should select courses carefully if they wish to use courses from the major in their minor Sociology. Such students should always consult the department.

**Requirements**

1. **1.0 credit from:**

   - SOCI 1001 [0.5] Introduction to Sociology I
   - SOCI 1002 [0.5] Introduction to Sociology II
   - SOCI 1003 [1.0] Introduction to Sociological Perspectives

2. **1.0 credit in:**

   - Methods: SOCI 2000 plus one of SOCI 2001 or SOCI 3000
   - or
   - Theory: SOCI 2005 [1.0]

3. **2.0 credits in SOCI at the 2000-level or above**

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits: 4.0

**Regulations**

**First Year Courses**

Students may receive credit for SOCI 1001 and SOCI 1002, or SOCI 1003. Only one of these credits will be included in the Major CGPA. The other will count against the total number of credits in sociology and/or anthropology.

**B.A. Regulations**

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).
First-Year Seminars
B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement
Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Com.M. are required to include 3.0 breadth credits, including 1.0 credit from each of three of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication
American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENV, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAEE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SRRE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits: students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any
specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

**Mention : Français**

Students registered in certain B.A. programs may earn the notation *Mention : Français* by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : Français* requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on Exchange or Letter of Permission.

**Co-operative Education**

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

**Undergraduate Co-operative Education Policy**

**Admission Requirements**

Students can apply to co-op in one of two ways: directly from high school or after beginning a degree program at Carleton.

If a student is admitted to co-op from high school, their grades will be reviewed two terms to one year prior to their first work term to ensure they continue to meet the academic requirements after their 1st or 2nd year of study. The time at which evaluation takes place depends on the program of study. Students will automatically be notified via their Carleton email account if they are permitted to continue.

Students not admitted to Carleton University with the co-op option on their degree can apply for admission via the co-operative education program website. To view application deadlines, visit carleton.ca/co-op.

Admission to the co-op option is based on the completion of 5.0 or more credits at Carleton University, the CGPA requirement for the students' academic program as well as any course prerequisites. The articulated CGPA for each program is the normal standard for assessment. Please see the specific degree program sections for the unique admission and continuation requirements for each academic program.

**Participation Requirements**

**COOP 1000**

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

**Communication with the Co-op Office**

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

**Employment**

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

**Registering in Co-op Courses**

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work
terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

**Work Term Assessment and Evaluation**

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account. Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

**Graduation with the Co-op Designation**

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

**Voluntary Withdrawal from the Co-op Option**

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

**Involuntary or Required Withdrawal from the Co-op Option**

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

**Standing and Appeals**

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

**International Students**

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

**B.A. Honours Sociology: Co-op Admission and Continuation Requirements**

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COO 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Sociology program;
2. Have a minimum overall CGPA of 7.0 and major CGPA of 8.0 in the first two years of academic study;
3. Successfully completed, by the start-date of the first work term, the required first-year courses, second-year courses, SOCI 2000 and SOCI 2001 or SOCI 3000

Students in B.A. Honours Sociology must successfully complete three (3) work terms to obtain the Co-op designation.

**Co-op Work Term Course:** SOCI 3999

**Work/Study Pattern:**

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**Legend**

- S: Study
- W: Work
- O: Optional
- * indicates recommended work study pattern
- ** indicates student finds own employer for this work-term.
Admissions Information

Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

First Year
For B.A. and B.A. (Honours)
The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or anglais). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

Advanced Standing

B.A. and B.A. (Honours) Program
Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option
Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law (Business Law), Law (Law, Policy and Government), Political Science, Psychology, Sociology.

Applicants must:
1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Sociology (SOCI) Courses

SOCI 1001 [0.5 credit]
Introduction to Sociology I
Introduction to the discipline of sociology; theory, methods, history; key thinkers, concepts and disciplinary subfields in sociology; issues and problems in contemporary society. Emphasis on the everyday world of lived experience and social relations. Topics may include class, gender, sexuality, racialization, culture, social interaction.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 1003.
Lectures/discussion groups three hours a week.

SOCI 1002 [0.5 credit]
Introduction to Sociology II
This course will further explore and expand upon the key thinkers, concepts and disciplinary subfields in sociology. The focus of analysis will shift from the everyday world to social institutions and structural processes. Topics may include globalization, education, media, health, social movements, colonialism, urbanization.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 1003, SOCI 1005.
Prerequisite(s): SOCI 1001.
Lectures/discussion groups three hours a week.

SOCI 1003 [1.0 credit]
Introduction to Sociological Perspectives
Introduction to the discipline of sociology; theory, methods and history; key thinkers, concepts and disciplinary subfields in sociology; issues and problems in contemporary society.
Precludes additional credit for SOCI 1000, SOCI 1001 and SOCI 1002.
Lectures/discussion groups three hours a week.
SOCI 1005 [0.5 credit]
Sociology for Bachelor of Commerce Students
The origins of sociology, why sociology matters, and how it is practiced. Concepts such as class, race, ethnicity, gender, sexual orientation, work, organization, and social movements help students develop their sociological ‘eye’ for thinking critically about society and their place within it. Precludes additional credit for SOCI 1002.
Prerequisite(s): restricted to B.Com. students. Lecture three hours a week.

SOCI 2000 [0.5 credit]
Foundations of Sociological Inquiry
Introduction to sociological inquiry through the study of sociological approaches to knowledge, the relationship of theory to methods, introduction to different methodological traditions including their epistemological foundations, value and limitations. Students will acquire foundational academic skills.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours per week.

SOCI 2001 [0.5 credit]
Introduction to Qualitative Research Methods
Introduction to theory and practice of qualitative research methods involving human participants: research design, ethics, data analysis, data generation methods. Methods may include: qualitative interviewing, ethnography, oral history, focus groups, observation. Additional topics may include: historical development/debates in qualitative research/key historical studies.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 2003 (no longer offered).
Prerequisite(s): SOCI 2000.
Lectures/discussion groups or labs three hours a week.

SOCI 2005 [1.0 credit]
Histories of Sociological Thought
Traces theoretical traditions in sociological thought, situating traditions within historical, social and intellectual contexts. At least four of the following will be covered: orientalism, imperialism, colonialism; capitalism, social organization, rationalization; subject formation, identity; self and the everyday; work and leisure; and, social change and revolution.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2010 [0.5 credit]
Critical Approaches to Economic Inequality
Theoretical and empirical examination of economic inequalities in Canada. Topics may include the experience of economic marginalization, how economic inequality is reproduced, how economic inequalities intersect with other forces, such as gender and racialized inequality, and struggles to transform the economic organisation of society.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 3405 (no longer offered) and SOCI 3407 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2020 [0.5 credit]
Race and Ethnicity
Introduction to some of the recent theoretical literature and research on the issues of race, racism and ethnicity. Concepts, controversies and definitions dealing with race and ethnicity from the Canadian context and internationally.
Also listed as ANTH 2020.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2030 [0.5 credit]
Work, Industry and Occupations
An analysis of work practices and settings in societies. Topics of interest include the development of industrial and postindustrial societies; the experience of work, the structuring of work in organizations and in the society; conflict, resistance and labour relations, and the impact of new technologies.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2035 [0.5 credit]
Technology, Culture and Society
Introduction to the principal theories and methods used by Science and Technology Studies (STS) scholars to examine the social and cultural shaping of technology. The substantive focus of the course is on the design, development, production, diffusion, consumption and use of technology.
Also listed as DIGH 2035.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.
SOCI 2040 [0.5 credit]
Food, Culture and Society
The sociological analysis of food and eating. The relationship between food and identity; the development of social movements organized around food; and more generally, on practices relating to the production, preparation, and consumption of food.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2043 [0.5 credit]
Sociology of the Family
How do we conceptualize the family? How has family changed over history? What are the diverse realities of families today? This course examines different family forms, relations and dynamics, emphasizing the relationship between family and larger social forces, such as gender, immigration or class.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2045 [0.5 credit]
Gender and Society
How gender and gender relations play out in everyday lives, and how people resist, reproduce, or reinforce gender norms. Considers how gender shapes experiences of family, school, work, media, relationships, bodies, violence, etc. Canadian and global cases are examined.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 2407 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2050 [0.5 credit]
Sociology of Health
Critical approaches to understanding health, illness and healthcare and how social, cultural, political and economic factors affect our health, our experiences with illness, and our encounters with healthcare systems.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2060 [0.5 credit]
Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
Drawing on anthropological and sociological approaches, students will explore girls’ lives in diverse cultural, political, economic, and social contexts. Topics may include: movement and migration, education, media, imaging and humanitarianism, consumerism, agency and activism, health, and violence.
Also listed as ANTH 2060.
Prerequisite(s): second year standing or permission of the instructor.
Two hour lecture plus one hour tutorial per week.

SOCI 2080 [0.5 credit]
Humans/Animals: the More-than-Human in Social Research
Examination of relationships between humans and animals in the sociological and broader social studies canon, including: multispecies ethnography, the role of the ‘more than human’ in Indigenous legal orders, posthumanist and STS theory, relationships between humans and animals and other non-human entities in the Anthropocene.
Also listed as ANTH 2080.
Lecture/discussion groups three hours per week.

SOCI 2150 [0.5 credit]
Social Psychology
Theoretical and empirical consideration of society and the individual. Topics include the public realm, situations, roles and interpersonal relations. Beliefs, attitudes, interests and opinions, leadership and decision making, conformity, coercion and compromise may be also examined.
Precludes additional credit for PSYC 2100.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2160 [0.5 credit]
War and Society
Sociological theory and research on large-scale conflict. How society and culture shape warfare through processes of socialization, bureaucratization, and ideological representation. Social impacts of war in terms of gender, race and ethnicity, class relations, and cultural values.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2170 [0.5 credit]
Foundations in Social Justice
Introduction to the study of social justice and the theorization of social justice sociology. Critical examination of resistance to oppression, social movements and solidarity both in Canada and transnationally. Exploration of the relationship between the university and community-based action.
Includes: Experiential Learning Activity
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.
SOCI 2180 [0.5 credit]
Foundations in Community Engagement
Study of theoretical debates and practical applications relating to community engagement with a focus on Canadian examples. Exploration of the contested and complex meanings of community engagement in and between diverse communities, public institutions, non-profit sector and private enterprise with an emphasis on social justice.
Includes: Experiential Learning Activity
Also listed as ANTH 2180.
Prerequisite(s): Second year standing or permission of instructor.
Lecture, discussion and project work three hours a week.

SOCI 2445 [0.5 credit]
Sociology of Deviance
The construction of deviant behaviour and the consequences of such construction for both deviant and conforming persons. Emphasis upon deviance as a normal and necessary result of the socio-cultural processes resulting from, and affecting the activities of a viable society.
Precludes additional credit for SOCI 2505 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2450 [0.5 credit]
Crime and Society
Social reactions to crime, criminalization processes, and the criminal justice system, and their intersection with power relations and social inequalities.
Precludes additional credit for SOCI 2701.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2702 [0.5 credit]
Power and Social Change
An investigation of power and culture, with a focus on how ordinary people contribute to social change. Topics may include activism, leisure, consumption, identity, fashion, sexuality, tourism, health, pollution and work.
Includes: Experiential Learning Activity
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2705 [0.5 credit]
Popular Culture in the Digital Age
An examination of various approaches to analyzing digital media and their role in the production and consumption of contemporary cultural forms and practices. Students will reflect upon their use of digital media and the influence they have on their lives and popular culture, more generally.
Also listed as DIGH 2705.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2810 [0.5 credit]
Selected Topics in Sociology
Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2820 [0.5 credit]
Selected Topics in Sociology
Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2910 [0.5 credit]
Course-Related Tutorials in Sociology
Consult the Department for information.

SOCI 2920 [0.5 credit]
Course-Related Tutorials in Sociology
Consult the Department for information.

SOCI 3000 [0.5 credit]
Descriptive Statistics in Social Research
The conceptual foundations of descriptive statistics and applications of these statistics using software (SPSS or Stata) to analyze and interpret social science data. Topics include frequency distributions, graphs, measures of central tendency and dispersion, measures of association, bivariate regression, and introduction to multivariate statistics.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 2002 (no longer offered).
Prerequisite(s): SOCI 2000 and third-year standing.
Lectures/computer labs three hours a week.

SOCI 3002 [0.5 credit]
Inferential Statistics in Social Research
Inferential statistics and hypotheses testing used in social science research. Topics may include relationship between samples and population, methods of sample selection, central limit theorem, confidence levels and confidence intervals, overview of selected hypothesis tests, multivariate data analysis and multiple regression analysis.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 3003 (no longer offered).
Prerequisite(s): SOCI 3000 or CRCJ 3001 and third-year standing.
Lectures/computer labs three hours a week.
SO CI 3004 [0.5 credit]  
Qualitative Research: Approaches and Strategies  
Specialized examination of select strategies or approaches to qualitative research. Topics may include: advanced application of research design involving human participants; historical research methods; textual/document-based research; visual sociologies; critical methodologies (such as feminist or decolonizing methods). Includes: Experiential Learning Activity  
Prerequisite(s): SOCI 2001 and third-year standing.  
Lectures/computer labs three hours per week.

SO CI 3006 [0.5 credit]  
Thinking the Social: Theories and Approaches  
Examination of a select sociological tradition or thinker, or theoretically intensive study of a sociological area. Consult the department for topics offered.  
Precludes additional credit for SOCI 3005 (no longer offered), SOCI 4006 (no longer offered).  
Prerequisite(s): SOCI 2005 and third-year standing.  
Lectures/discussion groups three hours a week.

SO CI 3010 [0.5 credit]  
Power, Oppression and Resistance  
What makes inequalities so persistent? Theoretical and empirical examination of the intersection of social inequalities in Canada and globally, including class, gender, race and ethnicity and age; study of resistance to structures and cultures of inequalities.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SO CI 3019 [0.5 credit]  
Sociology of International Migration  
This course draws from global and interdisciplinary theoretical perspectives to examine primarily though not exclusively Canadian immigration policy and the socio-historical forces shaping policy, migration patterns, permanent, temporary and circular migration, the experiences of immigrants, refugees and migrants; and diasporic and transnational communities and identities.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SO CI 3020 [0.5 credit]  
Studies in Race and Ethnicity  
Race, racism and ethnicity in Canada and internationally. Critical perspectives on race and ethnicity, which intersect with other social relations. Racism, Eurocentrism, Orientalism, nationalism, colonialism, international migration, citizenship, and diasporic cultures.  
Also listed as ANTH 3020.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SO CI 3027 [0.5 credit]  
Globalization and Human Rights  
Examination of the various dimensions and meanings of globalization and its relationship with human rights, with emphasis on the implications of the emerging global economy for economic, social, political and cultural rights. Also listed as ANTH 3027, PSCI 3802.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SO CI 3030 [0.5 credit]  
Studies in Work, Industry and Occupations: Authority and Expertise  
The nature and place of expert knowledge in societies. The development of the practices and organization of the professions and their relation to social stratification, the state, patriarchy and gender; the systematic development of knowledge in societies.  
Includes: Experiential Learning Activity  
Precludes additional credit for SOCI 2508 (no longer offered).  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SO CI 3035 [0.5 credit]  
Science, Culture and Society: Social Studies of Science  
Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.  
Also listed as ANTH 3035.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SO CI 3038 [0.5 credit]  
Studies in Urban Sociology  
Issues related to people and the urban environment, including the historical process of urbanization, rural-urban transition, the diffusion of urban values and life styles, contemporary urban problems such as urban renewal, pollution and the pressures of the urban environment on social institutions.  
Precludes additional credit for SOCI 2504 (no longer offered).  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.
SOCI 3040 [0.5 credit]  
Studies in the Sociology of Gender  
Sociological and feminist perspectives; applied understandings of gender, gender relations; women's and men's lives in contemporary Canadian society and in historical and cross-cultural terms. Multiple intersections between gender, race, ethnicity, class and sexuality.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3044 [0.5 credit]  
Sociology of Sex and Sexuality  
Key concepts of sex, sexuality, gender, eroticism and pleasure. The history of sex and sexuality. The regulation of sexual relations and practices. Social movements relating to sexuality, gender identities and sexual equality.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3045 [0.5 credit]  
Children and Childhood in a Globalized World  
A socio-historical and cross-cultural exploration of constructions, deconstructions, and the experience of childhood in Canada and internationally. Compulsory schooling, child labour, protection and regulation in law, the commodification and equalization of childhood, children's social movements, and the emergence of children's rights discourses.  
Also listed as ANTH 3045.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3050 [0.5 credit]  
Studies in the Sociology of Health  
Current theory and research on health, disease and social responses to health issues. Topics include population differences incidence and prevalence of morbidity and mortality, access to care and government health policy. Focus upon cultural definitions of health and their consequences for health promotion practices.  
Precludes additional credit for SOCI 3705.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3055 [0.5 credit]  
Studies in Addictions  
Survey of alcohol and other drug use in cross-cultural and sub-group perspectives. Relationships between culture, social structure and patterns of use of psychoactive substances. Topics may include: substance use and the life cycle; gender and psychoactive substances; problem and non-problem use.  
Precludes additional credit for SOCI 3001.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3056 [0.5 credit]  
Women and Health  
Women's health issues and how they relate to social, political and economic factors. The intersection of gender, ethnicity, class, sexual orientation and able-bodiedness with women's health.  
Includes: Experiential Learning Activity  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Seminar 3 hours per week.

SOCI 3150 [0.5 credit]  
Sociology of Rightwing Populism  
This course will make sense of Trumpism and other rightwing populisms by interrogating their sociological backgrounds and histories. Students will learn to recognize the systems and structures that make populist leaders possible, and how trends in North America relate to far-right movements elsewhere.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.
SOCI 3160 [0.5 credit]  
**Political Violence**  
Sociological examination of political violence. Theoretical analysis of violence as social action that is historically situated and shaped by cultural and economic forces; the relationship between political violence and identity, nation/nationalism, modernity and globalisation.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lectures three hours a week.

SOCI 3170 [0.5 credit]  
**Social Justice in Action**  
Current debates in social justice theory and practice. The course includes substantial engagement with community actors, including activists and advocates as guest speakers. Students will be exposed to social justice principles applied in the community through a variety of approaches.  
Includes: Experiential Learning Activity  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3210 [0.5 credit]  
**Selected Topics in Sociology**  
Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3220 [0.5 credit]  
**Selected Topics in Sociology**  
Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3300 [0.5 credit]  
**Studies in the Sociology of Education**  
Critical analysis of selected work in educational sociology. Topics may include sociological theories of education, school ethnography, contemporary educational policy and practice. Note: Topic will vary in keeping with the interests of students and instructor.  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3410 [0.5 credit]  
**Studies in Criminal Justice**  
Developments in criminal justice are examined in the context of broader social issues. Particular emphasis will be placed on contemporary developments in criminal justice institutions, programs and practices.  
Includes: Experiential Learning Activity  
Precludes additional credit for SOCI 3808 (no longer offered).  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3420 [0.5 credit]  
**Studies in Gender and Criminal Justice**  
An overview of current issues related to women as both perpetrators and victims of crime and the Canadian criminal justice system's response to them. Topics may include woman abuse, sexual assault, and federally sentenced women.  
Precludes additional credit for SOCI 3201 (no longer offered).  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3430 [0.5 credit]  
**Studies in Collective Action and Social Movements**  
Precludes additional credit for SOCI 3408 (no longer offered).  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.

SOCI 3450 [0.5 credit]  
**Studies in Law Enforcement**  
A comparative examination of contemporary law enforcement. Topics may include public versus private policing, centralized versus decentralized policing, and transnational policing.  
Precludes additional credit for SOCI 3507 (no longer offered).  
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.  
Lecture three hours a week.
SOCI 3480 [0.5 credit]
Law and Social Regulation
A study of sociological theories of law as well as the nature of legal institutions. Impacts of legal regulation on various social institutions and on processes of social debate and conflict. Also listed as LAWS 3106.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3570 [0.5 credit]
Studies in Art, Culture and Society
Aesthetic practices and institutions. Production and reception of diverse art forms (visual, musical, corporeal, etc.) in various sociocultural contexts. Institutions dedicated to supporting such practices (e.g., museums, theatres, festivals, rituals) are examined through a range of theoretical perspectives. Also listed as ANTH 3570.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3710 [0.5 credit]
Introduction to Cultural Studies
Research and theory in the interdisciplinary area of Cultural Studies. Contemporary cultural change in the advanced industrialized societies and its impact on everyday life.
Includes: Experiential Learning Activity
Prerequisites:
- SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3805 [0.5 credit]
Studies in Population
Historical and current debates on population growth. Historical declines in fertility and mortality from an international perspective. Contemporary demographic issues such as low fertility, longevity revolution, population aging, inequalities in health, migration and refugees.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3910 [0.5 credit]
Course-Related Tutorials in Sociology
Consult the Department for information, as departmental permission is required.

SOCI 3920 [0.5 credit]
Course-Related Tutorials in Sociology
Consult the Department for information, as departmental permission is required.

SOCI 3950 [0.5 credit]
Practicum Placement in Sociology
This course provides students with the opportunity to apply academic skills and knowledge while working within a sociology-related organization. Placements are organized with support from a co-ordinator.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Sociology with a GPA of 9.00 or higher and permission of the course instructor.
Placement six to eight hours a week.

SOCI 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

SOCI 4002 [0.5 credit]
Advanced Studies in Sociological Theory
Close study of the works of an author, tendency, or school of thought in theoretical sociology. Topic will vary in keeping with interests of the students and instructor.
Prerequisite(s): SOCI 3006 and fourth-year standing.
Seminar three hours a week.

SOCI 4003 [0.5 credit]
Advanced Studies in Qualitative Research
In-depth study into selected issues in qualitative research design, implementation and data analysis. Topics covered may include participant observation, ethnomethodology, ethnography, grounded theory, discourse analysis, narrative analysis, textual analysis, and document analysis. Intersections between epistemologies and methodologies.
Prerequisites:
- Additional credit for ANTH 4003.
Prerequisite(s): SOCI 3004 and fourth-year standing.
Seminar three hours a week.

SOCI 4009 [0.5 credit]
Advanced Studies in Quantitative Research
Study of specific quantitative methodological issues. Focus may be on one or two of the following topics: quantitative research design, sampling techniques, survey research methods and various statistical research methods including OLS and logistic regression.
Prerequisites:
- Additional credit for SOCI 4840 (no longer offered).
Prerequisite(s): SOCI 3002 and fourth-year standing.
Seminar/lab three hours a week.

SOCI 4020 [0.5 credit]
Advanced Studies in Race and Ethnicity
Selected topics in race and ethnicity in an international context. Specific topics will vary according to instructors’ research interests.
Also listed as ANTH 4020.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.
SOCI 4039 [0.5 credit]
Women in Contemporary Middle East Societies
Socio-economic, political and cultural realities of Middle Eastern women with focus on their lived experiences, voices and stories. Focus on women in Palestine/Israel with consideration of other Middle Eastern women.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4040 [0.5 credit]
Feminist Sociology of Intersectionality
Theoretical and empirical examination of gender relations and gendered inequality with emphasis on the complex intersection of gender with race, ethnicity, religion, class, sexuality, (dis)ability and other relations of power in feminist scholarship, social justice movements, law and policy.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4043 [0.5 credit]
Families in the 21st Century
Examination of contemporary family forms including single-parent-, blended/step-, LGBTQ- and common-law families. Topics may include theoretical perspectives; reproductive technologies; globalization; migration; interracial families; cohabitation; separation/divorce; motherhood/fatherhood; childcare/domestic labour; children/youth; intergenerational relations; social class/poverty; family policies and family law.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4160 [0.5 credit]
War, Terrorism and State Terrorism
Critical theoretical and empirical analysis of violent political conflict. Examination of transformations and continuities of war, terrorism and state terrorism; modalities of political violence, such as torture or disappearance; responses to violent conflict; and the representation and construction of political violence.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4170 [0.5 credit]
Community-Engaged Sociology
Students will apply their sociological education working with community organizations in small teams to research issues and advocate for positive social change. Each team’s project will include public education, sociological analysis and creating a tangible product for the partner organization.
Includes: Experiential Learning Activity
Prerequisite(s): third-year or fourth-year standing, or permission from the instructor of SOCI 4170.
Lectures, discussion and project work three hours a week.

SOCI 4171 [0.5 credit]
Community Engagement Capstone
Students in the capstone will reflect on their engagement experiences and advance their critical understanding of community through a series of in-class activities and readings. Students will produce a public-facing artifact (e.g., blog, podcast, video) related to their experiences, potentially in collaboration with community partners.
Includes: Experiential Learning Activity
Also listed as ANTH 4171.
Prerequisite(s): SOCI 2180 and fourth year standing or permission of the instructor.
Lecture, discussion and project work three hours a week.

SOCI 4200 [0.5 credit]
War, Security and Citizenship
Critical theoretical and multidisciplinary examination of violent conflict, security and citizenship. How wars produce a variety of abject and new subjects, create and reproduce citizenship hierarchies, and expand and contract citizenship entitlements.
Also listed as ANTH 4200.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4410 [0.5 credit]
Advanced Studies in Criminology
Crime, criminal justice, social processes relating to the implementation of criminal justice policy, or other aspects of criminality and deviance.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4480 [0.5 credit]
Advanced Studies in the Sociology of Law
Contemporary debates about the role of law in society focusing on the potential and limits of law as a vehicle of social transformation.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4700 [0.5 credit]
Honours Capstone Seminar
Students carry out a small-scale research project to hone transferable skills acquired over the course of the degree programme.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4702 [0.5 credit]
Special Topic in Criminal Justice and Social Policy
Examination of a selected topic in criminal justice and social policy. Topics to be announced.
Also listed as LAWS 4702, SOWK 4702.
Prerequisite(s): fourth-year standing.
Seminars three hours a week.
SOCI 4730 [0.5 credit]
Colonialism and Post-Colonialism
Comparative ethnographic and historical approaches to colonialism including topics such as the formation of colonial regimes, colonial governmentality, servile labour systems, missionization, anti-colonial resistance, cultural hybridization and post-colonial memory. Exploration of debates over the relation between colonialism and the production of social scientific knowledge.
Also listed as ANTH 4730.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4750 [0.5 credit]
Advanced Studies in Globalization and Citizenship
Selected topics on the confluence of processes of globalization, development and citizenship; examination of debates about the meaning and impact of globalization on patterns of inequality and citizenship both internationally and within Canada, and about strategies for progressive development.
Also listed as ANTH 4750.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4810 [0.5 credit]
Advanced Studies in Social Policy
An examination of sociological research and social intervention.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4850 [0.5 credit]
Contemporary Problems in Sociology
Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4860 [0.5 credit]
Contemporary Problems in Sociology
Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4900 [1.0 credit]
Honours Thesis
An independent research project under the supervision of a faculty member. Seminar supports students through each stage of the research process: development of a research question, designing the project, crafting a proposal, carrying out data generation and analysis, and writing the final thesis.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Sociology B.A. Honours with a CGPA of 9.00 or higher in the Major or by permission of the instructor. Students are strongly encouraged to locate a faculty member to supervise their Honours Thesis prior to the start of this course.
Seminars on a bi-weekly basis (three hours).

SOCI 4910 [0.5 credit]
Tutorial in Sociology
Consult the Department for information.

SOCI 4920 [0.5 credit]
Tutorial in Sociology
Consult the Department for information.

South Asian Studies (Minor)
This section presents the requirements for programs in:
- Minor in South Asian Studies

Program Requirements
Minor in South Asian Studies (4.0 credits)
This minor is available to all undergraduate degree students.

Requirements:
1. 1.0 credit in:
   - SAST 1001 [0.5] Introduction to South Asian Studies I
   - SAST 1002 [0.5] Introduction to South Asian Studies II
2. 2.0 credits in Approved South Asian Studies Electives at the 1000-level or higher (see list below)
3. 1.0 credit in Approved South Asian Studies Electives at the 3000-level or higher (see list below)

Total Credits 4.0

Approved South Asian Studies Electives
Other courses not listed here may be used if they have sufficient South Asian content and advance approval of the department.

Anthropology
- ANTH 2020 [0.5] Race and Ethnicity
- ANTH 2630 [0.5] Studies in Asian Societies: Current Issues in Anthropological Research
- ANTH 3020 [0.5] Studies in Race and Ethnicity
- ANTH 4020 [0.5] Advanced Studies in Race and Ethnicity

Art History
- ARTH 2007 [0.5] Asian Art
- ARTH 3007 [0.5] Modern Asian Art

English Language and Literature
- ENGL 2936 [0.5] South Asian Literatures I
ENGL 2937 [0.5] South Asian Literatures II
ENGL 3940 [0.5] Studies in Diaspora Lit.
ENGL 3965 [0.5] Intro to Postcolonial Theory
ENGL 3972 [0.5] Studies in Postcolonial Literature

**Film Studies**
FILM 2606 [0.5] History of World Cinema I
FILM 2607 [0.5] History of World Cinema II

**History**
HIST 1707 [1.0] World History
HIST 2312 [0.5] History of the Indian Ocean World
HIST 2910 [0.5] Special Subject in History
HIST 3217 [0.5] Empire and Globalization
HIST 3715 [0.5] Themes in South Asian History

**Music**
MUSI 2009 [0.5] Music of Asia
MUSI 3107 [0.5] Classical Indian Music

**Philosophy**
PHIL 2700 [0.5] Asian Philosophy

**Political Science**
PSCI 3700 [0.5] Government and Politics of South Asia

**Religion**
RELI 2410 [0.5] Buddhism
RELI 2510 [0.5] Hinduism
RELI 2515 [0.5] Religion and Aesthetics in India
RELI 2711 [0.5] Love and Its Myths
RELI 2750 [0.5] Sikhism
RELI 3420 [0.5] Early Buddhism
RELI 3520 [0.5] Modern Hinduism
RELI 3522 [0.5] Early Hinduism

**Regulations**
In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

**South Asian Studies (SAST) Courses**

**SAST 1001 [0.5 credit]**
Introduction to South Asian Studies I
An introduction to South Asian studies, including history, literature, religion, philosophy and the arts.
Includes: Experiential Learning Activity
Lecture three hours per week.

**SAST 1002 [0.5 credit]**
Introduction to South Asian Studies II
An introduction to contemporary dimensions of South Asia including cultural, social and political thought and practice.
Includes: Experiential Learning Activity
Lecture three hours per week.

**Spanish (Minor)**

This section presents the requirements for programs in:
- Minor in Spanish

**Minor in Spanish (4.0 credits)**
Open to all undergraduate degree students.

**Requirements:**
1. 3.0 credits in SPAN 3.0
2. 1.0 credit in SPAN at the 3000-level or higher 1.0
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.
4. The remaining requirements of the major discipline(s) and degree must be satisfied.

**Total Credits** 4.0

**Placement for Language Students**

**Note:** A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

**Regulations**
In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

**Spanish (SPAN) Courses**

**Placement for Language Students**

**Note:** A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

**SPAN 1010 [0.5 credit]**
First-Year Spanish I
For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for SPAN 1110.
Four hours a week.
SPAN 1020 [0.5 credit]
First-Year Spanish II
Continuation of first-year Spanish. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for SPAN 1110.
Prerequisite(s): grade of C or higher in SPAN 1010, or permission of the School.
Four hours a week.

SPAN 1110 [1.0 credit]
Intensive First-Year Spanish
For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for SPAN 1020 or SPAN 1030.
Eight hours a week (one term).

SPAN 2010 [0.5 credit]
Second-Year Spanish I
Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for SPAN 2110.
Prerequisite(s): grade of C or higher in SPAN 1020, SPAN 1110, or permission of the School.
Four hours a week.

SPAN 2020 [0.5 credit]
Second-Year Spanish II
Continuation of second-year Spanish. Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for SPAN 2110.
Prerequisite(s): grade of C or higher in SPAN 2010, or permission of the School.
Four hours a week.

SPAN 2110 [1.0 credit]
Intensive Second-Year Spanish
Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for SPAN 2110.
Prerequisite(s): grade of C or higher in SPAN 2010, SPAN 1110, or permission of the School.
Eight hours a week (one term).

SPAN 3010 [0.5 credit]
Third-Year Spanish I
Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Precludes additional credit for SPAN 3110.
Prerequisite(s): grade of C or higher in SPAN 2020, SPAN 2110, or permission of the School.
Three hours a week.

SPAN 3020 [0.5 credit]
Third-Year Spanish II
Continuation of third-year Spanish. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Precludes additional credit for SPAN 3110.
Prerequisite(s): grade of C or higher in SPAN 3010 or SPAN 3015, or permission of the School.
Three hours a week.

SPAN 3110 [1.0 credit]
Intensive Third-Year Spanish
Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Precludes additional credit for SPAN 3010, SPAN 3020.
Prerequisite(s): grade of C or higher in SPAN 2020, SPAN 2110, or permission of the School.
Six hours a week (one term).

SPAN 3220 [0.5 credit]
Introduction to Spanish Linguistics
Introduction to principles of linguistic analysis, illustrated through Spanish. Sound systems, word structures and sentence structures of Spanish. Basic principles of language variation and change, as evidenced in the development of Spanish. Linguistic aspects of bilingualism as manifested in Spanish/English bilinguals.
Prerequisite(s): SPAN 3020 or SPAN 3110 or permission of the School.
Three hours a week.

SPAN 4010 [0.5 credit]
Fourth-Year Spanish I
Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Precludes additional credit for SPAN 4110.
Prerequisite(s): grade of C or higher in SPAN 3020, SPAN 3110, or permission of the School.
Three hours a week.

SPAN 4015 [0.5 credit]
Spanish for Heritage Speakers I
For students who have attained Spanish language proficiency in informal settings. This course formalizes grammar awareness, enhances literacy skills, and develops existing language abilities in a formal academic setting.
Precludes additional credit for all SPAN courses numbered 4110 and below.
Prerequisite(s): permission of the School.
Online.
SPAN 4020 [0.5 credit]
Fourth-Year Spanish II
Continuation of fourth-year Spanish. Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Prerequisite(s): grade of C or higher in SPAN 4010, or permission of the School.
Three hours a week.

SPAN 4025 [0.5 credit]
Spanish for Heritage Speakers II
For students who have started to develop existing Spanish language abilities in a formal setting. This course enhances students' written expression while building on advanced knowledge of Spanish grammar and vocabulary.
Prerequisite(s): SPAN 4015 or permission of the School.
Online.

SPAN 4110 [1.0 credit]
Intensive Fourth-Year Spanish
Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in SPAN 4010 or SPAN 4020, SPAN 3110, or permission of the School.
Six hours a week (one term).

SPAN 4215 [0.5 credit]
Spanish for Specific Purposes
Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Includes: Experiential Learning Activity
Prerequisite(s): LING 1001 or SPAN 3220, and grade of C or higher in SPAN 4020 or SPAN 4110, or permission of the School.
Three hours a week.

SPAN 4300 [0.5 credit]
Topics in Spanish-speaking Cultures
Selected topics in Spanish-speaking cultures and societies. Development of advanced language skills.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in SPAN 4020 or SPAN 4110, or permission of the School.
Three hours per week.

SPAN 4900 [1.0 credit]
Independent Study
Research in a topic in Spanish language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Spanish, grade of C or higher in SPAN 4020 or SPAN 4110 or equivalent, or permission of the School.

SPAN 4901 [0.5 credit]
Independent Study
Research in a topic in Spanish language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Spanish, grade of C or higher in SPAN 4020 or SPAN 4110 or equivalent, or permission of the School.

Technology, Society, Environment Studies (Minor)
This section presents the requirements for programs in:
• Minor in Technology, Society, Environment Studies (TSE)

Program Requirements
Minor in Technology, Society, Environment Studies (TSE) (4.0 credits)
This minor is available to all undergraduate degree students.

Requirements
1. 1.0 credit in:
   - ENSC 2001 [0.5] Earth Resources and Natural Hazards: Environmental Impacts
   - ISCI 2002 [0.5] Human Impacts on the Environment
2. 1.0 credit in:
   - TSES 3001 [0.5] Technology-Society Interactions
   - TSES 3002 [0.5] Energy and Sustainability
3. 1.0 credit from:
   - ISCI 1001 [0.5] Introduction to the Environment
   - ISCI 2000 [0.5] Natural Laws
   - TSES 2305 [1.0] Ancient Science and Technology
   - CLCV 2305 [1.0] Ancient Science and Technology
4. 1.0 credit from:
   - TSES 4001 [0.5] Technology and Society: Risk
   - TSES 4002 [0.5] Technology and Society: Forecasting
TSES 4003 [0.5 credit] Technology and Society: Innovation
TSES 4005 [0.5 credit] Information Technology and Society
TSES 4006 [0.5 credit] Technology and Society: Work
TSES 4007 [0.5 credit] Product Life Cycle Analysis
TSES 4008 [0.5 credit] Environmentally Harmonious Lifestyles
TSES 4009 [0.5 credit] Special Topics
TSES 4010 [0.5 credit] Special Topics
TSES 4011 [0.5 credit] Technology and Society: Development
TSES 4012 [0.5 credit] Science and Fiction: Creating Tomorrow
TSES 4014 [0.5 credit] Technology-Society: Time

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Note: This Minor is designed for all degree students. There are no requirements for OAC Science credits or University level credits in Natural Sciences. Students with one or more OAC and/or university credits in science can replace ISCI 1001 and ISCI 2000 with TSES 2305, and/or additional half-credit 4000-level TSE courses. Students who have taken courses equivalent to ENSC 2001 and/or ISCI 2002 can also replace all or part of requirement 1 with 4000-level TSE courses. Any substitution requires permission of the Chair of TSE.

Regulations
In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Performance Evaluation (see the Academic Regulations of the University section of this Calendar).

Technology, Society, Environment (TSES) Courses
TSES 2006 [0.5 credit] Ecology and Culture
Cultural adaptations to the environment are set within globalization processes. New symbolic, historical and political ecologies arise out of the hubris of classical models. The advocacy role of applied ecological anthropology and the consequences of Western cultures’ adaptive capacities will be examined.
Prerequisite(s): second year standing or equivalent. Lectures three hours a week.

TSES 2305 [1.0 credit] Ancient Science and Technology
Development of science and technology in the ancient world and their practical application. The craftsman and artisan in society; the attitude of intellectuals to science and manual labour. Effects of the institution of slavery. Suitable for students with no previous knowledge of Greece or Rome. Also listed as CLCV 2305.
Prerequisite(s): second-year standing or equivalent. Lectures two hours a week.

TSES 3001 [0.5 credit] Technology-Society Interactions
Ethical issues in introducing technology; historical review of technology and human development; effects on society of medical and communications technologies; automation and its effects on society, especially work; impact of technology on international affairs, especially through multinational enterprises. Guest lecturers.
Includes: Experiential Learning Activity
Precludes additional credit for TSES 3000 and TSES 3500.
Prerequisite(s): at least second-year standing. Lectures and workshops three hours per week.

TSES 3002 [0.5 credit] Energy and Sustainability
History of energy use by humans; utilization of renewable energy sources; energy and agriculture; energy and mineral resources; options for electricity generation; nuclear energy; risks of accidents in large systems, e.g. nuclear plants, hydroelectric dams. Guest lecturers.
Includes: Experiential Learning Activity
Precludes additional credit for TSES 3000 and TSES 3500.
Prerequisite(s): at least second-year standing. Lectures and workshops three hours per week.

TSES 3500 [0.5 credit] Interactions in Industrial Society
Ethical issues involving technology; effects on society of automation, medical and communications technologies; technology and international affairs; energy use by humans; renewable energy sources; energy in agriculture and mineral extraction; electricity generation; nuclear energy; accidents in large systems, e.g. nuclear plants and hydroelectric dams.
Precludes additional credit for TSES 3001, TSES 3002 and TSES 3000.
Prerequisite(s): at least second-year standing. Lectures three hours per week for both terms.

TSES 4001 [0.5 credit] Technology and Society: Risk
Examines the complex practice of evaluating technology’s impact on society and the environment; risk analysis; cost-benefit analysis; technology regulation; retrospective project assessment; necessary aspects of assessment and assessment examples. Guest lecturers.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or equivalent. Lectures and workshops three hours a week.

TSES 4002 [0.5 credit] Technology and Society: Forecasting
Methods used for forecasting technological and social change; technological and social change portrayed in literature; science fiction factors involved in such change. Guest lecturers.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or equivalent. Lectures and workshops three hours a week.
TSES 4003 [0.5 credit]
Technology and Society: Innovation
Technological and social innovation, especially in Canada: historical examples; the relation of innovation to economic development; analysis of the steps involved; effect on employment; impediments and incentives. Guest lecturers. Prerequisite(s): third-year standing or equivalent. Lectures and seminars three hours a week.

TSES 4005 [0.5 credit]
Information Technology and Society
Investigation of the human and social impacts of electronic information and communication on our working, educational, and personal lives from various disciplinary perspectives; problem issues and competing values in the creation, manipulation, dissemination, and control of information are identified; resolution initiatives encouraged. Guest lecturers. Prerequisite(s): third-year standing or equivalent. Lectures and seminars three hours a week.

TSES 4006 [0.5 credit]
Technology and Society: Work
Explores the relationship between technology, employment and the individual; work organizations; employment restructuring; rural/urban split; the impact of information technologies; demographic impacts and globalization; Canadian issues and public policy explored. Guest lecturers. Prerequisite(s): third-year standing or equivalent. Lectures and workshops three hours a week.

TSES 4007 [0.5 credit]
Product Life Cycle Analysis
Life cycle analysis of products and processes, from resource extraction through design and use to waste management or recycling; social and environmental implications of product design and use; how we value material objects and the environment; consumerism; evolution of design. Guest lectures. Includes: Experiential Learning Activity Prerequisite(s): third-year standing or equivalent. Lectures and workshops three hours a week.

TSES 4008 [0.5 credit]
Environmentally Harmonious Lifestyles
Brief history of humans as part of the ecosystem; religious and ethical views; current degree of ecosystem disturbance by industrial society; innovations in products and services furthering the sustainability of the ecosystem, emphasis on the Canadian context. Guest lecturers and a major project. Prerequisite(s): third-year standing or equivalent. Lectures and seminars three hours a week.

TSES 4009 [0.5 credit]
Special Topics
Reading course for students who wish to investigate a particular topic relevant to TSES. Prerequisite(s): third-year standing or equivalent and permission of the Chair of TSE.

TSES 4010 [0.5 credit]
Special Topics
Specific topics of current interest. Topics may vary from year to year. Prerequisite(s): third-year standing or equivalent. Lectures three hours a week.

TSES 4011 [0.5 credit]
Technology and Society: Development
Created in collaboration with Engineers Without Borders Carleton, the course explores appropriate ways of meeting technological needs of communities. Uses Canadian and African case studies to examine how capacity building has a greater impact than simple delivery of technological goods. Prerequisite(s): third-year standing or equivalent. Lectures three hours a week.

TSES 4012 [0.5 credit]
Science and Fiction: Creating Tomorrow
Scenarios are used to speculate about the planned future. Science fiction and speculative fiction project ideas about imagined futures. Using readings from scenarios, speculative fiction and science fiction the course explores the mutual shaping of fiction, science and technology. Prerequisite(s): third-year standing or equivalent.

TSES 4014 [0.5 credit]
Technology-Society: Time
Time is a universal human experience, but it presents some profound mysteries. It governs our behaviour on personal, societal and cultural levels. This course will bring together experts from physics, sociology, philosophy, biology, literature and psychology to illuminate our understanding. Prerequisite(s): third-year standing or equivalent. Lectures three hours a week.

Women's and Gender Studies
This section presents the requirements for programs in:

- Women's and Gender Studies B.A. Honours
- Women's and Gender Studies B.A. Combined Honours
- Women's and Gender Studies B.A.
- Specialization in Global Genders and Sexualities B.G.In.S. Honours
- Stream in Global Genders and Sexualities B.G.In.S.
- Minor in Women's and Gender Studies
Program Requirements

Women’s and Gender Studies B.A. Honours (20.0 credits)

Students must successfully complete at least 0.5 credit in each of the four areas (CRST, DBST, SXST, WGST) to fulfill the program requirements for the Women’s and Gender Studies B.A. Honours.

A. Credits included in the Major CGPA (9.0 credits)

1. 1.0 credit from:
   - FYSM 1402 [1.0] Issues in Women’s and Gender Studies
   - WGST 1808 [1.0] Introduction to Feminist Social Transformation

2. 0.5 credit in:
   - WGST 2801 [0.5] Activism, Feminisms, and Social Justice

3. 0.5 credit from:
   - CRST 2001 [0.5] Introduction to Critical Race Studies
   - DBST 2001 [0.5] Disabling Society
   - SXST 2101 [0.5] Sexuality Studies: A Critical Introduction

4. 0.5 credit in:
   - WGST 3001 [0.5] Theory and Research in Feminist Social Transformation

5. 3.0 credits from WGST, SXST, DBST, or CRST at the 3000- or 4000-level

6. 2.0 credits from WGST, SXST, DBST, CRST or WGST-approved Electives at the 2000- or 3000-level

7. 0.5 credit from WGST, SXST, DBST, or CRST at the 4000-level

8. 0.5 credit from WGST, SXST, DBST, CRST or WGST-approved Electives at the 4000-level

B. Credits not included in the Major CGPA (11.0 credits)

8. 8.0 credits not in WGST

9. 3.0 credits in free electives

Total Credits 20.0

Women’s and Gender Studies B.A. Combined Honours (20.0 credits)

Students must successfully complete at least 0.5 credit in each of the four areas (CRST, DBST, SXST, WGST) to fulfill the program requirements for the Women’s and Gender Studies B.A. Combined Honours.

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit from:
   - FYSM 1402 [1.0] Issues in Women’s and Gender Studies
   - WGST 1808 [1.0] Introduction to Feminist Social Transformation

2. 0.5 credit in:
   - WGST 2801 [0.5] Activism, Feminisms, and Social Justice

3. 0.5 credit from:
   - CRST 2001 [0.5] Introduction to Critical Race Studies
   - DBST 2001 [0.5] Disabling Society
   - SXST 2101 [0.5] Sexuality Studies: A Critical Introduction

4. 0.5 credit in:
   - WGST 3001 [0.5] Theory and Research in Feminist Social Transformation

5. 1.5 credit from WGST, SXST, DBST or CRST at the 2000- or 3000-level

6. 2.0 credits from WGST, SXST, DBST, CRST or WGST-approved Electives at the 2000- or 3000-level

7. 0.5 credit from WGST, SXST, DBST, or CRST at the 4000-level

8. 0.5 credit from WGST, SXST, DBST, CRST or WGST-approved Electives at the 4000-level

B. Additional Requirements (13.0 credits)

9. The requirements for Combined Honours in the other discipline must be met

10. Sufficient electives to make a total of 20.0 credits for the degree

Total Credits 20.0

Women’s and Gender Studies B.A. (15.0 credits)

Students must successfully complete at least 0.5 credit in each of the four areas (CRST, DBST, SXST, WGST) to fulfill the program requirements for the Women’s and Gender Studies B.A.

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit from:
   - FYSM 1402 [1.0] Issues in Women’s and Gender Studies
   - WGST 1808 [1.0] Introduction to Feminist Social Transformation

2. 0.5 credit in:
   - WGST 2801 [0.5] Activism, Feminisms, and Social Justice

3. 0.5 credit from:
   - CRST 2001 [0.5] Introduction to Critical Race Studies
   - DBST 2001 [0.5] Disabling Society
   - SXST 2101 [0.5] Sexuality Studies: A Critical Introduction

4. 0.5 credit in:
   - WGST 3001 [0.5] Theory and Research in Feminist Social Transformation

5. 1.5 credit from WGST, SXST, DBST, CRST or WGST-approved Electives at the 3000-level

6. 2.0 credits from WGST, SXST, DBST, CRST, or WGST-approved Electives

B. Credits Not included in the Major CGPA (9.0 credits)

8. 6.0 credits in electives not in WGST

9. 3.0 credits in free electives

Total Credits 15.0

Specialization in Global Genders and Sexualities B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses
   - GINS 1000 [0.5] Global History
   - GINS 1010 [0.5] International Law and Politics
   - GINS 1020 [0.5] Ethnography, Globalization and Culture
   - GINS 2000 [0.5] Ethics and Globalization
2.  0.0 credit in: International Experience Requirement Preparation
   GINS 1300 [0.0] International Experience Requirement Preparation

3.  7.5 credits in: The Specialization
   a.  1.5 credits in: Foundations
      SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
      WGST 1808 [1.0] Introduction to Feminist Social Transformation
   b.  2.0 credits from: Theorizing Bodies and Borders
      CRST 2001 [0.5] Introduction to Critical Race Studies
      CRST 4001 [0.5] Advanced Critical Race Studies
      SXST 2102 [0.5] Sexuality, Gender, and Security
      SXST 3103 [0.5] Sexuality and Disability
      SXST 3104 [0.5] Transnational Sexualities
      SXST 3106 [0.5] Queer(ing) Archives
      WGST 2803 [0.5] Body Matters: The Politics of Bodies
   c.  2.5 credits from: Advocacy and Activism
      HUMR 2202 [0.5] Power Relations and Human Rights
      HUMR 2301 [0.5] Human Rights and Sexualities
      HUMR 3202 [0.5] Human Rights and Resistance
      WGST 2801 [0.5] Activism, Feminisms, and Social Justice
      WGST 2812 [0.5] Selected Topics in Women's and Gender Studies
      WGST 3812 [0.5] Selected Topics in Women's and Gender Studies
      WGST 3803 [0.5] Feminisms and Transnationalism
      WGST 3806 [0.5] Girlhoods
      WGST 3807 [0.5] Gendered Violence
   d.  1.5 credits from: Honours Seminars in Global Gender and Sexuality
      HUMR 4302 [0.5] Transgender Human Rights
      HUMR 4401 [0.5] Gender, Citizenship and Social Justice in a Transnational World
      SXST 4101 [0.5] Interdisciplinary Studies of Sexuality
      SXST 4103 [0.5] Politics of Kink
      WGST 4812 [0.5] Selected Topics in Women's and Gender Studies

B. Credits Not Included in the Major CGPA (8.0 credits)
4.  8.0 credits in: free electives

C. Additional Requirements
5.  The International Requirement must be met.

Total Credits 20.0

Stream in Global Genders and Sexualities
B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)
1.  4.0 credits in: Core Courses
   GINS 1000 [0.5] Global History
   GINS 1010 [0.5] International Law and Politics
   GINS 1020 [0.5] Ethnography, Globalization and Culture
   GINS 2000 [0.5] Ethics and Globalization
   GINS 2010 [0.5] Globalization and International Economic Issues
   GINS 2020 [0.5] Global Literatures
   GINS 3010 [0.5] Global and International Theory
   GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2.  4.0 credits from: the Stream
   a.  Foundations
      SXST 2101 [0.5] Sexuality Studies: A Critical Introduction
      WGST 1808 [1.0] Introduction to Feminist Social Transformation
   b.  Theorizing Bodies and Borders
      CRST 2001 [0.5] Introduction to Critical Race Studies
      CRST 4001 [0.5] Advanced Critical Race Studies
      SXST 2102 [0.5] Sexuality, Gender, and Security
      SXST 3103 [0.5] Sexuality and Disability
      SXST 3104 [0.5] Transnational Sexualities
      SXST 3106 [0.5] Queer(ing) Archives
      WGST 2803 [0.5] Body Matters: The Politics of Bodies
      WGST 2811 [0.5] Masculinities
      WGST 3001 [0.5] Theory and Research in Feminist Social Transformation
   c.  Advocacy and Activism
      HUMR 2202 [0.5] Power Relations and Human Rights
      HUMR 2301 [0.5] Human Rights and Sexualities
      HUMR 3202 [0.5] Human Rights and Resistance
      WGST 2801 [0.5] Activism, Feminisms, and Social Justice
      WGST 2812 [0.5] Selected Topics in Women's and Gender Studies
      WGST 3812 [0.5] Selected Topics in Women's and Gender Studies
      WGST 3803 [0.5] Feminisms and Transnationalism
      WGST 3806 [0.5] Girlhoods
      WGST 3807 [0.5] Gendered Violence
      WGST 3808 [0.5] Selected Topics in Women's and Gender Studies
   d.  1.5 credits from: Honours Seminars in Global Gender and Sexuality
      HUMR 4302 [0.5] Transgender Human Rights
      HUMR 4401 [0.5] Gender, Citizenship and Social Justice in a Transnational World
      SXST 4101 [0.5] Interdisciplinary Studies of Sexuality
      SXST 4103 [0.5] Politics of Kink
      WGST 4812 [0.5] Selected Topics in Women's and Gender Studies

B. Credits Not Included in the Major CGPA (7.0 credits)
3.  7.0 credits in free electives

C. Additional Requirements
4.  The Language Requirement must be met.

Total Credits 15.0
Minor in Women's and Gender Studies  
(4.0 credits)

The minor in Women's and Gender Studies is open to all undergraduate degree students not in Women's and Gender Studies programs.

Requirements:

1. **1.0 credit from:**
   - FYSM 1402 [1.0] Issues in Women's and Gender Studies
   - WGST 1808 [1.0] Introduction to Feminist Social Transformation

2. **0.5 credit in:**
   - WGST 2801 [0.5] Activism, Feminisms, and Social Justice

3. **0.5 credit from:**
   - CRST 2001 [0.5] Introduction to Critical Race Studies
   - DBST 2001 [0.5] Disabling Society
   - SXST 2101 [0.5] Sexuality Studies: A Critical Introduction

4. **1.0 credit from** WGST-approved Electives at the 2000-level or above

5. **1.0 credit from** WGST-approved Electives at the 3000-level or above

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Women's and Gender Studies Approved Electives

The following course offerings are listed for the convenience of students. Detailed course descriptions will be found under the appropriate departmental course listings.

**Note:** Special Topics courses and other courses offered by units throughout the University may in any given year contain substantial material on gender and/or women's experience. Recent examples include certain courses in art history, geography, history, journalism and sociology.

Women's and Gender Studies Approved Electives

**Anthropology**
- ANTH 2040 [0.5] Anthropology and Gender

**Art History**
- ARTH 4600 [0.5] Art, Architecture, and Gender

**Communication and Media Studies**
- COMS 4604 [0.5] Media, Gender and Sexuality

**Critical Race Studies**
- CRST 2001 [0.5] Introduction to Critical Race Studies
- CRST 4001 [0.5] Advanced Critical Race Studies

**Disability Studies**
- DBST 2001 [0.5] Disabling Society
- DBST 3001 [0.5] Disability Studies: Policy and Activism
- DBST 3060 [0.5] Critical Disability Studies
- DBST 3301 [0.5] Introduction to Deaf Studies
- DBST 3304 [0.5] Disability and Childhood: Transnational Perspectives

- DBST 3900 [0.5] Independent Study

**Economics**
- ECON 3380 [0.5] The Economics of Gender and Ethnicity

**English Language and Literature**
- ENGL 2108 [0.5] Women and Literature
- ENGL 2109 [0.5] Gender, Sexuality and Literature

**Film Studies**
- FILM 3301 [0.5] Topics in Cinema, Gender, and Sexuality

**History**
- HIST 2506 [0.5] Introduction to Women's and Gender History
- HIST 3106 [0.5] Social History of Sexuality
- HIST 3406 [0.5] African-American Women
- HIST 3505 [0.5] Women in Canada
- HIST 3713 [0.5] Gender and Sexuality in Latin America
- HIST 3717 [0.5] Gender and Sexuality in Africa
- HIST 4505 [1.0] Seminar in Women's and Gender History

**Human Rights**
- HUMR 2301 [0.5] Human Rights and Sexualities
- HUMR 4401 [0.5] Gender, Citizenship and Social Justice in a Transnational World

**Law**
- LAWS 3001 [0.5] Women and the Legal Process
- LAWS 3503 [0.5] Equality and Discrimination
- LAWS 3804 [0.5] Law of the Family
- LAWS 4001 [0.5] Law, Family and Gender
- LAWS 4002 [0.5] Feminist Theories of Law

**Music**
- MUSI 3302 [0.5] Music and Gender I
- MUSI 4303 [0.5] Music and Gender II

**Philosophy**
- PHIL 2306 [0.5] Philosophy and Feminism
- PHIL 2307 [0.5] Gender and Philosophy
- PHIL 4005 [0.5] Seminar in Modern Philosophy
- PHIL 4603 [0.5] Special Topic in Feminist Philosophy
- PHIL 4604 [0.5] Special Topic in Feminist Philosophy

**Political Science**
- PSCI 2500 [0.5] Gender and Politics
- PSCI 3303 [0.5] Feminist Political Theory
- PSCI 3502 [0.5] Gender and Politics: Global South
- PSCI 4403 [0.5] Reproductive Rights Policy in North America
- PSCI 4500 [0.5] Gender and Globalization
- PSCI 4501 [0.5] Politics of Identity in Europe and the Russian Area
- PSCI 4506 [0.5] Women and Politics in North America
- PSCI 4605 [0.5] Gender in International Relations

**Psychology**
- PSYC 3603 [0.5] Psychology of Women

**Public Administration**
- PADM 4213 [0.5] Gender and Public Policy
B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Performance Evaluation (consult the Academic Regulations of the University section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, including 1.0 credit from each of the four Breadth Areas identified below. Credits that fulfill requirements in the Major, Minor, Concentration or Specialization may be used to fulfill the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities


Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST
Breadth Area 3: Science, Engineering, and Design

Subject codes: AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students
Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Open Studies program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree before reaching second year standing. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

Change of Program Within the B.A. Degree
Students may transfer to a program within the B.A. degree, if upon entry to the new program they would be in Good Standing. Other applications for change of program will be considered on their merits; students may be admitted to the new program in Good Standing or on Academic Warning. Students may apply to declare or change their program within the B.A. Degree at the Registrar's Office according to the published deadlines. Acceptance into a program or into a program element or option is subject to any enrollment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations and Specializations
Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration or Specialization requires that the student be in Good Standing.

Mention : Français
Students registered in certain B.A. programs may earn the notation Mention : Français by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details consult the departmental program entries.

Students in a B.A. Honours program must present:
1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:
1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the Mention : Français requirement in both disciplines.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the Academic Regulations of the University section of this Calendar for information regarding study on Exchange or Letter of Permission.

Admissions Information
Admission Requirements are for the 2021-22 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the General Admission and Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as recommended are not mandatory for admission. Students who do not follow
the recommendations will not be disadvantaged in the admission process.

**Admission Requirements**

**Degrees**
- Bachelor of Arts (B.A.)(Honours)
- Bachelor of Arts (B.A.)

**First Year**

*For B.A. and B.A. (Honours)*

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). For applicants whose first language is not English, the requirement of English can also be met under the conditions outlined in the section “English Language Requirements” in the Admissions Requirements and Procedures section of this Calendar.

The cut-off average for admission will be set annually and will normally be above the minimum requirement. Applicants falling slightly below the cut-off average will be considered on an individual basis to determine whether there are special circumstances that would permit their admission. Students who feel that their high school grade average does not reflect their potential may apply to the Enriched Support Program (see the Enriched Support Program section of this Calendar).

**Advanced Standing**

*B.A. and B.A. (Honours) Program*

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

**Women’s and Gender Studies (WGST) Courses**

**WGST 1808 [1.0 credit]**

*Introduction to Feminist Social Transformation*

Overview of intersectional feminist debates as well as historical and contemporary theoretical traditions in gender and sexuality studies, critical race studies, and disability studies. Topics include the social construction of femininity, masculinity, and other identifications; Indigenous, decolonial, and transnational feminisms.

Includes: Experiential Learning Activity

Prerequisites: one of WGST 1808, HUMR 1001, FYSM 1402 or FYSM 1403 or permission of the Institute of Women’s and Gender Studies.

Lectures and discussion three hours a week.

**WGST 2800 [0.5 credit]**

*Intersectional Identities*

Critical examination of the multiple intersections between gender, as a relation of power and social identity, as these intersect with (neo)colonialism, racism, poverty, ableism and heterosexism in a globalized world.

Includes: Experiential Learning Activity

Prerequisites: one of WGST 1808, HUMR 1001, FYSM 1402 or FYSM 1403 or permission of the Institute of Women’s and Gender Studies.

Lectures and discussion three hours a week.

**WGST 2801 [0.5 credit]**

*Activism, Feminisms, and Social Justice*

A comparative, interdisciplinary examination of feminist activism in the modern era. A range of perspectives and materials are used to examine the objectives, scope, and impact of feminists’ efforts to effect social and political change in different historical, cultural, and national settings.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures and discussion three hours a week.

**WGST 2803 [0.5 credit]**

*Body Matters: The Politics of Bodies*

Introduction to feminist studies of globalization and politics of bodies. Globalization of ideas, cultures, economics and politics, movement of bodies, bodies as spaces for disrupting norms of sex, gender, race, class, ability, sexuality, embodiment and embodied resistance in a globalized world.

Prerequisite(s): second-year standing.

Lectures and discussion three hours a week.

**WGST 2811 [0.5 credit]**

*Masculinities*

Theoretical, experiential, cultural and policy issues around masculinities studies. The complexities of masculinities; the intersections of feminist and masculinity studies. Topics may include hegemonic, racialized, homosexual, and Other(ed) masculinities. Feminist theories and transnational perspectives frame course content and discussions.

Prerequisite(s): second-year standing.

Lectures and discussion three hours a week.

**WGST 2812 [0.5 credit]**

*Selected Topics in Women’s and Gender Studies*

An interdisciplinary analysis of one or more topics in women’s and gender studies.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures and discussion three hours a week. This course is repeatable when the topic changes.

**WGST 2814 [0.5 credit]**

*Gender, Sexuality and Cultural Production*

How gender and cultural (re)production (literature, visual/performing arts, social media) and consumption articulate, circulate, and transform each other within economic, political, and social contexts. Emphasis on role, object, processes, and representations.

Prerequisite(s): second-year standing.

Lectures and discussion three hours a week.
WGST 3001 [0.5 credit]
Theory and Research in Feminist Social Transformation
Interdisciplinary and intersectional approach introducing students to contemporary feminist, Indigenous, decolonial, and transnational theories, issues, conflicts, methodologies, and critiques of prevailing approaches to the construction of knowledge. Themes include, feminist epistemology, ontology, knowledge, and ethics in feminist research.
Includes: Experiential Learning Activity
Precludes additional credit for WGST 3809 (no longer offered), WGST 3810 (no longer offered).
Prerequisite(s): Third-year standing and 1.0 credit in WGST or permission of the Institute of Women's and Gender Studies.
Lecture three hours a week.

WGST 3803 [0.5 credit]
Feminisms and Transnationalism
Feminist analyses of the diversity of transnational experiences around rights, health, education, motherhood, fathering, work, social media and technological change, among others. Topics may include: migration, environment, wars/conflicts, neocolonialism, diaspora, human trafficking, refugee issues and displaced populations.
Prerequisite(s): third-year standing, and 1.0 credit in WGST; or permission of the Institute.

WGST 3806 [0.5 credit]
Girlhoods
The emerging discipline of girlhood studies; social and cultural constructions of girlhood and categories of difference. Topics may include the commercialization of girlhood, popular culture and girls, negotiating identities, violence, sexualities, agency and activism in a globalizing world.
Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute.
Lecture three hours a week.

WGST 3807 [0.5 credit]
Gendered Violence
Theories, concepts and contexts of the complex manifestations of gendered violence in the lives of women, men and children globally.
Precludes additional credit for WGST 3005 Section "A", if taken in Winter 2012 and WGST 3005 Section "A" if taken in Fall 2009.
Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute of Women's and Gender Studies.
Lecture three hours a week.

WGST 3812 [0.5 credit]
Selected Topics in Women's and Gender Studies
An interdisciplinary analysis of one or more topics in women's and gender studies.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and 1.0 credit in WGST.
Lecture three hours a week.

WGST 4003 [0.5 credit]
Traversing Feminisms
Interdisciplinary overview of key historical concepts and issues in Women's and Gender Studies in the areas of theory, epistemology, and research design. Topics will vary from year to year. Provides additional background for students entering Women's and Gender Studies from other disciplines.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Institute.
Also offered at the graduate level, with different requirements, as WGST 5003, for which additional credit is precluded.
Seminar three hours a week.

WGST 4800 [0.5 credit]
Women's and Gender Studies Practicum
Experience in research through a combination of classroom seminars and a field placement. Each project will be negotiated individually as a contract between the student, instructor and institutional partner.
Includes: Experiential Learning Activity
Prerequisite(s): WGST 3809 and WGST 3810, and fourth-year standing with a minimum 6.5 CGPA in B.A. Hons. Women's and Gender Studies program or permission of the Institute.

WGST 4801 [1.0 credit]
Women's and Gender Studies Practicum
Experience in applied feminisms through a combination of classroom seminars and internship. Each project will be negotiated individually as a contract between the student, instructor and institutional partner. Students must complete both the in-class and the internship portion of the course.
Includes: Experiential Learning Activity
Precludes additional credit for WGST 4800, WGST 4903 and WGST 4904 (no longer offered).
Prerequisite(s): WGST 3809, WGST 3810, and fourth-year standing with a minimum 6.5 CGPA in B.A. Hons. Women's and Gender Studies program or permission of the Institute.
Also offered at the graduate level, with different requirements, as WGST 5920, for which additional credit is precluded.
This full-credit course is offered intensively in one term.
WGST 4811 [1.0 credit]
Honours Research Project in Women's and Gender Studies
Students will undertake a major research project on some aspect of women's and gender studies under the supervision of a faculty member. Includes: Experiential Learning Activity
Prerequisite(s): a major CGPA of at least 11.00, plus WGST 3809 and WGST 3810 and fourth-year standing in B.A. Hons. Women's and Gender Studies program, or permission of the Institute of Women's and Gender Studies.

WGST 4812 [0.5 credit]
Selected Topics in Women's and Gender Studies
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing and 1.0 credit in Women's and Gender Studies or permission of the Institute of Women's and Gender Studies.
Seminar three hours a week. This course is repeatable when the topic changes.

WGST 4814 [0.5 credit]
Independent Study
Reading or research course supervised by a faculty member. Written proposal approved by the supervisor must be submitted before last day of course changes. Normally, only 0.5 credit of independent study may be counted in the program. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in a Women's and Gender Studies program or permission of the Institute of Women's and Gender Studies.

Courses
Aerospace Engineering (AERO)
African Studies (AFRI)
American Sign Language (ASLA)
Anthropology (ANTH)
Applied Linguistics and Discourse Studies (ALDS)
Arabic (ARAB)
Archaeology (ARCY)
Architecture
  Theory/History (ARCH)
  Technical (ARCC)
  Urban (ARCU)
  Techniques (ARCN)
  Design Studios/Design Thesis/Research (ARCS)
Art and Architectural History (ARTH)
Biochemistry (BIOC)
Biology (BIOL)
Business (BUSI)
Canadian Studies (CDNS)
Centre for Initiatives in Education (CIED)
Chemistry (CHEM)
Childhood and Youth Studies (CHST)
Chinese (CHIN)
Civil Engineering (CIVE)
Classical Civilization (CLCV)
Co-operative Education (COOP)
Cognitive Science (CGSC)
Communication and Media Studies (COMS)
Communication Courses for Disciplines and Professions (CCDP)
Computer Science (COMP)
Criminology and Criminal Justice (CRCJ)
Critical Race Studies (CRST)
Digital Humanities (DIGH)
Disability Studies (DBST)
Earth Sciences (ERTH)
Economics (ECON)
Electronics (ELEC)
Engineering Common Core Courses (ECOR)
English (ENGL)
English as a Second Language (ESLA)
Environmental and Climate Humanities (EACH)
Environmental Engineering (ENVE)
Environmental Science (ENSC)
Environmental Studies (ENST)
European, Russian and Eurasian Studies (EURR)
Film Studies (FILM)
First-Year Seminars (FYSM)
Food Science (FOOD)
French (FREN)
French Interdisciplinary Studies (FINS)
Geography (GEOG)
Geomatics (GEOM)
German (GERM)
Global and International Studies (GINS)
Global Politics (GPOL)
Greek (GREK)
Health Sciences (HLTH)
History (HIST)
Human Rights (HUMR)
Humanities (HUMS)
Indigenous Studies (INDG)
Industrial Design (IDES)
Information Technology
  Information Resource Management (IRM)
  Information Technology (BIT)
  Interactive Multimedia and Design (IMD)
  Network Technology (NET)
  Optical Systems and Sensors (OSS)
Information Technology (ITEC)
Integrated Science (INSC)
Interdisciplinary Public Affairs (IPAF)
Interdisciplinary Science (ISCI)
Interdisciplinary Science and Practice (ISAP)
Interdisciplinary Studies (DIST)
International Affairs (INAF)
Italian (ITAL)
Japanese (JAPA)
Journalism and Communication (JOUR)
Korean (KORE)
Language Studies (LANG)
Latin (LATN)
Latin American and Caribbean Studies (LACS)
Aerospace Engineering (AERO)

Aerospace Engineering (AERO) Courses

AERO 2001 [0.5 credit]
Aerospace Engineering Graphical Design
Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Assignments will make extensive use of Computer-Aided Design (CAD) and will include the production of detail and assembly drawings from actual physical models.
Includes: Experiential Learning Activity
Also listed as MAAE 2001.
Prerequisite(s): Second-year status in Engineering.
Lectures and tutorials two hours a week, laboratory four hours a week.

AERO 3002 [0.5 credit]
Aerospace Design and Practice
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2001 and third-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

AERO 3101 [0.5 credit]
Lightweight Structures
Structural concepts; theory of elasticity; bending, torsion and shear in thin-walled beams having single or multi-cell sections; work and energy principles; deformation and force analysis of advanced structures, including stiffened thin-wall panels; finite element methods. Stability and buckling of thin-walled structures.
Prerequisite(s): MAAE 3202.
Lectures three hours a week; problem analysis one hour a week.

AERO 3240 [0.5 credit]
Orbital Mechanics
Prerequisite(s): MAAE 2101.
Lectures three hours per week, tutorial one hour per week.
AERO 3700 [0.5 credit]
Aerospace Materials
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2700.
Lectures three hours a week; problem analysis one hour a week.

AERO 3841 [0.5 credit]
Spacecraft Design I
Design of spacecraft and spacecraft subsystems with emphasis on mission requirements and current design methods: spacecraft configuration, payload, structural, attitude control, thermal, power, and other related subsystems. Spacecraft integration and testing.
Includes: Experiential Learning Activity
Prerequisite(s): AERO 3240.
Lectures three hours a week, tutorials or laboratories three hours per week.

AERO 4003 [0.5 credit]
Aerospace Systems Design
Stress and deflection analysis; fatigue, safe life, damage tolerant design. Propulsion systems integration; landing gear; control and other subsystems. Mechanical component design. Airworthiness regulations and certification procedures. Weight and cost estimation and control. System reliability. Design studies of aircraft or spacecraft components.
Includes: Experiential Learning Activity
Prerequisite(s): AERO 3002 and fourth-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

AERO 4009 [0.5 credit]
Aviation Management and Certification
Product development, quality control. Strategic organizational analysis and design. Airworthiness, type certification and planning, delegation of authority, airplane flight manual. Aerospace system design and safety.
Prerequisite(s): fourth-year status in Engineering.
Lectures three hours per week.

AERO 4300 [0.5 credit]
Acoustics and Noise Control
Behaviour of compressible fluids, sound waves and properties of sound sources; measurement of sound; human perception of sound; prediction methods based on energy considerations; sound propagation in realistic environments: outdoors, rooms, ducts; absorption and transmission loss, noise control; case studies.
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 3004 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4302 [0.5 credit]
Aerodynamics and Heat Transfer
Differential equations of motion. Viscous and inviscid regions. Potential flow: superposition; thin airfoils; finite wings; compressibility corrections. Viscous flow: thin shear layer approximation; laminar layers; transition; turbulence modeling. Convective heat transfer: free versus forced convection; energy and energy integral equations; turbulent diffusion.
Prerequisite(s): MAAE 3300 or MECH 3310.
Also offered at the graduate level, with different requirements, as MECH 5000, for which additional credit is precluded.
Lectures three hours a week.

AERO 4304 [0.5 credit]
Computational Fluid Dynamics
Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4306 [0.5 credit]
Aerospace Vehicle Performance
Morphology of aircraft and spacecraft. Performance analysis of fixed wing aircraft: drag estimation, propulsion, take-off, climb and landing, endurance, payload/range, manoeuvres; operational economics. Performance analysis of rotor craft: rotor-blade motion, hovering and vertical ascent, forward flight, and autorotation. Rocket propulsion; escape velocity; orbital dynamics.
Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4308 [0.5 credit]
Aircraft Stability and Control
Static stability and control: equilibrium requirements; longitudinal stability requirements; neutral points; manoeuvring flight; control forces and control requirements; lateral static stability certification requirements. Dynamic stability: axis systems; governing equations; phugoid and short period modes; lateral dynamic modes. Closed-loop control.
Prerequisite(s): MAAE 3500 and fourth-year status in Engineering.
Also offered at the graduate level, with different requirements, as MECH 5101, for which additional credit is precluded.
Lectures three hours a week.
AERO 4402 [0.5 credit]
Aerospace Propulsion
Propulsion requirements, effects of Mach Number, altitude, and application; basic propeller theory; propeller, turboshift, turbojet, turbofan and rocket; cycle analysis and optimization for gas turbine power plant; inter-relations between thermodynamic, aerodynamic and mechanical designs; rocket propulsion; selection of aeroengines.
Precludes additional credit for MECH 4401.
Prerequisite(s): MAAE 2400, (MAAE 3300 or MECH 3310), and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4442 [0.5 credit]
Transatmospheric and Spacecraft Propulsion
Planetary/interplanetary environments and effects. Launch and spacecraft propulsion: liquid/solid/hybrid rockets, ram/scramjets, combined cycle engines, electrothermal, electromagnetic, electrostatic, nuclear, and propellantless propulsion. Trajectory analysis, multi-staging, separation dynamics. Advanced engine concepts.
Prerequisite(s): MAAE 2400, (MAAE 3300 OR MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4446 [0.5 credit]
Heat Transfer for Aerospace Applications
Precludes additional credit for MECH 4406.
Prerequisite(s): MAAE 2400 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4540 [0.5 credit]
Spacecraft Attitude Dynamics and Control
Prerequisite(s): AERO 3240 and MAAE 3500 and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4607 [0.5 credit]
Rotorcraft Aerodynamics and Performance
Prerequisite(s): MAAE 3004 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours per week.

AERO 4608 [0.5 credit]
Composite Materials
Reinforcing mechanisms in composite materials; material properties. Strength and elastic constants of unidirectional composites; failure criteria. Analysis of laminated plates; bending and eigenvalue problems. Environmental effects and durability. Damage tolerance. Design of composite structures.
Prerequisite(s): MAAE 2202 and fourth-year status in Engineering.
Lectures three hours a week.

AERO 4609 [0.5 credit]
Joining of Materials
Design for joining: base material and component geometry. Selection of joining method and filler material; Adhesive bonding; Soldering; Brazing; Diffusion bonding; Resistance welding; Fusion welding (GTAW, EB, laser and plasma arc); Friction welding; NDE. Emphasis on Aerospace materials and applications.
Prerequisite(s): MAAE 2700 and fourth-year status in Engineering.
Lectures three hours per week.

AERO 4842 [0.5 credit]
Spacecraft Design II
System view of spacecraft. Requirements definition. Spacecraft payloads (remote sensing, imaging systems, astronomy instrumentation etc.). Exploration missions. Implications for systems and missions. Space system design case studies.
Includes: Experiential Learning Activity
Precludes additional credit for AERO 4802 (no longer offered).
Prerequisite(s): AERO 3841 and fourth-year status in Engineering.
Lectures three hours a week, tutorials or laboratories one hour per week.

African Studies (AFRI)

African Studies (AFRI) Courses
AFRI 1001 [0.5 credit]
Introduction to African Studies I
Introduction to African studies, including history, geography, literature, and the arts.
Lecture three hours per week, or two-hour lecture and one hour discussion group per week.
AFRI 1002 [0.5 credit]
Introduction to African Studies II
Introduction to contemporary political, economic, and social dimensions of Africa.
Lecture three hours per week.

AFRI 2002 [0.5 credit]
The Horn of Africa
The economic, social and political challenges facing the Horn of Africa, placing them in historical and global context. These countries may be discussed: Djibouti, Eritrea, Ethiopia, Somalia, Sudan, South Sudan.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2003 [0.5 credit]
The Great Lakes Region of Africa
The economic, social and political challenges facing the Great Lake Regions of Africa, including the 1994 Rwanda genocide and its aftermath. These countries may be discussed: Burundi, Democratic Republic of Congo, Kenya, Rwanda, Tanzania, Uganda.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2004 [0.5 credit]
North Africa
The economic, social and political challenges facing Egypt and the Maghreb countries of North Africa, including the “Arab Spring”. These countries may be discussed: Algeria, Egypt, Libya, Morocco, Mauritania, Tunisia, Western Sahara.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2005 [0.5 credit]
West Africa
The economic, social and political challenges facing countries of West Africa, including domestic issues and regional relations. These countries may be discussed: Benin, Burkina Faso, Cape Verde, Cote d’Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2006 [0.5 credit]
Southern Africa
The economic, social and political challenges facing the countries of southern Africa, including the legacies of apartheid. These countries may be discussed: Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe.
Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.
Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 3001 [0.5 credit]
Globalization and Popular Culture in Africa
This course examines new popular life-worlds in Africa. Though potentially "elusive" to conceptualize, this course shows how these forms of popular culture are related to the role of youth culture and social media in an age of globalization and democratization.
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3002 [0.5 credit]
Regions in Africa: Cultures, Society, Politics
Using dominant linguistic borderlines that have shaped much of the African experience in the last century, this course will look at themes cutting across culture, geography, society and politics in francophone, anglophone, lusophone and arabophone Africa.
Precludes additional credit for AFRI 2001 (no longer offered).
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3003 [0.5 credit]
African Social and Political Thought
The African communitarian tradition. Contemporary African social and political thought, situated in their broad historical contexts.
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3004 [0.5 credit]
The African City
Historical emergence and contemporary issues of the African city.
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.

AFRI 3005 [0.5 credit]
African Migrations and Diasporas
Movements of African peoples, from the slave trade era to the present. African diaspora communities around the world and their relationship with Africa.
Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Lecture three hours a week.
AFRI 3007 [0.5 credit]
Special Topic in African Studies
A special topic related to African Studies, through one or more disciplinary lenses. Course content will vary from year to year.
Prerequisite(s): a 2000-level AFRI course or third-year standing and 1.0 credit in AFRI.
Lectures three hours a week.

AFRI 3100 [0.5 credit]
African Studies Abroad: Selected Topics
Based at one of Carleton's partner universities in Africa, course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in African studies, as selected by the instructor. Topic and location may change annually.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and approval by the Director of the Institute of African Studies.

AFRI 3200 [0.5 credit]
Thematic Topic
A special topic that takes a thematic approach to African Studies. Course content will vary from year to year.
Prerequisite(s): a 2000-level AFRI course or third-year standing and 1.0 credit in AFRI.
Lectures three hours a week.

AFRI 3609 [0.5 credit]
African Cinema
Major moments, debates, figures and movements in African cinema around such categories as the colonial, the anti-colonial, the postcolonial, the national, the continental, the diasporic, the global, race, Afro-futurism, and world cinema, interrogating in the process the very category of "African cinema."
Also listed as FILM 3609.
Prerequisite(s): 1.0 credit in FILM and third year standing or permission of instructor.
Lecture and screening three hours a week, lecture one hour a week.

AFRI 3900 [0.5 credit]
Placement
Placement for one term with an African focus.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Institute of African Studies.

AFRI 3916 [0.5 credit]
Spoken Word Poetry Workshop
This intermediate-level workshop-based course explores traditions of spoken words poetry while requiring students to create and perform their own spoken word poems.
Includes: Experiential Learning Activity
Also listed as ENGL 3916.
Prerequisite(s): third-year standing or a 2000-level writing workshop and permission of the instructor.
Workshops three hours a week

AFRI 4000 [0.5 credit]
Advanced Topics in African Studies
Seminar examining a specialized topic in African studies. The topic will vary from year to year.
Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Seminar three hours per week.

AFRI 4003 [0.5 credit]
History of 'The African Child'
Students will analyze the history of the figure of 'the African child' using a range of visual, sources from colonial officials, anthropologists, historians, advertisers, charity and development workers, and African children themselves.
Includes: Experiential Learning Activity
Also listed as CHST 4003.
Precludes additional credit for CHST 4001 if taken in 2014-15.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

AFRI 4050 [0.5 credit]
Selected Topics in African Studies
Selected topics in African studies not ordinarily treated in the regular course program. The choice of topic varies from year to year. Students should check with the institute regarding the topic offered.
Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Also offered at the graduate level, with different requirements, as AFRI 5050, for which additional credit is precluded.
Seminar three hours per week.

AFRI 4060 [0.5 credit]
African Feminisms
African feminisms as theoretical interventions and as political practice, and as diverse forms. Gender as a marker of power: status, hierarchy, social capability, and as a system of distribution of resources, responsibilities and solidarities.
Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.
Also offered at the graduate level, with different requirements, as AFRI 5060, for which additional credit is precluded.
Seminar three hours per week.

AFRI 4900 [0.5 credit]
Tutorial in African Studies
A tutorial on selected topics in which seminars are not available.
Prerequisite(s): Permission of the Institute of African Studies and agreement of an instructor.

American Sign Language (ASLA)

American Sign Language (ASLA) Courses
Placement for Language Students
**Note**: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

**ASLA 1010 [0.5 credit]**
**First-Year American Sign Language I**
For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance.
Precludes additional credit for ASLA 1110.
Four hours a week.

**ASLA 1020 [0.5 credit]**
**First-Year American Sign Language II**
Continuation of first-year American Sign Language. Basic communicative competence plus anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance.
Precludes additional credit for ASLA 1110.
Prerequisite(s): grade of C or higher in ASLA 1010, or permission of the School.
Four hours a week.

**ASLA 1110 [1.0 credit]**
**Intensive First-Year American Sign Language**
For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance.
Precludes additional credit for ASLA 1010 or ASLA 1110.
Eight hours a week (one term).

**ASLA 2010 [0.5 credit]**
**Second-Year American Sign Language I**
Study of American Sign Language beyond the elementary level. Study of targeted lexical and grammatical features, as well as specific conversational skills. Further exploration of the culture of deaf people. Compulsory attendance.
Precludes additional credit for ASLA 2110.
Prerequisite(s): grade of C or higher in ASLA 1020, ASLA 1110, or permission of the School.
Four hours a week.

**ASLA 2020 [0.5 credit]**
**Second-Year American Sign Language II**
Continuation of second-year American Sign Language. Study of targeted lexical and grammatical features, as well as specific conversational skills. Further exploration of the culture of deaf people. Compulsory attendance.
Precludes additional credit for ASLA 2110.
Prerequisite(s): grade of C or higher in ASLA 2010, or permission of the School.
Four hours a week.

**ASLA 2110 [1.0 credit]**
**Intensive Second-Year American Sign Language**
Further study of American Sign Language to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for ASLA 2010 and ASLA 2020.
Prerequisite(s): grade of C or higher in ASLA 1020 or ASLA 1110, or permission of the School.
Eight hours a week (one term).

**ASLA 3010 [0.5 credit]**
**Third-Year American Sign Language I**
Receptive and expressive mastery of grammar and lexicon of American Sign Language. Advanced conversation skills across different registers. Advanced insight into the culture of the deaf community. Compulsory attendance.
Prequisite(s): grade of C or higher in ASLA 2020, ASLA 2110, or permission of the School.
Three hours a week.

**ASLA 3020 [0.5 credit]**
**Third-Year Advanced American Sign Language II**
Prerequisite(s): grade of C or higher in ASLA 3010, or permission of the School.
Three hours a week.

**ASLA 4010 [0.5 credit]**
**Fourth-Year American Sign Language I**
Focus on the development of receptive and productive skills above what is expected in everyday conversation. Skills in specific contexts such as social services, health, business and government. Compulsory attendance.
Prerequisite(s): grade of C or higher in ASLA 3020, or permission of the School.
Three hours a week.
ASLA 4020 [0.5 credit]
Fourth-Year American Sign Language II
Continuation of fourth-year American Sign Language. Focus on the development of receptive and productive skills above what is expected in everyday conversation. Skills in specific contexts such as social services, health, business and government. Compulsory attendance. Prerequisite(s): grade of C or higher in ASLA 4010, or permission of the School. Three hours a week.

ASLA 4900 [1.0 credit]
Independent Study
Research in a topic in American Sign Language or deaf culture under the supervision of a member of the School. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing in the Minor in American Sign Language, grade of C or higher in ASLA 4020 or equivalent, or permission of the School.

ASLA 4901 [0.5 credit]
Independent Study
Research in a topic in American Sign Language or deaf culture under the supervision of a member of the School. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing in the Minor in American Sign Language, grade of C or higher in ASLA 4020 or equivalent, or permission of the School.

ANTH 2001 [1.0 credit]
Foundations in Socio-Cultural Anthropology
Exploration of basic anthropological concepts and analytical strategies through case studies. Emphasis on socio-cultural diversity as documented by ethnographic research with attention to the role of culture in articulating gender, kinship, economic and political relations. Includes: Experiential Learning Activity Prerequisite(s): ANTH 1001 or ANTH 1002. Lectures and discussions three hours a week.

ANTH 2020 [0.5 credit]
Race and Ethnicity
Introduction to some of the recent theoretical literature and research on the issues of race, racism and ethnicity. Concepts, controversies and definitions dealing with race and ethnicity from the Canadian context and internationally. Also listed as SOCI 2020. Lectures and workshop three hours a week.

ANTH 2040 [0.5 credit]
Anthropology and Gender
The study of gender in anthropology, including its theoretical, cross-cultural and ethnographic aspects. Emphasis on gender as a sociocultural process that is at once discursive and embodied, and that varies in distinct cultural, socio-historical, geopolitical, and economic contexts. Includes: Experiential Learning Activity Precludes additional credit for ANTH 2408 (no longer offered). Lectures and workshop three hours a week.

ANTH 2060 [0.5 credit]
Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
Drawing on anthropological and sociological approaches, students will explore girls’ lives in diverse cultural, political, economic, and social contexts. Topics may include: movement and migration, education, media, imaging and humanitarianism, consumerism, agency and activism, health, and violence. Also listed as SOCI 2060. Prerequisite(s): second-year standing or permission of the instructor. Two hour lecture plus one hour tutorial per week.

ANTH 2070 [0.5 credit]
Psychological Anthropology
Exploration of the relative and the universal in relations between the psychological self and the cultural environment. Topics may include anthropology of psychiatric institutions and practices, the cultural relativity of emotions, the self in everyday life and ritual. Lecture/discussion groups three hours a week.
ANTH 2080 [0.5 credit]  
Humans/Animals: the More-than-Human in Social Research  
Examination of relationships between humans and animals in the sociological and broader social studies canon, including: multispecies ethnography, the role of the ‘more than human’ in Indigenous legal orders, posthumanist and STS theory, relationships between humans and animals and other non-human entities in the Anthropocene.  
Also listed as SOCI 2080.  
Lecture/discussion groups three hours per week.

ANTH 2180 [0.5 credit]  
Foundations in Community Engagement  
Study of theoretical debates and practical applications relating to community engagement with a focus on Canadian examples. Exploration of the contested and complex meanings of community engagement in and between diverse communities, public institutions, non-profit sector and private enterprise with an emphasis on social justice.  
Includes: Experiential Learning Activity  
Also listed as SOCI 2180.  
Prerequisite(s): Second year standing or permission of instructor.  
Lecture, discussion and project work three hours a week.

ANTH 2500 [0.5 credit]  
Culture and Symbols  
The representation and construction of culture through symbols. Topics may include material culture, rituals, archetypes, myths and mythmaking.  
Includes: Experiential Learning Activity  
Precludes additional credit for ANTH 3304 (no longer offered).  
Lectures and workshop three hours a week.

ANTH 2510 [0.5 credit]  
Theories of Human Nature  
Critical, cross-cultural exploration of theories of human consciousness. Begins with a survey of western anthropological models of human consciousness and examines scientific, philosophical and religious perspectives with reference to ethnographic research on myth, religion and science produced by western and non-western cultures.  
Lectures and discussion three hours a week.

ANTH 2550 [0.5 credit]  
Religion and Society  
Cross-cultural survey of religious institutions, focusing on theories and methodologies in the study of religion. Topics may include myth, totemism, cults, ritual, belief systems, altered states of consciousness, new religious and/or new age movements and the relationship of religion with other social institutions and processes.  
Includes: Experiential Learning Activity  
Also listed as RELI 2736.  
Lectures and workshop three hours a week.

ANTH 2610 [0.5 credit]  
Examination of a range of issues related to particular indigenous communities and regions of North America. Topics include political, socio-economic, and cultural transformations, Aboriginal title and rights, collaborative research, and other topics relevant to indigenous communities and indigenous - non-indigenous relations.  
Precludes additional credit for ANTH 3610 (no longer offered).  
Lecture/discussion groups three hours a week.

ANTH 2620 [0.5 credit]  
Ethnography of Sub-Saharan Africa  
Examination of selected areas of contemporary Sub-Saharan Africa through current anthropological research. Topics may include war and displacement, religion, politics, international development, history, popular culture, colonialism, witchcraft, health and kinship.  
Precludes additional credit for ANTH 3620 (no longer offered).  
Lecture/discussion groups three hours a week.

ANTH 2630 [0.5 credit]  
Studies in Asian Societies: Current Issues in Anthropological Research  
Examination of contemporary Asia through anthropological research. Topics may include cultural practices, religion, health issues, economics, politics, history, colonialism and social change. Emphasis will vary by sub-region from year to year, e.g., focusing on South, East or Southeast Asia.  
Lectures and discussion three hours a week.

ANTH 2635 [0.5 credit]  
Tradition and Modernity in the Pacific  
Relationships between contemporary Pacific societies and the rest of the world. Topics may include colonialism and its aftermaths, cultural revival, mining, Christianity, alternative modernities, diasporas, and indigenous media.  
Lecture/discussion groups three hours a week.

ANTH 2640 [0.5 credit]  
Andean Ethnography  
Ethnographic survey of the Andes. The formation of “indigenous” communities and their relation to urban centres and nation-states. Topics may include state formation, social movements, agrarian reform, political economy of food, class, ethnicity and racism, rural-urban migration, community.  
Lectures and discussion three hours a week.

ANTH 2645 [0.5 credit]  
The Postcolonial Middle East  
How do people live in the Middle East? What political, historical and religious forces shape their everyday life? This class draws on essays, ethnographies, and movies to challenge the narratives of chronic violence, excessive religiosity, and prehistoric misogyny that haunt our understanding of this region.  
Lecture and discussion three hours a week.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 2650</td>
<td>Ethnography of Mesoamerica</td>
<td>Ethnographic survey of Mexico and Guatemala focusing on a variety of rural and urban communities throughout the area with emphasis on indigenous groups. Topics may include nationalism, ethnicity, social organization, gender, cosmology, and material culture. Lectures and discussion three hours a week.</td>
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<tr>
<td>ANTH 2660</td>
<td>Ethnography of North Africa</td>
<td>Introduction to societies and cultures of North Africa. Topics may include: history and socio-cultural role of Islam, the relations between Arabs and Berbers, ethnography of religious institutions, ritual practices, everyday life, gender, colonialism, and post-colonialism, problems of state and religion. Lectures and discussion three hours a week.</td>
</tr>
<tr>
<td>ANTH 2670</td>
<td>Ethnography of Brazil</td>
<td>Examination of selected areas of contemporary Brazil through current anthropological research. Topics may include: processes of nation-formation, colonialism, gender and sexuality, race and racism, health, everyday life, urban ethnography, popular culture, social movements, and institutions such as religion, the family and the state. Lectures and discussion three hours a week.</td>
</tr>
<tr>
<td>ANTH 2680</td>
<td>Anthropology of &quot;Mainstream&quot; North America</td>
<td>Examination of contemporary North American society. Topics may include social class, success myths, schooling, immigration, cities, the self, television, romance, youth sub cultures; how what is seen as “mainstream” is determined. Lectures/discussion groups three hours a week.</td>
</tr>
<tr>
<td>ANTH 2690</td>
<td>Ethnography of a Selected Area</td>
<td>Ethnography of a selected area. Area to be announced. Lectures and discussion three hours a week.</td>
</tr>
<tr>
<td>ANTH 2815</td>
<td>Selected Topics in Anthropology</td>
<td>Selected topics in anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered. Lecture/discussion groups three hours a week.</td>
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<tr>
<td>ANTH 2825</td>
<td>Selected Topics in Anthropology</td>
<td>Selected topics in anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered. Lecture/discussion groups three hours a week.</td>
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<tr>
<td>ANTH 2850</td>
<td>Development and Underdevelopment</td>
<td>International development and its socio-cultural practices with consequences at local, national, and international levels. Topics may include modernization, dependency, globalization, and development as discourse, political ecology, gender, indigenous knowledge, social movements, and non-governmental organizations. Includes: Experiential Learning Activity Lectures and workshop three hours a week.</td>
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<tr>
<td>ANTH 2915</td>
<td>Course-Related Tutorials in Anthropology</td>
<td>Consult the Department for information.</td>
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<tr>
<td>ANTH 2925</td>
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</tr>
<tr>
<td>ANTH 3005</td>
<td>Ethnographic Research Methods</td>
<td>Broad overview of methods through lectures, discussion, and hands-on activities. Research design, ethics, participant-observation, interviewing and other methods, data analysis and ethnographic writing. Prepares students to apply methodological knowledge in careers and projects undertaken for the fourth-year honours research paper and/or ethnographic field course. Includes: Experiential Learning Activity Precludes additional credit for ANTH 2003. Prerequisite(s): ANTH 2001 [1.0]. Lectures three hours a week.</td>
</tr>
<tr>
<td>ANTH 3007</td>
<td>History of Anthropological Theory</td>
<td>Analysis of the development of anthropological thought since the end of the eighteenth to the mid-twentieth century. The development of various theoretical approaches within their historical, social, intellectual and biographical contexts. The implications of these issues may be explored through ethnographies. Precludes additional credit for ANTH 2005 and ANTH 3100. Prerequisite(s): ANTH 2001 [1.0]. Lectures three hours a week.</td>
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<tr>
<td>ANTH 3008</td>
<td>Contemporary Theories in Anthropology</td>
<td>Contemporary trends in anthropological analyses. Discussion of anthropological theory in its contemporary, interdisciplinary context. Precludes additional credit for ANTH 3006 (no longer offered), ANTH 3100. Prerequisite(s): ANTH 2001. Lecture/discussion groups three hours per week.</td>
</tr>
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</table>
ANTH 3010 [0.5 credit]  
Language, Culture, and Globalization  
Theoretical and methodological contributions of anthropology to the study of communicative practices in a variety of social and cultural contexts. Language practices, ideologies, and globalization as they intersect with culture, power, race, ethnicity, indigeneity, gender, nationhood and political economy.  
Prerequisite(s): second-year standing or permission of the instructor.  
Lecture three hours per week.

ANTH 3020 [0.5 credit]  
Studies in Race and Ethnicity  
Race, racism and ethnicity in Canada and internationally. Critical perspectives on race and ethnicity as they intersect with other social relations. Racism, Eurocentrism, Orientalism, nationalism, colonialism, international migration, citizenship, and diasporic cultures.  
Also listed as SOCI 3020.  
Prerequisite(s): second-year standing or permission of the instructor.  
Lectures three hours a week.

ANTH 3025 [0.5 credit]  
Anthropology and Human Rights  
Examines the concepts of “cultural relativism” and “universalism.” What are human rights? Who has them? How do notions of “human rights” evolve? What about other, non-Western concepts of “individual,” “collectivity,” “rights” and “responsibilities”? What about human rights violations and abuses?  
Prerequisite(s): second-year standing or permission of the instructor.  
Lecture three hours a week.

ANTH 3035 [0.5 credit]  
Science, Culture and Society: Social Studies of Science  
Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.  
Also listed as SOCI 3035.  
Prerequisite(s): second-year standing or permission of the instructor.  
Lecture three hours a week.
ANTH 3355 [0.5 credit]
Anthropology and the Environment
Environmental concerns affect everyone, unevenly. How does anthropology illuminate the cultural, social, political and ecological differentiation resulting from and constituting environmental processes? The range of responses considered may address issues of resource access and exploitation, as well as transnational transformations in the concept of nature.
Prerequisite(s): second-year standing or permission of the instructor.
Lectures three hours a week.

ANTH 3360 [0.5 credit]
Jokes, Humor, Laughter
Anthropological inquiries into the phenomenon of humor. Psychoanalytic, semiotic and phenomenological perspectives are applied to ethnographic materials from a variety of cultural contexts.
Lecture/discussion groups three hours per week.

ANTH 3510 [0.5 credit]
Ritual
Cross-cultural study of ritual, religious and secular, its role in various social processes and relation to other activities. Exploration of variability of ritual and the range of theories that have been developed to account for what ritual does, including intellectualist, functionalist and performative.
Prerequisite(s): second-year standing or permission of the instructor.
Lectures and discussion three hours a week.

ANTH 3550 [0.5 credit]
Studies in Visual Anthropology
Examination of the anthropological experience as reflected in film/video and still photography. A number of problems are considered, including selectivity, bias, the effect of the observer’s presence, and problems in reconstructing past events in film. Issues of media-literacy will be examined.
Precludes additional credit for ANTH 3107 (no longer offered).
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3570 [0.5 credit]
Studies in Art, Culture and Society
Thematic investigation of genres, forms and styles of art, culture and society. Topics may include current debates on social structure and artistic creativity; ideology, cultural memory and politics, patronage and art; cross-cultural representations, taste, social mobility and art; modernism and the avant-garde.
Also listed as SOCI 3570.
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3580 [0.5 credit]
Anthropology of Material Culture and Museums
How diverse societies are materialized in a wide range of cultural materials from clothing, housing and memorials to more ephemeral materializations such as food, gardens, dance, ritual props and music-making. Emphasis on museum practices and the cultural politics of display.
Prerequisite(s): second-year standing or permission of the instructor.
Lectures and discussion three hours a week.

ANTH 3600 [0.5 credit]
Studies in Anthropology and Indigenous Peoples
Problems in the interpretation and analysis of various forms of encounters between indigenous peoples and colonizing powers will be examined. Topics may include patterns and practices of contact, cultural syncretism, conquest, domination, relations of ruling, cultural hegemony, resistance and non-compliance.
Includes: Experiential Learning Activity
Precludes additional credit for ANTH 3109 (no longer offered).
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3800 [0.5 credit]
Studies in Applied and Participatory Anthropology
History, significant approaches, and key topics of applied anthropology and participatory research. Participatory and non-participatory anthropological research on social problems within activities of intervention, which may include policy processes, development projects, evaluation exercises, impact assessments, and advocacy work.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing or permission of the instructor.
Lecture three hours a week.

ANTH 3915 [0.5 credit]
Course-Related Tutorials in Anthropology
Consult the Department for information.

ANTH 3925 [0.5 credit]
Course-Related Tutorials in Anthropology
Consult the Department for information.

ANTH 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
ANTH 4000 [0.5 credit]
Field Placement in Anthropology
This course is intended to provide students with practical experience through a field placement equivalent to one day a week. Students are responsible to secure their field placement in a relevant organization with the approval of a Faculty member acting as Field placement coordinator. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours Anthropology standing and permission of the Department.

ANTH 4005 [0.5 credit]
Health and Globalization
An anthropological examination of the health impacts of global processes, relationships, and movements. May include topics such as economic development and disease, migration and health, medical tourism, transnational reproduction, and the global circulation of bodies, organs, medical technologies, drugs, and pathogens.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4006 [0.5 credit]
Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology
Examination of the breadth of critical literature on 'decolonizing methodologies' within and adjacent to anthropology in the 20th and 21st centuries. The course will equip students with an in-depth understanding of critiques of the discipline's methods and ethics while practicing an engaged anthropology. Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours per week.

ANTH 4007 [0.5 credit]
Advanced Studies in Anthropological Theory and Methods
The course examines debates in theory and methodology currently facing the discipline through a survey of leading-edge issues and approaches.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4008 [0.5 credit]
Advanced Studies in Race and Ethnicity
An advanced seminar that explores selected topics in race and ethnicity in an international context. Specific topics will vary according to instructors' research interests.
Also listed as SOCI 4020.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4036 [0.5 credit]
Science and Technology Studies: Selected Topics
The course is concerned with broadening students’ understanding of Science and Technology Studies (STS) by focusing on a relevant topic. Topics may vary from year to year. Students should check with the Department regarding the topic offered.
Precludes additional credit for SOCI 4401 (no longer offered).
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4100 [0.5 credit]
Ethnographic Field Course
In this class, we explore a significant issue in our communities, learning how ethnographic methods can add new perspectives to our own experience and help us appreciate the experience of others. Students learn-through-doing their own small ethnographic projects, peer-to-peer feedback, and reflective discussion.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year standing or permission of the instructor.
Seminar three hours per week.

ANTH 4109 [0.5 credit]
Ethnography, Gender and Globalization
Intersections of gender and globalization; ethnographic focus on how the movements of people, goods, ideas, and capital are transforming existing formations of gender and sexualities. Topics and approaches may vary from year to year.
Prerequisite(s): third-year standing or permission of instructor.
Also offered at the graduate level, with different requirements, as ANTH 5109, for which additional credit is precluded.
Seminar three hours a week.

ANTH 4171 [0.5 credit]
Community Engagement Capstone
Students in the capstone will reflect on their engagement experiences and advance their critical understanding of community through a series of in-class activities and readings. Students will produce a public-facing artifact (e.g., blog, podcast, video) related to their experiences, potentially in collaboration with community partners.
Includes: Experiential Learning Activity
Also listed as SOCI 4171.
Prerequisite(s): ANTH 2180 and fourth year standing or permission of instructor.
Lecture, discussion and project work three hours per week.
ANTH 4200 [0.5 credit]
War, Security and Citizenship
Critical theoretical and multidisciplinary examination of violent conflict, security and citizenship. How wars produce a variety of abject and new subjects, create and reproduce citizenship hierarchies, and expand and contract citizenship entitlements.
Also listed as SOCI 4200.
Prerequisite(s): fourth year standing.
Seminar three hours a week.

ANTH 4215 [0.5 credit]
Selected Topics in Anthropology
Topics not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the department regarding the topic offered.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4225 [0.5 credit]
Selected Topics in Anthropology
Topics not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the department regarding the topic offered.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4355 [0.5 credit]
Anthropology of Natural Resources
Anthropology of natural resources. Topics may include economies, ecologies, cultural and social dynamics of fishing, forestry, lands, mining, oil, wildlife, at varying analytical scales, including a critical examination of the term "natural resource" itself.
Prerequisite(s): third-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as ANTH 5355, for which additional credit is precluded.
Lectures and discussions three hours a week.

ANTH 4500 [0.5 credit]
Advanced Studies in Culture and Symbols
Contemporary debates in theory and methods regarding analysis of the symbolic processes.
Precludes additional credit for ANTH 4705 (no longer offered).
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4550 [0.5 credit]
Advanced Studies in Visual Anthropology
Exploration of media representations of the cultural other through student projects based on contemporary anthropological analysis of cross-cultural multimedia: video, photography, mapping and the Internet. The role of media in the dissemination of anthropological research and as the subject of anthropological analysis.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4560 [0.5 credit]
Economic Anthropology
Anthropology's holistic, comparative and critical contribution to the study of livelihood. How practices and understandings of production, circulation, consumption, and property vary cross-culturally. Relevant theoretical debates including those among formalist (neo-classical), substantivist, Marxist, and interpretive approaches over the applicability of capitalist thinking.
Prerequisite(s): third-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as ANTH 5560, for which additional credit is precluded.
Seminar three hours a week.

ANTH 4570 [0.5 credit]
Political Anthropology
Can anthropology help us understand politics? Can ethnographic encounters help us approach political theory and political action differently? This seminar will focus on concepts (power, authority, equality) and practices (resistance, subjection, solidarity) through which anthropologists invite us to rethink the way we live together.
Prerequisite(s): third-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as ANTH 5570, for which additional credit is precluded.
Seminar three hours a week.

ANTH 4590 [1.0 credit]
Capstone Seminar in Globalization, Culture, and Power
This course is dedicated to developing individual student research projects. Through seminar discussions, these student projects will benefit from an introduction to research design and methodologies, analysis and interpretation, as well as issues surrounding ethics, representation, and knowledge production.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the BGINS Globalization, Culture and Power program with a minimum 9.0 GPA or permission of the instructor.
Seminar three hours a week.
ANTH 4610 [0.5 credit]
Advanced Studies in Indigenous Peoples
This research-based seminar focuses on specific conceptual and methodological issues pertaining to contemporary anthropological research involving Indigenous peoples and communities. Topical focus may vary from year to year.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4620 [0.5 credit]
Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
Research-based seminar that explores the issues and debates related to anthropological research in contemporary sub-Saharan Africa with emphasis on theoretical, methodological, analytical, ethical, practical and applied problems in anthropological research in that area.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4730 [0.5 credit]
Colonialism and Post-Colonialism
Comparative ethnographic and historical approaches to colonialism including topics such as the formation of colonial regimes, colonial governmentality, servile labour systems, missionization, anti-colonial resistance, cultural hybridization and post-colonial memory. Exploration of debates over the relation between colonialism and the production of social scientific knowledge.
Also listed as SOCI 4730.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4750 [0.5 credit]
Advanced Studies in Globalization and Citizenship
Selected topics on the confluence of processes of globalization, development and citizenship. Examination of debates about the meaning and impact of globalization on patterns of inequality and citizenship both internationally and within Canada, and about strategies for progressive development.
Also listed as SOCI 4750.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

ANTH 4780 [0.5 credit]
Anthropology of Personhood
Exploration of anthropological approaches to personhood and diversity in constructions of the self in various socio-cultural and historical contexts.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week.

ANTH 4900 [1.0 credit]
Honours Research Paper in Anthropology
This course offers Honours students the opportunity to write an original research paper in their final year of study. Supported by the HRP supervisor, students develop their projects through seminar discussion addressing issues of research design, ethics, methodology, anthropological analysis, interpretation, and representation.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing.

ANTH 4915 [0.5 credit]
Tutorial in Anthropology
Consult the Department for information.

ANTH 4925 [0.5 credit]
Tutorial in Anthropology
Consult the Department for information.

Applied Linguistics and Discourse Studies (ALDS)

ALDS 1001 [0.5 credit]
Language Matters: Introduction to ALDS
Core topics in applied linguistics and discourse studies. First and second language acquisition; sign language; language teaching and assessment; language in society; language, identity and power; discourse analysis; written language and literacy.
Lectures three hours a week.

ALDS 2201 [0.5 credit]
Analysis of Oral Language Use
Introduction to the analysis of oral language in use; distinctions between spoken and written language; theoretical and methodological approaches such as speech act theory, ethnography of communication, conversation analysis, and discourse analysis; classroom interaction; interaction in first- and second-language acquisition; analysis of spoken language corpora.
Includes: Experiential Learning Activity
Prerequisite(s): ALDS 1001 or permission of the instructor.
Lectures three hours a week.

ALDS 2202 [0.5 credit]
Analysis of Written Language Use
Introduction to the analysis of written language in use, including theoretical and methodological approaches such as rhetorical genre studies (including academic and workplace writing); adult literacy studies; text-structure analysis; discourse analysis (including critical discourse analysis); analysis of textual corpora.
Includes: Experiential Learning Activity
Prerequisite(s): ALDS 1001 or FYSM 1004 or ENGL 1000 or COMS 1000 or COMS 1001 or permission of the instructor.
Lectures three hours a week.
ALDS 2203 [0.5 credit]
Linguistic Theory and Second-Language Learning
Critical study of linguistic theory and description applied to second-language learning; a brief consideration of similarities and differences in first- and second-language development, bilingualism and types of linguistic error and their significance.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures three hours a week.

ALDS 2604 [0.5 credit]
Communication Disorders I
A survey course highlighting congenital, developmental and acquired disorders of speech, language, fluency, hearing and voice; prevalence, current research, assessment and intervention approaches for each disorder will be presented.
Also listed as LING 2604.
Prerequisite(s): second-year standing, or permission of the instructor.
Lectures three hours a week.

ALDS 2704 [0.5 credit]
Bilingualism
The linguistic nature of bilingualism. The structure of bilingual societies and the relation between societal and individual bilingualism. The role of bilingualism in language education.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures three hours a week.

ALDS 2705 [0.5 credit]
Language and Power
How social conditions engender different linguistic choices. Attention to linguistic resources for expressing ideological beliefs and for maintaining and reinforcing power structures in institutional and social sites.
Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1205.
Prerequisite(s): second-year standing.
Lectures three hours a week.

ALDS 3201 [0.5 credit]
Cross-Cultural Communication
Introduction to cross-cultural communication in social, academic and professional settings. Application of theoretical perspectives to case study analysis; pedagogical/training topics as relevant to students' disciplines; collaborative work with other language and cultural groups as feasible.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing, and one of LING 1001 or ALDS 1001, or permission of the School.
Lectures three hours a week.

ALDS 3202 [0.5 credit]
Sociolinguistics
The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.
Also listed as LING 3702.
Precludes additional credit for ALDS 2701 (no longer offered).
Prerequisite(s): ALDS 1001 and third-year standing.
Lectures three hours a week.

ALDS 3205 [0.5 credit]
English as a Global Language
The origins, development and globalization of the English language. Establishment of Standard English; spread of English in the Inner circle and in expanding circles; world Englishes; linguistic features of English varieties. English as a global language; learning and teaching English as an international language.
Includes: Experiential Learning Activity
Prerequisite(s): ALDS 1001 and LING 1001.
Seminars three hours a week.

ALDS 3301 [0.5 credit]
Introduction to Deaf Studies
A critical introduction to Deaf community and culture as they relate to a social model of disability, to ethnicity, and to issues of diversity and inclusion. Discourse analysis of research and policy in education for Deaf students from early childhood and beyond.
Includes: Experiential Learning Activity
Also listed as DBST 3301.
Precludes additional credit for ALDS 3903A if taken in Winter term 2016 or Winter term 2018, and ALDS 4906A, if taken in Fall term 2016.
Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or enrolment in the Minor in Disability Studies.
Seminars three hours a week.

ALDS 3401 [0.5 credit]
Research and Theory in Academic Writing
Study of contemporary research and theory (1970s to present) on academic writing in elementary, secondary and post-secondary school, with emphasis on writing in university. Consideration of what academic writing entails, how writing fosters learning, and how instruction can help students develop their writing abilities.
Includes: Experiential Learning Activity
Also listed as ENGL 3908.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.
ALDS 3402 [0.5 credit]
Research and Theory in Workplace Writing
Study of contemporary research and theory (1980s to present) in writing in workplace settings. Consideration of how writing is used in accomplishing work, how novices learn to write effectively, and what the implications are for pedagogy.
Includes: Experiential Learning Activity
Also listed as ENGL 3909.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ALDS 3405 [0.5 credit]
Second Language Writing
Theory and practice of second language (L2) writing: how people learn to write in a second language, and how L2 writing courses for specific groups of learners can be designed.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 3414 [0.5 credit]
Introduction to Professional Writing and Editing
The fundamental skills of professional writing and editing, including writing for specific audiences, document design, revision strategies, copyediting.
Also listed as ENGL 3414.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week.

ALDS 3604 [0.5 credit]
Communication Disorders II
In-depth evaluation of current psycholinguistic models of processes underlying communication disorders and the biomedical support for such models. Emphasis on contrasting developmental disorders with acquired disorders. Additional exploration of other modalities (sign language, reading).
Also listed as LING 3604.
Prerequisites: ALDS 2604 or LING 2604.
Precludes additional credit for LING 3009 Section "A", if taken Winter 2013.
Prerequisite(s): ALDS 2604 or LING 2604.
Lectures three hours a week.

ALDS 3701 [0.5 credit]
Corpus Linguistics
Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.
Includes: Experiential Learning Activity
Also listed as LING 3701.
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 3705 [0.5 credit]
Adult Literacy
The extent and social contexts of restricted literacy in Canadian society; approaches to and debates surrounding the teaching and learning of adult literacy.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ALDS 3706 [0.5 credit]
Discourse Analysis
Principles of and studies in discourse analysis, including both conversational and textual/documentary analysis. The major focus is on language use in structuring social relationships.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 3900 [1.0 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Applied Linguistics and Discourse Studies.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

ALDS 3901 [0.5 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Applied Linguistics and Discourse Studies.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

ALDS 3903 [0.5 credit]
Special Topic in Applied Linguistics and Discourse Studies
Selected topics in Applied Linguistics and Discourse Studies not ordinarily treated in the regular course program.
Lectures three hours per week.

ALDS 4201 [0.5 credit]
Language Testing
The principles of test construction as applied to testing language proficiency, achievement and aptitude. Structural, notional, discrete point and integrative tests. Diagnostic assessment of language development, language disorders, and literacy. Students are expected to create, analyze and evaluate language tests.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.
ALDS 4203 [0.5 credit]
Methods and Practice in Language Pedagogy
Integrates theory and description of language learning and teaching with practical work in one of the languages offered by the School. Requires observation in a language classroom, along with practical work facilitating in-class or language lab activities, or developing teaching materials.
Includes: Experiential Learning Activity
Precludes additional credit for ALDS 3803 (no longer offered).
Prerequisite(s): permission of the language instructor for the language class in which practical work will be conducted; proficiency in the language in question, as determined by either completion of the prerequisites for 4010 of that language, or assessment by the language instructor; or permission of the School.
Seminars and in-class practicum.

ALDS 4206 [1.0 credit]
Practicum in Teaching ESL
Investigates the processes of classroom learning with observation and some teaching experience in ESL classes. Normally taken concurrently with ALDS 4305 and ALDS 4306.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, the BGInS Specialization in Teaching English in Global Contexts, or permission of the instructor.
Seminars and in-class practicum.

ALDS 4207 [0.5 credit]
ESL Literacy
The nature of everyday literacy and literacy skills. Analyzing the structure of everyday literacy texts and demands. Issues in literacy for second-language learners.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 4208 [0.5 credit]
Languages for Specific Purposes
An introduction to Languages for Specific Purposes - language instruction tailored to specific groups of learners, e.g. English for Science, for Business, for the Workplace, for Academic Purposes. Research and teaching methodology. Emphasis on EAP/ESP research and instruction at Carleton.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Also offered at the graduate level, with different requirements, as ALDS 5208, for which additional credit is precluded.
Lectures three hours a week.

ALDS 4209 [0.5 credit]
Teaching English as a Foreign Language: Methodology for Global Contexts
An introduction to the principles of teaching language in a foreign-language context; review of teaching approaches; practical examination, development and evaluation of instructional materials.
Includes: Experiential Learning Activity
Prerequisite(s): ALDS 4305 and fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, the BGInS Specialization in Teaching English in Global Contexts, or permission of the instructor.
Lectures three hours a week.

ALDS 4305 [0.5 credit]
Teaching English Language: Methodology I
Classification of classroom teaching methods and materials; adaptation of teaching materials for particular situations; creation of teaching materials; teaching techniques and strategies.
Includes: Experiential Learning Activity
Precludes additional credit for ALDS 4205.
Prerequisite(s): fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, or the BGInS Specialization in Teaching English in Global Contexts, or permission of the instructor.
Seminars four hours a week.

ALDS 4306 [0.5 credit]
Teaching English as a Second Language: Methodology II
Classification of classroom teaching methods and materials used in an international context; adaptation of teaching materials for particular situations; creation of teaching materials for global English language education; teaching techniques and strategies.
Includes: Experiential Learning Activity
Precludes additional credit for ALDS 4205.
Prerequisite(s): ALDS 4305 and fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, or permission of the instructor.
Seminars four hours a week.

ALDS 4308 [0.5 credit]
English for Specific Purposes
An introduction to English for Specific Purposes – English language instruction tailored to specific groups of learners (e.g., English for Academic Purposes, and English for a range of specific occupational and professional purposes). This course explores effective practices in course and materials design.
Prerequisite(s): third-year standing in the BGInS Honours Specialization in Teaching English in Global Contexts, or enrolment in the CTESL program, or permission of the instructor.
Seminars three hours a week.
ALDS 4403 [0.5 credit]
Writing and Knowledge-Making in the Disciplines
The role of writing in constructing knowledge in academic disciplines, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different disciplines shape their writing in distinctive ways and what implications this holds for pedagogy.
Includes: Experiential Learning Activity
Also listed as ENGL 4909.
Prerequisite(s): third-year standing.
Lectures three hours a week.

ALDS 4404 [0.5 credit]
Writing and Knowledge-Making in the Professions
The role of writing in constructing knowledge in the professions, as viewed from contemporary socio-cultural perspectives. How the goals, values, and assumptions of different professions shape their writing in distinctive ways and the implications for theory, research, and practice.
Includes: Experiential Learning Activity
Also listed as ENGL 4004.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week.

ALDS 4405 [0.5 credit]
Teaching Writing in School and the Workplace
Introduction to approaches for teaching writing in elementary and secondary school, in university, and in the workplace, with a focus on socio-cultural theories of language and learning. Discussion of applications of these approaches to classroom and workplace teaching.
Includes: Experiential Learning Activity
Also listed as ENGL 4515.
Prerequisite(s): third-year standing, or permission of the instructor.
Lectures three hours a week.

ALDS 4414 [0.5 credit]
Professional Writing I
The role of writing in government and NGOs. Consideration of various genres, practices and styles of government and NGO writing, including, grant proposals, administrative reports, press releases, briefing notes, recommendation reports.
Includes: Experiential Learning Activity
Also listed as ENGL 4414.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week. May include a work placement.

ALDS 4415 [0.5 credit]
Professional Writing II
The role of writing in science-related fields and in the health professions. Consideration of various genres, practices and styles of scientific and health-related writing, including, research reports, grant proposals, case reports, popularizations of science, press releases.
Includes: Experiential Learning Activity
Also listed as ENGL 4415.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week. May include a work placement.

ALDS 4602 [0.5 credit]
Second Language Acquisition
Current issues in second language acquisition; factors influencing success in acquiring a second or additional language, discourse and culture. Emphasis on theoretical concepts, empirical research, and practical implications for language teaching.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 4606 [0.5 credit]
Statistics for Language Research
Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.
Includes: Experiential Learning Activity
Also listed as LING 4606.
Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.
Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.
Also offered at the graduate level, with different requirements, as ALDS 5604 and LING 5606, for which additional credit is precluded.
Seminars three hours a week.

ALDS 4709 [0.5 credit]
Systemic-Functional Linguistics
Functions of language in the exchange of meanings between people in a wide variety of communicative situations. Semantic and syntactic resources at risk in these different contexts. Interactions between language and the social context.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or Linguistics, or Journalism, or Communication Studies, or permission of the instructor.
Also offered at the graduate level, with different requirements, as ALDS 5102, for which additional credit is precluded.
Lectures three hours a week.
ALDS 4801 [0.5 credit]
Major Structures of English
This course is intended to familiarize students with the structure of the English language, highlighting important contrasts between English and other languages as well as grammatical difficulties for ESL learners.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 4900 [1.0 credit]
Independent Study
Permits fourth-year Honours students to pursue their interests in a selected area of applied linguistics and discourse studies.
Prerequisite(s): permission of the instructor.

ALDS 4901 [0.5 credit]
Independent Study
Permits fourth-year Honours students to pursue their interests in a selected area of applied linguistics and discourse studies.
Prerequisite(s): permission of the instructor.

ALDS 4906 [0.5 credit]
Special Topic in Applied Linguistics and Discourse Studies
Selected topics in applied linguistics and discourse studies. Contents of this course vary from year to year.
Lectures three hours a week.

ALDS 4908 [1.0 credit]
Honours Project in Applied Linguistics and Discourse Studies
Individually designed intensive practicum or research experience. May involve (a) practicum or work study placement in writing or literacy studies, language syllabus design or test development; (b) intensive research activity in an area of Applied Linguistics and Discourse Studies. All projects include substantial written work.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in Applied Linguistics and Discourse Studies, a CGPA of 9.00 or better, or permission of the School.
Tutorial hours arranged.

Arabic (ARAB)

Arabic (ARAB) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

ARAB 1110 [1.0 credit]
Intensive First-Year Arabic
For students with no knowledge of Arabic. Oral skills, reading and writing. Compulsory attendance.
Eight hours a week (one term).

ARAB 2110 [1.0 credit]
Intensive Second-Year Arabic
Further study of Arabic to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Prerequisite(s): grade of C or higher in ARAB 1110 or permission of the School.
Eight hours a week (one term).

ARAB 3010 [0.5 credit]
Third-Year Arabic I
Further study of Arabic to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in ARAB 2110, or permission of the School.
Three hours a week.

ARAB 3015 [0.5 credit]
Arabic for Heritage Speakers
For students who have attained Arabic proficiency in an informal setting, this course provides an opportunity to build on their existing language skills and to develop them in a formal academic setting. The course will formalize grammar awareness and enhance Arabic literacy skills.
Precludes additional credit for 1000- and 2000-level Arabic courses, and for ARAB 3010.
Prerequisite(s): permission of the School.
Three hours a week.

ARAB 3020 [0.5 credit]
Third-Year Arabic II
Continuation of third-year Arabic to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in ARAB 3010 or ARAB 3015, or permission of the School.
Three hours a week.
Archaeology (ARCY)

Archaeology (ARCY) Courses

ARCY 1008 [0.5 credit]
Introduction to Archaeology I
Introduction to the history, theory and practice of field archaeology. Excavations from all time periods and global regions will be discussed. Focus will be placed on excavation methods and technology, including dating, that enhance understanding of sites both on land and underwater.
Also listed as CLCV 1008.
Precludes additional credit for CLCV 2300 (no longer offered).
Lecture three hours a week

ARCY 1009 [0.5 credit]
Introduction to Archaeology II
Continues the examination of various aspects of field archaeology begun in ARCY 1008 (also CLCV 1008). This course places greater focus on recent approaches to the interpretation of remains. These include environmental, cognitive and bioarchaeological approaches.
Also listed as CLCV 1009.
Precludes additional credit for CLCV 2300 (no longer offered).
Lecture three hours a week.

ARCY 3000 [0.5 credit]
Archaeological Field Work I
Students will participate for a minimum of three weeks on an archaeological field project (ie. excavation or survey). They will learn archaeological documentation and the analysis, recording, and processing of finds. The field project may be anywhere in the world and any time period.
Includes: Experiential Learning Activity
Prerequisite(s): ARCY 1008 and ARCY 1009 or CLCV 1008 and CLCV 1009 or CLCV 2300 (no longer offered) and permission of the unit. Permission of the unit is required to repeat this course.
Field work

ARCY 3301 [0.5 credit]
Field Work I: Greek and Roman World
Students will participate for a minimum of three weeks on an archaeological field project (ie. excavation or survey) relevant to the Greek and Roman world. They will learn archaeological documentation and the analysis, recording, and processing of finds.
Includes: Experiential Learning Activity
Also listed as CLCV 3301.
Prerequisite(s): ARCY 1008 and ARCY 1009 or CLCV 1008 and CLCV 1009 or CLCV 2300 (no longer offered) and permission of the unit. Permission of the unit is required to repeat this course.
Field work

ARCY 4000 [0.5 credit]
Field Work II: Greek and Roman World
Students participate for a minimum of three weeks in a position of responsibility (for example, as a trench supervisor or lab assistant) on an archaeological field project relevant to the Greek and Roman world.
Includes: Experiential Learning Activity
Also listed as CLCV 4000.
Prerequisite(s): 0.5 credit in fieldwork at third year level and permission of the unit. Permission of the unit is required to repeat this course.
Field work

ARCY 4100 [0.5 credit]
Archaeological Field Work II
Students participate for a minimum of three weeks in a position of responsibility on an archaeological field project (eg. trench supervisor or lab assistant). The field project may be anywhere in the world and any time period.
Includes: Experiential Learning Activity
Prerequisite(s): 0.5 credit in fieldwork at third year level and permission of the unit. Permission of the unit is required to repeat this course.
Field work

Architecture - Theory/History (ARCH)

Architecture - Theory/History (ARCH) Courses

ARCH 1000 [0.5 credit]
Introduction to Architecture
Architecture in the matrix of human conditions: linkages among architecture, fine arts, humanities, social sciences, physical sciences, mathematics and philosophy. Architectural ideas will be introduced through a discussion of cities, buildings and landscapes. (Core Course).
Lectures three hours a week.

ARCH 1005 [0.5 credit]
Contemporary Society
The relationship of architecture, architectural thought and the architectural profession to the societies in which they exist (and which they must serve). Topics are selected to emphasize key issues. ( Elective Course).
Lectures and seminars, three hours a week.

ARCH 1006 [0.5 credit]
Theory and History of Design
The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes. (Elective course).
Also listed as IDES 1000.
Lectures three hours a week.
ARCH 2101 [0.5 credit]

Industrial Design Analysis
Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment. (Elective course).
Includes: Experiential Learning Activity
Also listed as IDES 1001.
Prerequisite(s): ARCH 2006 or IDES 1000.
Lectures three hours a week.

ARCH 2300 [0.5 credit]
Introduction to Modern Architecture
Architectural and urban ideals of modernism with emphasis upon the development of the avant-garde in the early twentieth century. The phenomenon of modern architecture within the broader framework of the development of western thought. (Core Course).
Precludes additional credit for ARCH 3009.
Prerequisite(s): B.A.S. students require ARTH 1100 or ARTH 1200 and ARTH 1101 or ARTH 1201.
Lectures three hours a week.

ARCH 3208 [0.5 credit]
Urban Space Architecture
Design explorations that are directed towards the search for aesthetic form and meaning in urban space, with particular application to the Canadian context. Project-oriented. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCH 3902 [0.5 credit]
Theory of Architecture
Workshop focuses on one specific aspect of architecture in the area of theory and history. Workshop offerings change from year to year. (Workshop).
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCH 4002 [0.5 credit]

Canadian Architecture
Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques. (Theory/History Elective).
Includes: Experiential Learning Activity
Also listed as ARTH 3002.
Precludes additional credit for ARCH 3002.
Prerequisite(s): ARCH 2300 or permission of the School.
Lectures, seminars three hours a week.

ARCH 4004 [0.5 credit]

Architectural Theory
An exploration of architectural intentions in the early period of Western history, with special emphasis on Renaissance treatises and ideas. Architectural intentions in relation to shifting world-views as a basis of historical interpretation. (Theory/History Elective).
Precludes additional credit for ARCH 3007.
Lectures three hours a week.

ARCH 4006 [0.5 credit]
Origins of Modernism
Exploration of architectural theories with special emphasis on the European context from the seventeenth century to the late nineteenth century. (Theory/History Elective).
Precludes additional credit for ARCH 3008.
Prerequisite(s): ARCH 2300 or permission of the School.
Lectures three hours a week.

ARCH 4008 [0.5 credit]
Foundations of Modernism
Major critical perspectives as applied to architecture as a fine art. The debate between classicism and romanticism with consideration of its cultural roots. (Theory/History Elective).
Prerequisite(s): ARCH 2300 or permission of the School.
Lectures three hours a week.

ARCH 4009 [0.5 credit]

Theory of the Avant-Garde
Exploration of architectural theories with special emphasis on the development of the avant-garde in the early twentieth century, looking at the avant-garde within the larger framework of modernism. (Theory/History Elective).
Precludes additional credit for ARCH 3009.
Prerequisite(s): ARCH 2300 or permission of the School.
Lectures three hours a week.

ARCH 4105 [0.5 credit]

Theories of Landscape Design
Introduction to landscape architecture as the organization of outdoor space. Historical, cultural, economic and political factors as a basis for interpreting spatial organization in urban and rural areas of human settlement. Emphasis on the period from the fifteenth to the nineteenth century. (Theory/History Elective).
Prerequisite(s): second-year standing or above.
Lectures three hours a week.
ARCH 4200 [0.5 credit]
Architectural Conservation Philosophy and Ethics
Analysis of philosophical theories and related approaches to the material transformation of buildings. Micro-histories in architectural conservation theory and practice; overview of historical and contemporary concepts in architectural conservation. Preservation, restoration, rehabilitation, reconstruction, adaptive re-use, conservation anamnesis, diagnosis. Precludes additional credit for ARCH 3100 (no longer offered). Prerequisite(s): third-year standing B.A.S. or third-year status in B.Eng. (Architectural Conservation and Sustainability). Lectures three hours a week.

ARCH 4201 [0.5 credit]
History of Modern Housing
Study of housing as a function of social organization, demographics, market demand and public policy. Topics include the evolution of housing form, the role of the state, and the participation of architects in the housing marketplace in the 19th and 20th century. (Theory/History Elective). Prerequisite(s): third-year standing in the B.A.S. program or permission of the School. Lectures three hours a week.

ARCH 4204 [0.5 credit]
The Design Professions
Architecture and design professions in relation to traditional professions and to occupations in art and design. Professions in the development of culture and society; education, career and work; knowledge in the design professions; and the nature of design practice. (Elective Course). Also listed as SOCI 4204. Prerequisite(s): third-year standing in the B.A.S. program; fourth-year standing in Sociology; fourth-year standing in the B.A. Honours Architecture/Art History program; or permission of the School. Seminar three hours a week.

ARCH 4205 [0.5 credit]
User-Building Synopsis
Projects to develop skills in the analysis of building performance. Examination of occupancy analysis, safety and risk assessment, post-occupancy evaluation, and social impact assessment. (Workshop). Includes: Experiential Learning Activity Prerequisite(s): permission of the School. Lecture, seminar, lab or field work six hours a week.

ARCH 4206 [0.5 credit]
Recycling Architecture in Canada and Abroad
Concepts of mediating old and new architecture at the scale of the city through to the detail of the construction joint. Issues in sustainability and cultural identity illuminated by recycled architecture and adaptive reuse are explored through readings, drawings and case studies. (Theory/History Elective). Prerequisite(s): third-year standing in the B.A.S. program or by permission of the instructor or fourth-year standing in the B.Eng. Architectural Conservation and Sustainability program. Lectures three hours a week.

ARCH 4300 [0.5 credit]
Neo-Classical Architecture
18th - and 19th-century architecture and urban form in Western Europe. Emphasis on the cultural and philosophical framework of rising modernity to illuminate architectural production and theory as well as the development of urban form. (Theory/History Elective). Precludes additional credit for ARCH 1201 and ARCH 2200. Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week.

ARCH 4301 [0.5 credit]
Post-War Architecture
Theoretical, ideological and artistic debates that have influenced the development of world architecture since 1950. (Theory/History Elective). Also listed as ARTH 4604. Prerequisite(s): ARCH 2300 or ARTH 3609 or permission of the instructor. Lecture or seminar three hours per week.

ARCH 4302 [0.5 credit]
Pre-Columbian Architecture
Monumental temples of the ancient Mesoamericans are compared with other world traditions at similar levels of cultural development. Selected examples considered in terms of morphology, technology, iconography, social/political context, world view and general architectural theory. (Theory/History Elective). Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week.

ARCH 4303 [0.5 credit]
Greek Architecture
Architecture of Greek antiquity and its relationship to its philosophical, artistic, and mythical contexts. The development of the idea of the city; the presence of architecture within its symbolic landscape. (Theory/History Elective). Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
<th>Description</th>
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</thead>
</table>
| ARCH 4304   | 0.5     | **The Architecture of Rome**                                                                  | Rome in its classical to late-antique periods. Its founding mythologies and landscape. In-depth analysis of Rome, with special attention to its public buildings. Early Christian architecture within the Roman context. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week. |
| ARCH 4305   | 0.5     | **Medieval Architecture**                                                                     | Gothic architecture and its relation to its philosophic and artistic predecessors. Special attention to the coexistence of the monastic tradition, late Romanesque building, and new experiments in gothic during this period, marked by intellectual and political ferment. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week. |
| ARCH 4306   | 0.5     | **Renaissance Theory**                                                                        | The rise of architectural theory within the context of the Italian Renaissance. Canonic texts explored and compared in the context of the architectural developments of the period. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week. |
| ARCH 4307   | 0.5     | **Muslim Architecture**                                                                       | Historical and theoretical discussions about the architecture of Muslim cultures. Selected sites and monuments from eighth to eighteenth century, covering the vast geography from North Africa to Southeast Asia. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week. |
| ARCH 4308   | 0.5     | **Asian Architecture**                                                                        | Anthropological history of the architecture of the Near and Far East. The architecture and urban form of Ancient Egypt, Anatolia, Sumer and Persia; ancient China and India. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week. |
| ARCH 4309   | 0.5     | **Mesoamerican Architecture**                                                                 | Selected works of Mesoamerican architecture in terms of iconography, morphology, technology, function, historical development, and concept. Mesoamerican architectural features compared with other world traditions. Emphasis on design. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week. |
| ARCH 4400   | 0.5     | **Theory**                                                                                     | A survey of the architectural and urban history of a specific culture. These discussions address the present reality of a country, region or city being visited by the fourth year of the program. (Elective Course).  
Prerequisite(s): clear standing to fourth year and permission of the School. Lectures three hours a week. |
| ARCH 4502   | 0.5     | **Research and Criticism**                                                                    | Preparation for the independent research and design work. Work related to the nature of research and criticism in architecture, with emphasis on current issues. (Theory/History Elective).  
Includes: Experiential Learning Activity  
Lectures and seminars three hours a week. |
| ARCH 4505   | 0.5     | **Seminar in Theory and History**                                                              | History and theory of architecture. Topics will vary from year to year. Limited enrolment. (Elective Course).  
Prerequisite(s): fourth-year standing in the B.A.S. or B.A. (Honours) Architecture/Art History programs, or permission of the School. Lectures three hours a week. |
| ARCH 4801   | 0.5     | **Special Topics**                                                                             | An aspect of architecture in the area of theory and history. Topics vary from year to year. (Theory/History Elective).  
Prerequisite(s): ARCH 2300 or permission of the School. Lectures three hours a week. |
| ARCH 4808   | 0.5     | **Independent Study**                                                                          | (Elective Course). |
| ARCH 4900   | 0.5     | **Directed Reading**                                                                           | Supervised readings and research projects. Guidelines must be obtained from BAS Academic Advisors prior to registration. (Core course).  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in B.A.S (Philosophy and Criticism). |
| ARCH 4909   | 1.0     | **Honours Project**                                                                            | Students propose a topic of study in Philosophy and Criticism for approval and produce a substantial research project, supervised by BAS faculty. (Core course).  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in B.A.S (Philosophy and Criticism). |
Architecture - Technical (ARCC)

Architecture - Technical (ARCC) Courses

ARCC 1202 [0.5 credit]
History of Structures
A survey of the history, theory, and science of structures pertaining to buildings and civic works. Structural systems, construction techniques, materials and details, and the cultural factors involved in the synthesis of traditional structural design.
Includes: Experiential Learning Activity
Prerequisite(s): registration in B.A.S.
Lectures three hours a week, laboratory is block scheduled.

ARCC 2001 [0.5 credit]
Structures in Architecture
Survey of structural planning, including a historical survey of structural systems, details and the study of the factors involved in the synthesis of a suitable structural scheme. The course is intended as a survey of the science and the structural properties of materials. (Elective Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 1103.
Lectures three hours a week, laboratory is block scheduled.

ARCC 2202 [0.5 credit]
Architectural Technology 1
General introduction to materials and methods of construction with focus on wood and timber frame construction. Site conditions, foundations, structure and envelope design in terms of their response to local climate: sun (light and heat) wind, moisture. (Core course).
Prerequisite(s): permission of the School.
Lectures three hours a week.

ARCC 2203 [0.5 credit]
Architectural Technology 3
Wood frame, post and beam, steel and concrete systems and construction techniques. Structural systems and building envelope principles and practise are explored in conjunction with mechanical and electrical systems in smaller buildings. Emphasis on precedent, tradition and methodology of architectural detailing for construction.
Includes: Experiential Learning Activity
Prerequisite(s): ARCC 2202 and third-year standing for B.A.S. students and third-year standing for students in B.Eng. Architectural Conservation and Sustainability.
Lectures three hours a week.

ARCC 3004 [0.5 credit]
Workshop: Energy and Form
Relationship between environmental factors, energy and architectural form. Ways in which buildings and building elements can be planned and designed to take advantage of natural cycles in order to minimize the need for supportive energy inputs. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCC 3202 [0.5 credit]
Architectural Technology 4
Medium scale steel, concrete, and wood frame buildings as case studies to explore approaches to building science principles, building envelope design, advanced construction methods and materials, acoustics and sound control, and fire protection. Focus on sustainable design strategies and environment impact. (Core course).
Prerequisite(s): ARCC 2203 and third-year standing for B.A.S. students or ARCC 2203 and third-year standing for students in B.Eng. Architectural Conservation.
Lectures three hours a week.

ARCC 3305 [0.5 credit]
Materials Application
Application of building materials, including the forming of building parts and the design of joints for performance and assembly. Practical constructions using new technology are emphasized. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCC 3502 [0.5 credit]
Introduction to Architectural Conservation
Introduces conservation concepts to understand the values associated with existing buildings and landscapes. Through the analysis of sites and case studies, students will discuss the potentials and limitations of architectural conservation, as well as, testing its possibilities for sustainable retrofitting practices.
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 3501 (no longer offered).
Lectures three hours per week

ARCC 3902 [0.5 credit]
Architectural Technology
A specific aspect of architecture in the area of architectural technology. Offerings vary from year to year. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCC 4100 [0.5 credit]
Lighting for Architecture
A study of daylighting and/or lighting design techniques, with a focus on project-based learning. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): ARCC 2203 or permission of the School.
Lecture, seminar, workshop or field work six hours a week.
ARCC 4102 [0.5 credit]
Acoustics in Architecture
Sound in enclosures, including interior design of auditoria and special applications. Sound reproduction and reinforcement systems. Acoustic privacy and protection, sound control in buildings, materials for noise control, community noise, industrial noise. Acoustic measurements and instrumentation. (Elective Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 3002.
Lectures two hours, laboratory two hours a week.

ARCC 4103 [0.5 credit]
Energy and Form
Energy as a criterion in decision-making for architectural design. Conventional energy resources and state-of-the-art alternative energy resource systems with respect to building shape, size, materials, openings, orientation, siting, and use. (Elective Course).
Precludes additional credit for ARCC 3003.
Lectures three hours a week.

ARCC 4200 [0.5 credit]
Structural Morphology
Interdisciplinary study of structural and developmental morphology focusing on dynamic generative design processes, integrative systems, spatial modulations and fundamental generative principles of spatial form and structure as it relates to architecture. (Workshop).
Includes: Experiential Learning Activity
Lectures, seminar, workshop or field work six hours a week.

ARCC 4202 [0.5 credit]
Wood Engineering
Also listed as CIVE 4202.
Prerequisite(s): CIVE 2200, CIVE 2700.
Lectures three hours a week, problem analysis three hours alternate weeks.

ARCC 4207 [0.5 credit]
Advanced Building Assessment
In-depth study of the conventions, methods, and tools used in the assessment of buildings and their sites including traditional field survey, photogrammetry, laser scanning technologies, and hybrid representations. Includes: Experiential Learning Activity
Precludes additional credit for ARCC 4900 (no longer offered).
Prerequisite(s): enrolment in the BAS Conservation and Sustainability program and fourth-year standing.
Laboratories, lectures, field trips, six hours a week.

ARCC 4300 [0.5 credit]
Building Materials
Contemporary and traditional construction techniques and materiality are discussed within the framework of current practices, with emphasis on the analysis of material properties, structure and sustained performance, as well as their contribution to the adaptive reuse of existing and/or historical building. (Elective Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 3300.
Laboratories, lectures, field trips four hours a week.

ARCC 4400 [0.5 credit]
Design for Construction
Design in relation to materials and building construction including the effects of building codes, zoning bylaws, approvals, processes and legislation, the organization of the building industry, and cost estimating control. (Elective Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCC 3300 or permission of the School.
Lectures, seminars, field work three hours a week.

ARCC 4500 [0.5 credit]
Design Economics
Precludes additional credit for ARCC 3500.
Prerequisite(s): fourth-year standing in the B.A.S. program or permission of the School.
Three hours a week.

ARCC 4801 [0.5 credit]
Architectural Technology
A specific aspect of architecture in the area of architectural technology. Topics vary from year to year. (Elective Course).
Prerequisite(s): permission of the School.

ARCC 4808 [0.5 credit]
Independent Study
( Elective Course).

ARCC 4909 [1.0 credit]
Honours Project
Students propose a topic of study in Conservation & Sustainability for approval and produce a substantial research project, supervised by BAS faculty. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in BAS (Conservation and Sustainability).
Architecture - Urban (ARCU)

ARCU 2100 [0.5 credit]
Special Topics in Urbanism
Seminar in selected topics related to Urbanism at an introductory level. Lecture and discussion three hours per week.

ARCU 3100 [0.5 credit]
The Morphology of the City
Primary structural, spatial and formal organization and elements that characterize the morphology of cities; historical and contemporary significance for architecture and urban design. (Core).
Prerequisite(s): First-year standing in the B.A.S. Urbanism major, second or third-year standing in other B.A.S. majors, or permission of the School.
Lecture two hours a week and tutorial one hour a week.

ARCU 3203 [0.5 credit]
Landscape Architecture
Practical significance of landscape elements as they relate to built-form by integrating structure and site. (Workshop).
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCU 3405 [0.5 credit]
Urban Design
Project-based workshop investigating current design attitudes and solutions affecting the physical morphology of cities. Formally sophisticated urban design projects. Various procedures and basic urban design ideas. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCU 3409 [0.5 credit]
City Organization and Planning Processes
Interdisciplinary investigation, analysis and synthesis of the institutions, processes, environments and demography of Canadian cities. Guest lecturers. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCU 3902 [0.5 credit]
Urban Studies
A specific aspect of architecture in the area of urban studies. Topics vary from year to year. (Workshop).
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 4103.
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCU 4103 [0.5 credit]
Cities
Course addresses cities such as Istanbul, Mexico City, Venice, Paris, Ottawa, Mumbai, and New Orleans. Topics presented by the instructor and guests include environmental resilience and climate change; social justice and informal settlement; smart cities and data privacy; and urban design, memory, and imagination.
Precludes additional credit for ARCU 3902.
Prerequisite(s): Second-year standing or permission of the Instructor.
Lecture two hours per week and tutorial one hour per week.

ARCU 4300 [0.5 credit]
History of Theories of Urbanism
Theories of urbanism throughout history; emphasis on schools of post-WWII academic thought. The impact of Marxist theory, location and systems theory; the expanding array of models, tools and techniques that have contributed to various theorizations of urbanism.
Prerequisite(s): ARCU 3100.

ARCU 4400 [0.5 credit]
City Organization and Planning
Structure, form and functioning of cities. Infra-structure, facilities and networks, ecosystems, demographic and social organization, government, quality of life, goals and perceptions, urban management, development, regulation and codes, design, planning and policy-making. (Elective Course).
Precludes additional credit for ARCU 3400.
Three hours a week.

ARCU 4500 [0.5 credit]
Human Shelter
Background factors pertaining to housing in both industrial and developing countries; traditional and contemporary housing approaches; social housing; and people's right to adequate housing. Guest lecturers. (Elective Course).
Precludes additional credit for ARCU 3500.
Three hours a week.

ARCU 4600 [0.5 credit]
Post-WWII Urbanism
Urban renewal in the post-war period in response to housing shortages, suburbanization, transportation infrastructure and other factors. Gentrification and the emerging form of the post-industrial city, including new urbanism and sustainable communities. Case studies from Canada, Europe and the U.S. (Theory/History Elective).
Prerequisite(s): ARCU 3100 and third or fourth-year standing in the B.A.S. Urbanism program or permission of the School.
Lectures three hours a week.
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<tr>
<th>Course Code</th>
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<th>Focus</th>
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<tbody>
<tr>
<td>ARCU 4700</td>
<td>Urban Utopias</td>
<td>Urban utopias throughout history, with emphasis on the 20th century. Garden Cities, anti-urbanism and radical decentralization, the city in the region, Italian Rationalist cities, Le Corbusier and CIAM, post-WWII New Towns (England, Scandinavia and the US), Sustainable Urbanism. Prerequisite(s): third or fourth-year standing in B.A.S. Urbanism program or permission of the School. Lectures three hours a week.</td>
</tr>
<tr>
<td>ARCU 4801</td>
<td>Topics in Urbanism</td>
<td>Advanced seminar in selected topics related to urbanism. Topics may include histories and theories related to urban systems, design, and planning. (Core course). Prerequisite(s): third-year standing in B.A.S. (Urbanism) or permission of the Instructor. Seminar three hours per week.</td>
</tr>
<tr>
<td>ARCU 4808</td>
<td>Independent Study</td>
<td>(Elective Course). Includes: Experiential Learning Activity</td>
</tr>
<tr>
<td>ARCU 4901</td>
<td>Topics in Applied Urbanism</td>
<td>Advanced investigation into issues related to urbanism and urban form. Topics will vary from year to year. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in B.A.S. (Urbanism) or permission of Instructor. Lecture three hours per week.</td>
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**Architecture - Techniques (ARCN)**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ARCN 1005</td>
<td>Introduction to Drawing: Seeing Through the Hand</td>
<td>Fundamental concepts of line and line weight, light and shadow, perspective, contrast and composition. Exercises will include some mixed media and will introduce students to drawing as a way of translating ideas into images. Includes: Experiential Learning Activity One hour lecture and two hours drawing/discussion.</td>
</tr>
<tr>
<td>ARCN 2105</td>
<td>Digital Practice and Theory</td>
<td>Computer modeling as a medium of architectural analysis, documentation, and presentation. Principles and techniques of 2D drawing and 3D modeling. Extensive practical work using appropriate applications. (Core Course). Includes: Experiential Learning Activity Prerequisite(s): second-year B.A.S. standing or permission of the School. Lectures three hours a week.</td>
</tr>
<tr>
<td>ARCN 2106</td>
<td>Introduction to Multimedia</td>
<td>Analogue and digital systems and graphic processes used in the making of images. Fundamentals of still photography and videography combined with current computer technologies in the application of visual communication techniques. Includes: Experiential Learning Activity Precludes additional credit for IDES 2106. Lectures three hours a week, laboratory three hours a week.</td>
</tr>
<tr>
<td>ARCN 3003</td>
<td>Theatre Production</td>
<td>Design and fabrication of theatre productions, one of which is staged on campus. Visiting directors, designers, technical consultants and others. Visits to theatres and production facilities. (Workshop). Includes: Experiential Learning Activity Prerequisite(s): permission of the School. Lecture, seminar, lab or field work six hours a week.</td>
</tr>
<tr>
<td>ARCN 3206</td>
<td>Computer Applications</td>
<td>Application of existing software and programming techniques to various architectural problems. (Workshop). Includes: Experiential Learning Activity Prerequisite(s): permission of the School. Lecture, seminar, lab or field work six hours a week.</td>
</tr>
<tr>
<td>ARCN 3302</td>
<td>The Anatomy of Architecture</td>
<td>The architectural anatomy of selected contemporary buildings. Use of graphic techniques of analysis to develop an understanding of their basic compositional principles and language. (Workshop). Includes: Experiential Learning Activity Prerequisite(s): permission of the School. Lecture, seminar, lab or field work six hours a week.</td>
</tr>
<tr>
<td>ARCN 3400</td>
<td>Visual Design</td>
<td>Development of the capacity to visualize and communicate in several graphic media. Development of sensitivity to form, structure, space, texture and colour. May involve historical investigation. (Workshop). Includes: Experiential Learning Activity Prerequisite(s): permission of the School. Lecture, seminar, lab or field work six hours a week.</td>
</tr>
</tbody>
</table>
ARCN 3401 [0.5 credit]
Photography
Traditional and alternative techniques for image making and manipulation. Basic image formation techniques, advanced darkroom manipulations, past-darkroom imaging, and digital imaging within a theoretical overview of current photographic processes and techniques. (Workshop).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ARCN 4100 [0.5 credit]
Historic Site Recording and Assessment
Methods of heritage building documentation including hand recording, photography, rectified photography, total station, gps, photogrammetry, and laser scanning. Non-destructive testing techniques; environmental assessment tools for determining air quality and energy efficiency. Multidisciplinary teams for all project work.
Includes: Experiential Learning Activity
Also listed as CIVE 3207.
Precludes additional credit for ARCN 3100 (no longer offered).
Prerequisite(s): second-year standing in B.A.S. Conservation and Sustainability.
Lectures three hours a week, lab or field work two hours a week.

ARCN 4102 [0.5 credit]
Problems in Computing
Various types of non-numeric data, their representation within primary and secondary storage, and the manipulation of various representations. Comparative evaluation of languages for non-numeric problems. (Elective Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCN 3102.
Prerequisite(s): permission of the School.
Lectures two hours a week, laboratory two hours a week.

ARCN 4103 [0.5 credit]
Digital Fabrication and Theory
The changing relationship of architectural design and digital technology with a focus on 1:1 constructions using emerging computational software and fabrication techniques. (Workshop/Elective Course).
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lectures two hours a week, laboratory two hours a week.

ARCN 4200 [0.5 credit]
Building Pathology and Rehabilitation
Deterioration mechanisms for concrete, timber, steel and masonry structures. Identification of design deficiencies; criteria for selection and design of rehabilitation systems. Design techniques to reduce deterioration in new construction and historical structures.
Includes: Experiential Learning Activity
Also listed as CIVE 4601.
Prerequisite(s): ARCN 4100 and third-year standing in B.A.S. Conservation and Sustainability.
Lectures three hours a week, lab/field work two hours a week.

ARCN 4808 [0.5 credit]
Independent Study
(Elective Course).
Includes: Experiential Learning Activity

Architecture - Design Studios/Design Thesis/Research (ARCS)

Architecture - Studio (ARCS) Courses

ARCS 1005 [0.5 credit]
Drawing
Free-hand drawing as a way of observing and understanding the world. Various media and techniques introduced through a wide range of studio and outdoor exercises. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): registration in the B.A.S. program.
Six hours a week.

ARCS 1105 [1.0 credit]
Studio 1
Students from all BAS majors are introduced to the fundamentals of designing for the built environment using the conventions of varied modes of analog representation and physical making.(Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): registration in the B.A.S. program.
Studio eight hours per week.

ARCS 2105 [1.5 credit]
Studio 2
Supported by the core curriculum, focuses on small-scale building in a local context. Using analog methods, projects introduce the integration of basic structure and building systems while furthering fundamental concepts such as space, inhabitation, and materiality.(Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCS 1005 and ARCS 1105.
Twelve hours studio, plus one hour lecture per week.
ARCS 2106 [1.5 credit]
Studio 3
With a focus on small to medium scale building projects, projects consider analog and digital methods to advance consideration of site, program, and the materials as the means for shaping the built environment. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCS 1005 and ARCS 1105.
Twelve hours studio, plus one hour lecture per week.

ARCS 2302 [1.0 credit]
Conservation Studio 1
Conservation methodologies will be tested and studied through design exercises and historical research on existing architectures, cities and landscapes. The emphasis on the understanding and the relation with the setting will be essential.
Includes: Experiential Learning Activity
Prerequisite(s): ARCC 3502, ARCS 1005, ARCS 1105 and second-year standing in B.A.S. major Conservation and Sustainability or permission of the School.
Eight hours studio per week.

ARCS 2303 [1.0 credit]
Urbanism Studio 1: Fundamentals of Urbanism
Through readings, discussions and projects, students will examine a number of the forces that produce the built environment and explore a variety of approaches to documenting, representing, analyzing, organizing and controlling the growth, shape, density, and mix of uses associated with cities.
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 2303 (no longer offered), ARCU 3501 (no longer offered).
Prerequisite(s): ARCS 1005 and ARCS 1105, or permission of instructor.
Eight hours studio, plus one hour lecture per week.

ARCS 3105 [1.5 credit]
Studio 4
Supported by the core curriculum, focuses on a medium-scale building within a regional context. May include a small design-build. Projects further analog and digital methods. May introduce concepts like adaptive re-use while furthering the understanding of structure and building systems in a complex building. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCS 2105 and ARCS 2106.
Twelve hours studio, plus one hour lecture per week.

ARCS 3107 [1.0 credit]
Studio 5
The Directed Studies Abroad (DSA) studio considers large-scale, mixed-use buildings in an international context. Design projects advance analog and digital methods to explore broader cultural and social conditions within a complex site often in conjunction with a site visit abroad. (Core Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCS 3106 (no longer offered).
Prerequisite(s): ARCS 2105 and ARCS 2106.
Eight hours studio, plus one hour lecture per week.

ARCS 3301 [1.0 credit]
Conservation Studio 2
Historical building projects exploring architecture as a form of cultural expression. Consideration of site, program and materials. Introduction of conservation, sustainability and adaptive re-use principles, development standards, architectural codes, using case studies in Ottawa and elsewhere. Physical, digital drawings and models to explore designs. (Core).
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 3301 (no longer offered).
Prerequisite(s): ARCS 3301 and third-year standing in B.A.S. Conservation and Sustainability major or permission of the School.
Studio eight hours per week.

ARCS 3302 [1.0 credit]
Conservation Studio 3
The role of architecture in culture, stressing site and program with respect to their historic, social and ecological implications. Synthesis of issues, methods and techniques of the conservation and sustainability curriculum. (Core Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 3302 (no longer offered).
Prerequisite(s): ARCS 3301 and third-year standing in B.A.S. Conservation and Sustainability major or permission of the School.
Studio eight hours per week.
ARCS 3303 [1.0 credit]
Urbanism Studio 2: Urbanism in the Core
Intensification, revitalization, gentrification, brownfield redevelopment, sustainability, development standards, form-based codes, and the larger impact of migration on urban density. Through design, students explore the ramifications of practices, policies, pressures, processes and cultural preferences on the evolving form and function of the urban core.
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 3303 (no longer offered).
Prerequisite(s): ARCN 2105 and ARCS 2303, and third-year standing in B.A.S. Urbanism major or permission of the School.
Eight hours studio, plus one hour lecture per week.

ARCS 3304 [1.0 credit]
Urbanism Studio 3: Urbanism on the Periphery
Urbanization, sprawl, growth models, land consumption, containment strategies (smart growth, greenbelts, growth boundaries), edge cities, the Just City, Ecological Urbanism, and informal suburbanization in developed and developing countries. Through design, students explore the impact of practices, pressures, processes and cultural preferences on the expanding city.
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 3304 (no longer offered).
Prerequisite(s): ARCN 2105, ARCS 2303 and third-year standing in B.A.S. Urbanism major or permission of the School.
Eight hours studio, plus one hour lecture per week.

ARCS 4105 [1.5 credit]
Comprehensive Studio
Focussing on multi-unit housing, students from BAS majors collaborate to develop strategies for redevelopment of large urban sites. Engages urban design, site planning, programming, adaptive reuse, and community consultation. Students produce detailed designs for buildings, emphasizing building systems and envelope design. (Core Course).
Includes: Experiential Learning Activity
Prerequisite(s): ARCS 3105 and ARCS 3107, or ARCS 3303 and ARCS 3304.
Twelve hours studio, plus one hour lecture per week.

ARCS 4107 [1.0 credit]
Option Studio
Offers a range of topics for exploration. Students use analog and digital methods and techniques to culminate the undergraduate studio sequence while offering focused research-led investigation into key social, political, spatial issues. (Core Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCS 4106 (no longer offered).
Prerequisite(s): ARCS 3105 and ARCS 3107.
Eight hours studio, plus one hour lecture per week.

ARCS 4301 [1.5 credit]
Conservation Studio 4
Issues of program and site as the culturally defining aspects of sustainable architectural practice within complex urban and social situations, using difficult sites, historically significant buildings and/or locations and hybrid programs. projects brought to a high degree of formal and graphic resolution. (Core Course).
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 4301 (no longer offered).
Prerequisite(s): ARCS 3302 and fourth-year standing in B.A.S. Conservation and Sustainability major or permission of the School.
Twelve hours studio and one hour lecture per week.

ARCS 4302 [1.0 credit]
Conservation Studio 5
Conservation decision-making process and contemporary conservation concepts in the development of a design for the adaptive reuse, in Ottawa and elsewhere.
Consideration of sustainability aspects, site, program, and materials
Includes: Experiential Learning Activity
Precludes additional credit for ARCC 4302 (no longer offered).
Prerequisite(s): ARCS 4301 and fourth-year standing in B.A.S. Conservation and Sustainability major or permission of the School.
Studio eight hours per week.

ARCS 4303 [1.5 credit]
Urbanism Studio 4: Housing
Housing as it affects urban form. The design of multi-unit housing in a variety of forms and for a range of demographic groups. After thorough research of applicable codes and bylaws, students engage the design of housing at the site, building and detail level.
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 4303 (no longer offered).
Prerequisite(s): ARCS 3303 and ARCS 3304 and fourth-year standing in B.A.S. Urbanism major or permission of the School.
Studio twelve hours per week and one hour lecture.

ARCS 4304 [1.0 credit]
Urbanism Studio 5: Global Perspectives
Urbanization as a global phenomenon. Study of various forms of urbanization and de-urbanization in relation to economic, political and cultural forces. Through design, students explore the (trans)formation of settlements and communities outside of the North American context.
Includes: Experiential Learning Activity
Precludes additional credit for ARCU 4304 (no longer offered).
Prerequisite(s): ARCS 3303 and ARCS 3304 and fourth-year standing in B.A.S. Urbanism major or permission of the School.
Eight hours studio, plus one hour lecture per week.
Art and Architectural History (ARTH)

ARTH 1100 [0.5 credit]
Art and Society: Prehistory to the Renaissance
A survey of art, architecture and artifacts from prehistory to the Renaissance. Ways of understanding visual culture through this span of history.
Precludes additional credit for ARTH 1000.
Lectures two hours a week, tutorial one hour a week.

ARTH 1101 [0.5 credit]
Art and Society: Renaissance to the Present
A survey of art, architecture and related visual forms in their expanding contexts from the Renaissance to the present. Ways of understanding visual culture through this span of history.
Precludes additional credit for ARTH 1000.
Lectures two hours a week, tutorial one hour a week.

ARTH 1105 [0.5 credit]
Art as Visual Communication
A variety of visual material is organized topically to examine the elements of art (line, shape, value, colour, texture, space), the principles of pictorial organization, the materials and techniques of art, and recurrent tendencies in artistic styles and outlooks.
Lectures three hours a week.

ARTH 1200 [0.5 credit]
History and Theory of Architecture: Prehistory to 1500
An introduction to the history of architecture from prehistory to ca. 1500, considering technological, formal, intellectual and social developments that informed the built environment through a range of building types.
Lectures two hours a week, tutorial one hour a week.

ARTH 1201 [0.5 credit]
History and Theory of Architecture: 1500 to Present
An introduction to the history of architecture from ca. 1500 to the present, considering technological, formal, intellectual, and social developments that informed the built environment through a range of building types.
Precludes additional credit for ARTH 2608 (no longer offered).
Lectures two hours a week, tutorial one hour a week.

ARTH 2002 [0.5 credit]
Canadian Historical Art
A survey of historical Canadian art, from the period of European settlement to the early twentieth century, examining craft and fine art, amateur and professional artists, art institutions, gender, nationalism, regionalism and ethnicity. Students will be exposed to works in the National Capital region.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2003 [0.5 credit]
Canadian Twentieth-Century and Contemporary Art
A survey of twentieth-century and contemporary Canadian art in a variety of media within social, political and cultural contexts. Regionalism, multiculturalism, nationalism, gender, race and identity will be considered in relation to local and national collections in Ottawa.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2005 [0.5 credit]
Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
Introduction to the visual arts of Indigenous peoples of the eastern and central regions of North America. A post-colonial perspective will be used to consider selected examples of creative production from time immemorial to the present.
Prerequisite(s): second-year standing or permission of the discipline.
Lectures three hours a week.

ARTH 2006 [0.5 credit]
Arts of the First Peoples: The Southwest, the West Coast and the Arctic
Introduction to the visual arts of Indigenous peoples of the western and northern regions of North America. A post-colonial perspective will be used to consider selected examples of visual materials from time immemorial to the present.
Prerequisite(s): second-year standing or permission of the discipline.
Lectures three hours a week.

ARTH 2007 [0.5 credit]
Asian Art
Surveys Asian art from second-century China to post-war Japan. Representational strategies of court artists and artists from the capital are compared with artists on the periphery. Articulation of power in tombs, palaces and war propaganda is examined, as is the individual and the eccentric.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.

ARTH 2008 [0.5 credit]
Inuit Art
Survey of visual art produced by Canadian Inuit from the circumpolar area.
Precludes additional credit for ARTH 3104.
Prerequisite(s): second-year standing or permission of the Discipline.
Lectures three hours a week.
ARTH 2009 [0.5 credit]
Art Live: Art History Workshop
Examination of techniques, materials and institutions of art history; lectures and workshops on art historical research and writing, the materials of art, professional skills; site visits to art institutions. Includes: Experiential Learning Activity
Prerequisite(s): ARTH 1100 and ARTH 1101, or permission of the discipline. Restricted to students enrolled in the Art History B.A. or B.A. Honours. Lecture three hours a week.

ARTH 2102 [0.5 credit]
Greek Art and Archaeology
The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts are studied. Also listed as CLCV 2303. Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered). Prerequisite(s): second-year standing or permission of the Department. Lecture three hours a week.

ARTH 2105 [0.5 credit]
Roman Art and Archaeology
The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied. Also listed as CLCV 2304. Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered). Prerequisite(s): second-year standing or permission of the Department. Lecture three hours a week.

ARTH 2106 [0.5 credit]
Chinese Art and Visual Culture
A survey of Chinese art from the pre-modern era to recent-inventions of traditions in modern and contemporary art. Artworks in various media (ink painting, calligraphy, Buddhist sculpture, ceramics, lacquer and garden architecture) will be studied in their historical, cultural and socio-political contexts. Prerequisite(s): second-year standing or permission of the Department. Lecture three hours a week.

ARTH 2107 [0.5 credit]
Islamic Architecture and Art
Survey of artistic movements in Islamic art and architecture in the Mediterranean, the Near East, and Central and South Asia, from the seventh century to ca. 1450. Commonalities and differences between major dynastic visual cultures will be explored. Prerequisite(s): second-year standing or permission of the Discipline. Lecture three hours a week.

ARTH 2108 [0.5 credit]
Art Worlds
Survey of an area of global art history. Topics may vary from year to year, and will be posted on the School for Studies in Art and Culture website. Prerequisite(s): second-year standing or permission of the Department. Lecture three hours a week.

ARTH 2202 [0.5 credit]
Medieval Architecture and Art
A survey of architecture and art in Europe from ca. 313-1500 C.E. Sacred, secular, and domestic works will be discussed with reference to cultural meaning, social function, structure, and form. Precludes additional credit for ARTH 2200 and ARTH 2201. Prerequisite(s): second-year standing or permission of the Discipline. Lectures three hours a week.

ARTH 2300 [0.5 credit]
Italian Renaissance Art
An examination of major works of art and architecture, issues and themes in the Italian Renaissance; emphasis on the fifteenth and sixteenth centuries, with a look at roots in the fourteenth. Prerequisite(s): second-year standing or permission of the Discipline. Lectures three hours a week.

ARTH 2310 [0.5 credit]
Architecture of the Early Modern World [1400-1750]
An examination of architecture from the late medieval period to the 18th century with particular attention paid to architecture and design cultures within the European and Islamic worlds and their cross-cultural interactions. Precludes additional credit for ARTH 3305 (no longer offered). Prerequisite(s): second-year standing or permission of the Discipline. Lectures three hours a week.

ARTH 2404 [0.5 credit]
Art of the 17th and 18th Centuries
Tracing developments in 17th- and 18th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and society. Precludes additional credit for ARTH 2403 (no longer offered), ARTH 2405 (no longer offered) and ARTH 2406 (no longer offered). Prerequisite(s): second-year standing or permission of the Discipline. Lectures three hours a week.
ARTH 2502 [0.5 credit]  
Art of the 19th Century  
Tracing developments in 19th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and modernity.  
Prerequisite(s): second-year standing or permission of the Discipline.  
Lectures three hours a week.

ARTH 2510 [0.5 credit]  
Architecture of the 18th and 19th Centuries  
A survey of key monuments, theories, forms and technological developments of eighteenth- and nineteenth-century architecture.  
Precludes additional credit for ARTH 3809 Section "B" taken in 2014.  
Prerequisite(s): second-year standing or permission of the Discipline.  
Lectures three hours a week.

ARTH 2600 [0.5 credit]  
Modern European Art 1900-1945  
Major artistic movements in Europe from about 1900 to 1945.  
Prerequisite(s): second-year standing or permission of the Discipline.  
Lectures three hours a week.

ARTH 2601 [0.5 credit]  
History and Theory of Photography  
Issues, themes, movements in photography and individual photographers from the origins of the medium to the present.  
Prerequisite(s): second-year standing or permission of the Discipline.  
Lectures three hours a week.

ARTH 2610 [0.5 credit]  
Twentieth-Century Architecture  
Developments in architectural form and culture through the course of the twentieth century, with emphasis on the formation and subsequent critique of the Modern Movement.  
Precludes additional credit for ARTH 3609 and ARCH 3009.  
Prerequisite(s): second-year standing or permission of the Discipline.  
Lectures three hours a week.

ARTH 2710 [0.5 credit]  
Experiencing Architecture  
Development of critical thinking, writing, and looking skills in connection to architecture, through a combination of site visits, workshops and classroom exercises.  
Includes: Experiential Learning Activity  
Prerequisite(s): ARTH 1200 and ARTH 1201 or permission of the discipline. Restricted to students in the History and Theory of Architecture B.A. or B.A. Honours program.  
Lecture three hours a week.

ARTH 2807 [0.5 credit]  
Philosophy of Art  
Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences.  
Also listed as PHIL 2807.  
Lectures three hours a week.

ARTH 3000 [0.5 credit]  
Themes in Canadian Art  
Selected aspects of Canadian art in a variety of media. Students will be exposed to works in the National Capital region.  
Prerequisite(s): ARTH 2002 or ARTH 2003 or (for a photography topic) ARTH 2601 and second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

ARTH 3002 [0.5 credit]  
Canadian Architecture  
Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques.  
Includes: Experiential Learning Activity  
Also listed as ARCH 4002.  
Prerequisite(s): ARTH 1100 and ARTH 1101, or ARTH 1200 and ARTH 1201, or ARCH 1002 and ARCH 1201, and second-year standing or higher, or permission of the Discipline.

ARTH 3003 [0.5 credit]  
Architecture and Representation  
Examination of the intersections between architecture, representations, and cultures.  
Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing, or permission of the Discipline.  
Lectures and/or seminars three hours a week.

ARTH 3005 [0.5 credit]  
American Architecture  
The cultural history of the United States as expressed through its architectural heritage. Selected buildings and complexes from the earliest settlements through the early twentieth century are examined.  
Prerequisite(s): ARTH 1201 and second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

ARTH 3007 [0.5 credit]  
Modern Asian Art  
Modern and contemporary art in East Asia, beginning in Japan with the 1868 Meiji revolution and the 1911 revolution in China.  
Prerequisite(s): second-year standing or higher, or permission of the Discipline.
**ARTH 3008 [0.5 credit]**  
**Contemporary Chinese Art and Art History**  
Modern and contemporary art in China and beyond from the reform period in 1979 until today. Artworks will be examined in terms of their (art-)historical, discursive, socio-political, infrastructural and transcultural conditions of production and reception.  
Prerequisite(s): second-year standing or permission of the Discipline.  
Lectures three hours a week.

**ARTH 3100 [0.5 credit]**  
**History and Methods of Art and Architectural History**  
The study of the history of art and architectural history and the methodologies and research tools employed.  
Precludes additional credit for ARTH 3106 (no longer offered).  
Prerequisite(s): third-year or higher standing in Art History or History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

**ARTH 3102 [0.5 credit]**  
**Studies in Greek Art**  
A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year. This course is repeatable for credit when the topic changes.  
Also listed as CLCV 3306, RELI 3732.  
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.  
Lecture three hours a week.

**ARTH 3105 [0.5 credit]**  
**Studies in Roman Art**  
A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.  
Also listed as CLCV 3307, RELI 3733.  
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.  
Lecture three hours a week.

**ARTH 3107 [0.5 credit]**  
**History and Methods of Architectural History**  
The study of the methodologies and research approaches employed by architectural historians.  
Prerequisite(s): ARTH 3100 and third-year standing or higher in History and Theory of Architecture, or permission of the Discipline.  
Seminar three hours a week.

**ARTH 3108 [0.5 credit]**  
**History and Methods of Art History**  
The study of current methodologies and research tools employed by art historians.  
Precludes additional credit for ARTH 3106 (no longer offered).  
Prerequisite(s): ARTH 3100 and third-year standing or higher in Art History, or permission of the Discipline.  
Seminar three hours a week.

**ARTH 3400 [0.5 credit]**  
**History of Printmaking**  
Exploration of printmaking techniques from the 16th century to the present focusing on the work of famous and lesser-known printmakers. Topics may include: printmaking genres (from fine art prints to caricature), originality versus reproduction, book illustration, the art market, posters and propaganda.  
Includes: Experiential Learning Activity  
Prerequisite(s): second-year standing or higher, or permission of the Discipline.  
Lectures and/or seminars three hours a week.

**ARTH 3507 [0.5 credit]**  
**The Artist in Context**  
An examination of one artist's or group of artists' life and work. Relevant artistic, intellectual, social, political and theoretical contexts are considered.  
Prerequisite(s): ARTH 1101 or ARTH 2502 and second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

**ARTH 3600 [0.5 credit]**  
**Art Since 1945**  
Contemporary art in the global context from 1945 to the present, including Abstract Expressionism, Pop Art, Postmodernism, object art, performance art and installations.  
Prerequisite(s): second-year standing or higher, or permission of the Discipline.  
Lecture three hours a week.

**ARTH 3701 [0.5 credit]**  
**Art and Architecture on Site**  
The study of art and/or architecture on site outside the National Capital Region, in Canada or internationally. May include a combination of study in Ottawa and on site. Locations vary. Students are expected to bear all travel and other costs arising from site visits.  
Includes: Experiential Learning Activity  
Prerequisite(s): permission of the Discipline. Applicants will normally have third-year standing with a minimum of 1.0 credit in Art History or History and Theory of Architecture and a GPA of 8.0 or above.  
Hours to be arranged. Locations will vary.

**ARTH 3705 [0.5 credit]**  
**Selected Museum Exhibition**  
This seminar complements a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.  
Includes: Experiential Learning Activity  
Prerequisite(s): second-year standing or higher or permission of the Discipline.  
Seminar and/or lectures three hours a week.
ARTh 3710 [0.5 credit]
Architecture and Empire
The impact of imperial power and aspiration on the built environment, from the Ancient world to the present day, taking ‘empire’ in its broadest political, social and economic sense.
Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.
Seminar and/or lectures three hours a week.

ARTh 3809 [0.5 credit]
A Closer Look at Art and Visual Culture
Selected aspects of art history and visual culture from ancient times to the present.
Prerequisite(s): third-year standing or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTh 3810 [0.5 credit]
A Closer Look at the Designed Environment
Selected aspects of the history of the designed environment, from ancient times to the present.
Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.
Lectures and/or seminars three hours a week.

ARTh 3900 [0.5 credit]
Practicum in Art and Architectural History
Practical experience gained by working on specific projects under the supervision of the staff of a museum, cultural institution, public- or private-sector organization associated with art, architecture, design, or heritage. A maximum of 1.0 credit in practicum courses may be used to fulfill program requirements.
Includes: Experiential Learning Activity
Prerequisite(s): B.A. or B.A. (Honours) in Art History or History and Theory of Architecture with third-year standing or higher and a CGPA of 9.00 or better in ARTH courses, and permission of the Discipline.

ARTh 4000 [0.5 credit]
Topics in Canadian Art
Selected topics in Canadian art. Students will be exposed to works in the collections of the National Capital region.
Prerequisite(s): one of ARTH 2002, ARTH 2003, ARTH 3000 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminars three hours a week.

ARTh 4003 [0.5 credit]
Topics in Contemporary Chinese Art
Critical examination of contemporary Chinese art. Topics include socially engaged art, historiographies of Chinese contemporary art, re-inventions of traditions, gender and politics of the body, exhibition histories and infrastructures of contemporary art in China.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4005 [0.5 credit]
Topics in Contemporary Indigenous Art
This course will use critical theory to examine aspects of contemporary visual art created by the Inuit and First Peoples in North America.
Prerequisite(s): ARTH 2005 or ARTH 2006 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4007 [0.5 credit]
Topics in Asian Art
A selected topic in East Asian Art, which may include 19th century Ukiyo-e woodblock prints, The Gutai Group, performance art in China and Japan, and contemporary Chinese art.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4008 [0.5 credit]
Transnational Theory
Critical examination of transnational theories of cultural analysis, including Orientalism, Post-Colonial theory, translation theory and theories of cultural hybridity.
Precludes additional credit for ARTH 3103.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4107 [0.5 credit]
Topics in Islamic Architecture and Art
Selected aspects of Islamic Architecture and Art.
Prerequisite(s): ARTH 2107 or ARTH 2310 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTh 4202 [0.5 credit]
Topics in Medieval Architecture and Art
Selected aspects of Medieval or Medievalist Architecture and Art.
Prerequisite(s): ARTH 2202 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.
ARTH 4305 [0.5 credit]
Topics in Renaissance Art
Selected aspects of Renaissance art and society.
Prerequisite(s): ARTH 2300 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4402 [0.5 credit]
Topics in Art of the 18th and 19th Centuries
Selected aspects of 18th-century and/or 19th-century art.
Precludes additional credit for ARTH 4406 (no longer offered), ARTH 4505 (no longer offered).
Prerequisite(s): ARTH 2404 or ARTH 2405 or ARTH 2406 or ARTH 2502 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4600 [0.5 credit]
Art, Architecture, and Gender
Art and/or architectural creation, reception and/or historiography through the lens of gender identities.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4602 [0.5 credit]
Issues in the Theory and History of Photography
Relates the themes of selected theoretical texts on photography to specific examples of photographic practice.
Prerequisite(s): ARTH 2601 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4610 [0.5 credit]
Topics in Modern Architecture or Design
Selected topics in architecture and design of the Modern era.
Prerequisite(s): ARTH 2610 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4701 [0.5 credit]
Art and Architecture on Site
Intensive study of art and/or architecture on site outside the National Capital region, in Canada or internationally. May include a combination of study in Ottawa and on site. Students are expected to bear all travel and other costs arising from site visits.
Includes: Experiential Learning Activity
Prerequisite(s): Permission of the Discipline. Applicants will normally have fourth-year standing in Art History or History and Theory of Architecture and a CGPA of 8.0 or above.
Hours to be arranged. Locations vary.

ARTH 4705 [0.5 credit]
Seminar: Selected Museum Exhibition
Studies a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.
Lectures and/or seminar three hours a week.

ARTH 4800 [0.5 credit]
Topics in Architectural History
Selected aspects of architectural history from ancient times to the present.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4809 [0.5 credit]
Topics in Art History and Criticism
Selected aspects of art history and/or criticism from ancient times to the present.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4900 [0.5 credit]
Directed Readings and Research
Supervised readings and research projects. Guidelines must be obtained from the Undergraduate Supervisor prior to registration. A written project outline, approved by the supervising Art History or History and Theory of Architecture faculty member, must be submitted by the last day for course changes.
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.

ARTH 4909 [1.0 credit]
Honours Research Essay
An essay of approximately 10,000 words, resulting from independent research, supervised by Art History or History and Theory of Architecture faculty.
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture with a minimum CGPA of 9.00 and permission of the Discipline.
Biochemistry (BIOC) Courses

BIOC 2200 [0.5 credit]
Cellular Biochemistry
Cellular functions and their interrelationships. Introduction to thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.
Includes: Experiential Learning Activity
Also listed as BIOL 2200.
Precludes additional credit for BIOL 2201.
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), (CHEM 1006 or CHEM 1002) or permission of the Institute. It is strongly recommended that students in Biochemistry programs take this course in their second year of study.
Lectures three hours a week, laboratory or tutorial four hours a week.

BIOC 2300 [0.5 credit]
Physical Biochemistry
Energy of biological systems, molecular interactions, diffusion principles, introduction to protein folding, structure and thermodynamics, ligand binding and nucleic acid structures; experimental design and data management.
Precludes additional credit for CHEM 2103.
Prerequisite(s): BIOC 2200 (can be taken concurrently with BIOC 2300) and MATH 1007 and MATH 1107, and (PHYS 1007 and PHYS 1008) or (PHYS 1003 and PHYS 1004).
Lectures three hours a week, tutorials three hours a week.

BIOC 2400 [0.5 credit]
Independent Research I
Students carry out a laboratory research project under the supervision of a faculty member from the Institute of Biochemistry. A research report must be submitted by the last day of classes for evaluation by the Director and Faculty supervisor.
Includes: Experiential Learning Activity
Precludes additional credit for BIOC 3006 (no longer offered).
Prerequisite(s): (BIOC 2200 or BIOL 2200) and CHEM 2204 and (BIOC 2300 or CHEM 2103) are also recommended.
It is highly recommended that BIOC 3101 and BIOC 3202 be taken concurrently.
Laboratory research for at least three hours a week over two terms.

BIOC 3008 [0.5 credit]
Bioinformatics
A practical exploration in the application of information technology to biochemistry and molecular biology. Insight into biological knowledge discovery via molecular structure and function prediction, comparative genomics and biological information management.
Includes: Experiential Learning Activity
Also listed as BIOL 3008 and COMP 3308.
Prerequisite(s): BIOC 2200 or BIOL 2200; or permission of the Institute.
Lecture two hours a week, computer workshop three hours a week.

BIOC 3101 [0.5 credit]
General Biochemistry I
Chemistry, structure and function of proteins, lipids, carbohydrates and nucleic acids. Monomers, linkages and types of biochemical polymers that are formed. Mechanism of action of enzymes, regulatory control mechanisms of proteins and integration of biochemical pathways.
Precludes additional credit for CHEM 3401.
Prerequisite(s): (BIOC 2200 or BIOL 2200), and (CHEM 2203 and CHEM 2204) or (CHEM 2207 and CHEM 2208) or permission of the Institute.
Lectures three hours a week.

BIOC 3102 [0.5 credit]
General Biochemistry II
Prerequisite(s): BIOC 3101 and BIOL 2104.
Lectures three hours a week.

BIOC 3103 [0.5 credit]
Practical Biochemistry I
Introduction to experimental biochemistry and the theory and concepts dealt with in BIOC 3101, and BIOC 3202. Includes: Experiential Learning Activity
Precludes additional credit for BIOC 3006 (no longer offered).
Prerequisite(s): (BIOC 2200 or BIOL 2200) and CHEM 2203 or permission of the Institute. CHEM 2204 and (BIOC 2300 or CHEM 2103) are also recommended.
Laboratory four hours a week, tutorial one hour per week.
BIOC 3104 [0.5 credit]
Practical Biochemistry II
Introduction to experimental biochemistry and the theory and concepts dealt with in BIOC 3101, BIOC 3102, and BIOC 3202.
Includes: Experiential Learning Activity
Precludes additional credit for BIOC 3006 (no longer offered).
Prerequisite(s): BIOC 3103. It is highly recommended that BIOC 3102 be taken concurrently.
Laboratory four hours a week, tutorial one hour a week.

BIOC 3202 [0.5 credit]
Biophysical Techniques and Applications
Theory and applications of current biochemical/biophysical instrumentation and techniques including biophysical spectroscopy, molecular structure determination, calorimetry, and mass spectrometry.
Precludes additional credit for BIOC 4002.
Prerequisite(s): BIOC 2200 or permission of the Institute.
Lectures three hours a week.

BIOC 3303 [0.5 credit]
Biochemical Pharmacology
Biochemical principles of pharmacology, including receptor mechanisms, signal transduction, pharmacokinetics, and pharmacodynamics. Genome-wide association studies, pharmacogenomics, and personalized medicine will also be included.
Prerequisite(s): BIOC 2200 or BIOL 2200, or permission of the Institute.
Lectures three hours a week.

BIOC 3400 [0.5 credit]
Independent Research II
Students carry out a laboratory research project under the supervision of faculty member from the Institute of Biochemistry. A research report must be submitted by the last day of classes for evaluation by the Director and Faculty supervisor.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to Honours students of third-year standing in a Biochemistry program with a GPA of 10.0 or higher in second year, and approval of the Director and Faculty supervisor.
Laboratory research for at least three hours a week over two terms.

BIOC 3999 [0.0 credit]
Co-operative Work Term
Practical experience for students enrolled in the co-operative option. Students must receive a satisfactory evaluation from their work term employer; and present a written report describing their work term project. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Biochemistry co-operative option and permission of the Institute.

BIOC 4001 [0.5 credit]
Methods in Biochemistry
Principles and applications of modern biochemical methodology, including ultracentrifugation, electrophoresis, ELISA, EMSA, experimental planning, ligand binding kinetics, fluorescence spectroscopy, affinity purification, and in vitro translation.
Includes: Experiential Learning Activity
Prerequisite(s): BIOC 3103 and BIOC 3104 or permission of the Institute.
Lectures and discussion two hours, laboratory four hours a week.

BIOC 4004 [0.5 credit]
Industrial Biochemistry
The application of biochemistry to the production of biological compounds useful in nutrition, medicine, and the food and chemical industries. General strategies for efficient production of these compounds by controlling the activities of living cells or enzymes.
Prerequisite(s): BIOC 3101 and BIOC 3102 (BIOC 3102 may be taken concurrently), or permission of the Institute. Lecture three hours a week.

BIOC 4005 [0.5 credit]
Biochemical Regulation
Regulation at the transcriptional, translational and metabolic level; regulation of cell and subcellular organelle function and other timely topics may be included.
Prerequisite(s): BIOC 3101 and BIOC 3102.
Lectures three hours a week.

BIOC 4007 [0.5 credit]
Membrane Biochemistry
Biochemical and biophysical aspects of biomembrane structure and function. Topics may include: membrane lipids and proteins, lipid polymorphism, model membranes, liposomes, membrane biogenesis, the membrane cytoskeleton, membrane trafficking, membrane fusion, exocytosis and signal transduction across membranes.
Prerequisite(s): BIOL 2200 or BIOC 2200, or BIOC 3101 (which may be taken concurrently with BIOC 4007), or permission of the Institute.
Lectures two hours a week and workshop two hours a week.

BIOC 4008 [0.5 credit]
Computational Systems Biology
Modeling and simulation of metabolic and regulatory networks towards understanding complex and highly dynamic cellular systems. Biotechnological applications include metabolic engineering, synthetic biology, and drug discovery.
Includes: Experiential Learning Activity
Also listed as COMP 4308.
Prerequisite(s): BIOC 3101 or permission of the Institute.
Lecture one and a half hours per week, workshop one and a half hours per week.
BIOC 4009 [0.5 credit]
Biochemistry of Disease
The biochemical basis of disease including genetic and metabolic disorders such as cancer, neurological degenerative conditions, diabetes, stroke and microbial infections.
Prerequisite(s): BIOC 3101 and BIOC 3102, or permission of the Institute.
Lectures three hours a week.

BIOC 4200 [0.5 credit]
Immunology
The organization and function of the immune system, including the anatomy of the immune system, the properties and behaviour of cells of the immune system, and the molecular and genetic bases of the immune response.
Also listed as BIOL 4200.
Prerequisite(s): BIOL 3201 or permission of the Institute.
Lectures three hours a week.

BIOC 4201 [0.5 credit]
Advanced Cell Culture and Tissue Engineering
Theory and application of current techniques and developments in cell culture as applied to research questions in the field of stem cells and tissue engineering.
Includes: Experiential Learning Activity
Also listed as BIOL 4201.
Prerequisite(s): BIOL 3201 or permission of the Institute.
Laboratory four hours per week, tutorial one hour a week.

BIOC 4202 [0.5 credit]
Mutagenesis and DNA Repair
A mechanistic study of mutagenesis and DNA repair.
Topics include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the development of genetic disease and cancer.
Also listed as BIOL 4202.
Prerequisite(s): BIOL 3104 and BIOL 2200/BIOC 2200, or permission of the Institute.
Lectures and tutorial three hours a week.

BIOC 4203 [0.5 credit]
Advanced Metabolism
Structure, biochemical derivation and function of secondary metabolites such as toxins and antibiotics.
Examples from plant, fungal and animal systems.
Prerequisite(s): BIOC 3101 and BIOC 3102, or permission of the Institute.
Lectures three hours a week.

BIOC 4204 [0.5 credit]
Protein Biotechnology
An advanced lecture, discussion and seminar course covering the theory, development and current techniques of protein and enzyme engineering. Topics to be discussed may also include applications in biotechnology, nanotechnology and new frontiers in basic and applied research.
Precludes additional credit for BIOC 4002.
Prerequisite(s): BIOC 3101 and BIOC 3202 (may be taken concurrently), or permission of the Institute.
Lectures two hours a week, workshop two hours a week.

BIOC 4708 [0.5 credit]
Principles of Toxicology
Basic theorems of toxicology with examples of current research problems. Toxic risk is defined as the product of intensive hazard and extensive exposure. Each factor is assessed in scientific and social contexts and illustrated with many types of experimental material.
Prerequisite(s): BIOC 3101 and fourth-year standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as BIOL 6402, CHEM 5708, for which additional credit is precluded.
Lectures three hours a week.

BIOC 4901 [0.5 credit]
Selected Topics in Biochemistry
Selected topics of current interest in biochemistry are offered upon approval by the Director in consultation with members of the Institute.

BIOC 4906 [1.0 credit]
Interdisciplinary Research Project
Collaborative, interdisciplinary research project approved by the Director. Requires co-supervision, with at least one faculty member from the Institute of Biochemistry. Evaluation is based on a written thesis and poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for BIOC 4907 and BIOC 4908.
Prerequisite(s): (BIOC 3103 and BIOC 3104) and (BIOC 3101 and BIOC 3102) or equivalent, eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology, permission of the Institute.

BIOC 4907 [1.0 credit]
Honours Essay and Research Proposal
An independent research study using library or computational resources. The candidate will prepare a critical review of a topic approved by a faculty adviser. Evaluation will be based on a written report and a poster presentation of the project.
Includes: Experiential Learning Activity
Precludes additional credit for BIOC 4906 [1.0] and BIOC 4908 [1.0].
Prerequisite(s): fourth-year standing in an Honours Biochemistry program and permission of the Institute.
BIOC 4908 [1.0 credit]
Research Project
Students carry out a research project approved by the Director, under the supervision of a faculty member of the Institute, in either the Biology or Chemistry departments. Evaluation is based on a written thesis and poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for BIOC 4906 and BIOC 4907.
Prerequisite(s): (BIOC 3103 and BIOC 3104) and (BIOC 3101 and BIOC 3102) or equivalent, and eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology.

Biology (BIOL) Courses

BIOL 1010 [0.5 credit]
Biotechnology and Society
A course for students interested in the science behind recent advances in biotechnology. The different ways in which biotechnology is being applied in agriculture, health care, and the environment will be examined.
Precludes additional credit for BIOL 2200 or BIOC 2200 or BIOL 2201. Students in Biology and Biochemistry programs may only take this course as a free elective.
Lectures three hours a week.

BIOL 1103 [0.5 credit]
Foundations of Biology I
A research-oriented course focusing on the scientific process of biological exploration at the cellular level. Topics include cell organization, metabolism, genetics, and reproduction.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 1003 (no longer offered).
Prerequisite(s): Ontario 4U/M in Biology (or equivalent), or Ontario 4U/M in Chemistry (or equivalent).
Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 1104 [0.5 credit]
Foundations of Biology II
A research-oriented course focusing on the scientific process of biological exploration at the macroscale. Topics include evolution, diversity of life, and ecological relationships.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 1004 (no longer offered).
Prerequisite(s): Ontario 4U/M in Biology (or equivalent) or BIOL 1103.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 1105 [0.5 credit]
Biological Methods, Analysis and Interpretation
Formulation of biological research questions, development of hypotheses and predictions, design of experiments, collection and analysis of data, interpretation and presentation of results.
Lectures three hours a week.

BIOL 1902 [0.5 credit]
Natural History
A course designed primarily for students in non-biology programs to investigate the natural history of plants and animals, and the communities in which they occur. Particular attention is paid to the Ottawa region, but appropriate examples from other locales are also included.
Lectures three hours a week.

BIOL 2001 [0.5 credit]
Animals: Form and Function
An introduction to the diverse structures of animals (both invertebrates and vertebrates) in relationship to their functions, discussed within an evolutionary framework.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2002 [0.5 credit]
Plants: Form and Function
An introduction to the structure and development of higher plants (at cellular, morphological and organism levels) discussed in relation to their function.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2005 [0.5 credit]
Human Biology
A course for non-specialists interested in how the human body works. Topics will include biological molecules, cells, genetics, and various organ systems. Examples will be used to connect concepts taught in the course with general knowledge of human health and disease.
Prerequisite(s): BIOL 1003 or BIOL 1103 and (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006) or permission of the Department. Students in Biology and Biochemistry programs may only take this course as a free elective.
Lectures three hours a week.
BIOL 2104 [0.5 credit]
Introductory Genetics
Lecture/laboratory course on the mechanisms of inheritance and the nature of gene structure, composition and function, introducing both classical Mendelian genetics and modern molecular genetics. It is strongly recommended that this course be taken by Biology majors in their second year of study.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 2106 (no longer offered) and BIOL 2107. Credit for BIOL 2106 will only be given if taken before BIOL 2104.
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2107 [0.5 credit]
Fundamentals of Genetics
Mechanisms of inheritance and the nature of gene structure, composition and function, introducing both classical Mendelian genetics and modern molecular genetics.
Precludes additional credit for BIOL 2104 and BIOL 2106 (no longer offered).
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.
Lectures three hours a week.

BIOL 2200 [0.5 credit]
Cellular Biochemistry
Cellular functions and their interrelationships. Introduction to thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.
Includes: Experiential Learning Activity
Also listed as BIOC 2200.
Precludes additional credit for BIOL 2201.
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006), or permission of the Department.
Lectures three hours a week, laboratory or tutorial four hours a week.

BIOL 2201 [0.5 credit]
Cell Biology and Biochemistry
A study of the molecular, metabolic and structural organization of cells in relation to function. This course is recommended for students not taking upper year Biology laboratory courses for which BIOL/BIOC laboratories are prerequisites.
Precludes additional credit for BIOL 2200, BIOC 2200.
Prerequisite(s): (BIOL 1003 or BIOL 1103) and (CHEM 1002 or CHEM 1006), or permission of the Department.
Lectures three hours a week.

BIOL 2301 [0.5 credit]
Biotechnology I
An introductory course on the science, technology, entrepreneurial skills and business considerations related to biotechnology. The course will survey broadly across the disciplines of Biology, including applications in agriculture, health, environment and industry.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the department.
Lectures and workshops three hours a week.

BIOL 2303 [0.5 credit]
Microbiology
The biology of the bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.
Also listed as ENVE 2002.
Prerequisite(s): BIOL 1003 or BIOL 1103.
Lectures three hours a week.

BIOL 2600 [0.5 credit]
Ecology
The scientific study of interactions of living organisms and their environment, and how these affect the distribution and abundance of life. Topics include energy transformation and flow, nutrient cycling, population and community dynamics, human impacts on ecosystems, conservation issues. Laboratory includes field and computer exercises.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), or permission of the Department.
Lectures three hours a week, laboratory or tutorial four hours a week.

BIOL 2903 [0.5 credit]
Natural History and Ecology of Ontario
Introduction to the remarkable diversity and ecological relationships of Ontario's flora and fauna, which are explored in a habitat context.
Precludes additional credit for BIOL 1903 (no longer offered).
Prerequisite(s): BIOL 1004 or BIOL 1104 or BIOL 1902.
Lectures three hours a week.

BIOL 3004 [0.5 credit]
Insect Diversity
Introductory course dealing with the taxonomic diversity, anatomy, behavior and physiology of insects, as well as their impacts on ecosystems, agriculture and animal and human health.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4601.
Prerequisite(s): BIOL 2001.
Lectures three hours a week.
BIOL 3008 [0.5 credit]
Bioinformatics
A practical exploration in the application of information technology to biochemistry and molecular biology. Insight into biological knowledge discovery via molecular structure and function prediction, comparative genomics and biological information management.
Includes: Experiential Learning Activity
Also listed as BIOC 3008, COMP 3308.
Prerequisite(s): BIOC 2200 or BIOL 2200, or permission of the Department.
Lectures two hours a week, computer workshop three hours a week.

BIOL 3102 [0.5 credit]
Mycology
This introductory course will cover the morphology, physiology, life cycles, evolution, ecology and biotechnology of the fungi.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2104 or BIOL 2107.
Lectures three hours a week.

BIOL 3104 [0.5 credit]
Molecular Genetics
A lecture course dealing with modern advances in molecular genetics.
Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the Department.
Lectures three hours a week.

BIOL 3111 [0.5 credit]
Vertebrate Evolution: Mammals, Reptiles, and Birds
Evolution of mammals, reptiles and birds. Emphasis on surveying amniote diversity, and the origin of key amniote transformations, as evidenced by the fossil record.
Includes: Experiential Learning Activity
Also listed as ERTH 3111.
Prerequisite(s): BIOL 2001 or ERTH 1009, or permission of the department.
Lectures two hours a week and a laboratory three hours a week.

BIOL 3112 [0.5 credit]
Vertebrate Evolution: Fish and Amphibians
Evolution of fish and amphibians. Emphasis on surveying fish and amphibian diversity, and the origin of key transformations of these groups, as evidenced by the fossil record.
Includes: Experiential Learning Activity
Also listed as ERTH 3112.
Prerequisite(s): BIOL 2001 or ERTH 1009, or permission of the department.
Lectures two hours a week and a laboratory three hours a week.

BIOL 3201 [0.5 credit]
Cell Biology
A lecture and laboratory course on the structure, composition, and function of eukaryotic cells.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2104 and BIOL 2200/BIOC 2200, or permission of the Department.
Lectures three hours a week, laboratory four hours a week.

BIOL 3202 [0.5 credit]
Principles of Developmental Biology
Introduction to the underlying principles and mechanisms governing development in multicellular animals and plants. Differentiation, growth, morphogenesis, and patterning will be examined at the organismal, cellular, and molecular levels to provide a balanced view of developmental phenomena in key model organisms.
Prerequisite(s): BIOL 2104 or BIOL 2107 and one of BIOL 2001 or BIOL 2002, or permission of the Department.
Lectures three hours a week.

BIOL 3205 [0.5 credit]
Plant Biochemistry and Physiology
A lecture and laboratory course consisting of selected topics in metabolism and physiology of plants, including photosynthesis, nutrient uptake and transport, intermediary and secondary metabolism, germination, growth and development.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2002 and BIOL 2200/BIOC 2200, or permission of the Department.
Lectures three hours a week, laboratory four hours a week.

BIOL 3301 [0.5 credit]
Biotechnology II
An interdisciplinary course on interactions between science, invention and innovation in biotechnology. Case studies related to regional biotechnology opportunities; social and ethical issues impacting biotechnology.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2301, BIOL 2104, and BIOL 2200/BIOC 2200 or permission of the department.
Lectures and laboratory/workshops three hours a week.

BIOL 3303 [0.5 credit]
Experimental Microbiology
Intensive training in laboratory techniques in microbiology, using bacteria and other microorganisms to demonstrate processes of cell growth, metabolism, gene expression, rapid evolution, gene transfer, microbial community dynamics and interactions with other organisms.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2104, BIOL 2200/BIOC 2200 and BIOL 2303, or permission of the Department.
Lecture/tutorial one and a half hours a week, laboratory four hours a week.
BIOL 3305 [0.5 credit]
**Human and Comparative Physiology**
The properties of physiological systems and components of humans and other animals with an emphasis on physical and chemical bases.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 3306.
Prerequisite(s): BIOL 2200/BIOC 2200 and BIOL 2001. A credit in PHYS at the 1000-level is strongly recommended.
Lectures three hours a week, laboratory four hours a week.

BIOL 3306 [0.5 credit]
**Human Anatomy and Physiology**
The anatomy and physiology of the neuromuscular, cardiovascular, respiratory, and excretory systems of humans with comparison to other animals.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 3305.
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), and (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006), and third year standing.
Lectures three hours per week.

BIOL 3307 [0.5 credit]
**Advanced Human Anatomy and Physiology**
The anatomy and physiology of the endocrine, skeletal, digestive, immunological, and reproductive systems, with additional emphasis on the embryological origins of the major physiological systems.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3305 or BIOL 3306.
Lectures three hours per week, workshop or laboratory four hours per week.

BIOL 3501 [0.5 credit]
**Biomechanics**
Properties of muscles, tendons, bones, joints and the co-ordinated use of these structures. Human and other animal locomotion and fitness, bird flight, especially the soaring of the vulture and the albatross, and animal migration are covered in detail.
Includes: Experiential Learning Activity
Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104).
Lectures three hours a week, workshop two hours a week.

BIOL 3601 [0.5 credit]
**Ecosystems and Environmental Change**
Exploration of the unique contribution of the ecosystem approach to ecology, and of early key literature in ecosystem ecology through to current work on global environmental change.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2600.
Lectures three hours a week, laboratory four hours a week in six sessions.

BIOL 3602 [0.5 credit]
**Conservation Biology**
The science of biology as applied to the problem of maintaining species diversity. Topics include: history of conservation biology, valuation of species, indices of biodiversity, extinction, conservation genetics, conservation planning in parks and reserves, landscape ecology and case studies of conservation problems.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2600 or permission of the Department.
Lectures three hours a week and laboratory/workshop three hours a week.

BIOL 3604 [0.5 credit]
**Statistics for Biologists**
Introduction to the analysis of biological data. Students analyze real biological data sets in weekly laboratory sessions. Methods introduced include simple linear, polynomial, and multiple regression analysis, analysis of variance, nonparametric tests, tests of independence and logistic regression analysis.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 1105 or STAT 2507.
Lectures one and one-half hours and laboratory two and one-half hours a week.

BIOL 3605 [0.5 credit]
**Field Course I**
An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. Transportation and room and board costs are borne by the student. Ontario Universities Program in Field Biology; see offered modules for specific prerequisites.
Includes: Experiential Learning Activity
Also listed as NEUR 3203, for animal behaviour modules only.
Prerequisite(s): at least one course in BIOL beyond the 1000-level and written permission of the Department.
Students may take both BIOL 3605 and BIOL 3606 for credit, but neither may be used to repeat a particular module.
All day, approximately six days a week.

BIOL 3606 [0.5 credit]
**Field Course II**
An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. Transportation and room and board costs are borne by the student. Ontario Universities Program in Field Biology; see offered modules for specific prerequisites.
Includes: Experiential Learning Activity
Prerequisite(s): at least one course in BIOL beyond the 1000-level and written permission of the Department.
Students may take both BIOL 3605 and BIOL 3606 for credit, but neither can be used to repeat a particular module.
All day, approximately six days a week.
BIOL 3608 [0.5 credit]  
Principles of Biogeography  
Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.  
Includes: Experiential Learning Activity  
Also listed as GEOG 3104.  
Prerequisite(s): BIOL 2600 or GEOG 1010 or permission of the Department.  
Lectures, laboratory, and fieldwork five hours a week.

BIOL 3609 [0.5 credit]  
Evolutionary Concepts  
Evolution is the change in population properties across generations. Genetic variation, mutation, selection, drift, gene flow, genome evolution, speciation, development, biodiversity, fossils, and macro-evolution.  
Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the instructor.  
Lectures three hours a week.

BIOL 3611 [0.5 credit]  
Evolutionary Ecology  
The term “adaptation” is meaningful only with respect to an ecological context. Ecological contexts lead to evolutionary outcomes such as diverse mating systems, ageing, sexual reproduction, sexual dimorphism, geographic variation, phenotypic plasticity, and diverse life histories.  
Includes: Experiential Learning Activity  
Precludes additional credit for BIOL 4608.  
Prerequisite(s): BIOL 2600.  
Lectures three hours a week; one field trip.

BIOL 3612 [0.5 credit]  
Computational Methods in Ecology and Evolution  
Introduction to the development and use of computer programs to address biological problems. Topics include the development of programs to analyse ecological data, models of population dynamics, deterministic chaos, cellular automata, simulations of foraging behaviour and evolutionary computation.  
Includes: Experiential Learning Activity  
Prerequisite(s): BIOL 2600 or permission of the Department.  
Lectures two hours per week, workshop three hours per week.

BIOL 3801 [0.5 credit]  
Plants and Herbivores  
Exploration of the chemical, physiological, ecological and evolutionary interactions that underlie the relationship between plants and their insect herbivores.  
Prerequisite(s): BIOL 2001 and BIOL 2002.  
Lectures/seminars three hours a week.

BIOL 3802 [0.5 credit]  
Animal Behaviour  
Advanced study of animal behaviour including the environmental, genetic, and neural influences on behaviour. Topics such as predator-prey interactions, mating behaviour, migration, parental care and social interactions are interpreted in an evolutionary context.  
Prerequisite(s): BIOL 2001 or BIOL 2600 or permission of the Department.  
Lectures and workshop/tutorials three hours a week.

BIOL 3804 [0.5 credit]  
Social Evolution  
Diversity in social behaviour from evolutionary and ecological perspectives. Topics include ecological determinants of social living, social networks, social foraging, inclusive fitness, kin selection, altruism, cooperation, and mating systems and strategies.  
Prerequisite(s): BIOL 2001 and BIOL 2600, or permission of the Department.  
Lectures three hours a week.

BIOL 3901 [0.5 credit]  
Research Proposal  
The development of a competitive research proposal in consultation with an advisor.  
Includes: Experiential Learning Activity  
Prerequisite(s): third year standing in an Honours Biology program and permission of the Department.

BIOL 3902 [0.5 credit]  
Topics in Biology I  
Specific topics of current interest. Topics may vary from year to year.  
Prerequisite(s): third-year standing in a Biology program or permission of the Department.  
Lecture, seminars, or workshops three hours per week.

BIOL 3999 [0.0 credit]  
Co-operative Work Term Report  
Practical experience for students enrolled in the Co-operative Option. Students must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.  
Includes: Experiential Learning Activity  
Prerequisite(s): registration in the Biology Co-operative Option and permission of the Department.

BIOL 4008 [0.5 credit]  
Molecular Plant Development  
Recent advances in plant development including molecular, biochemical, genomics, and proteomics studies.  
Prerequisite(s): BIOL 2002 or permission of the Department.  
Lectures three hours a week.
BIOL 4102 [0.5 credit]  
Molecular Ecology  
The interface of molecular biology, ecology and population biology. Topics include experimental design and a survey and critique of molecular genetic methods to study ecology.  
Prerequisite(s): BIOL 2104 or BIOL 2107 and BIOL 2600; BIOL 3104 or one of BIOL 3601, BIOL 3602 (may be taken concurrently), or permission of the Department.  
Lectures three hours a week.

BIOL 4103 [0.5 credit]  
Population Genetics  
Evolution of gene frequencies, including selection, mutation, genetic drift, inbreeding, gene flow, and population structure.  
Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the Department. A course in statistics is highly recommended.  
Lectures and seminars three hours a week.

BIOL 4104 [0.5 credit]  
Evolutionary Genetics  
An overview of the molecular evidence of evolution, speciation as well as the phylogenetic analysis of biological sequence data and biometrical traits.  
Includes: Experiential Learning Activity  
Prerequisite(s): (BIOL 2001 or BIOL 2002) and (BIOL 2104 or BIOL 2107) or permission of the Department. A course in statistics is recommended.  
Lectures and computer lab three hours a week.

BIOL 4106 [0.5 credit]  
Advances in Molecular Biology  
Review of the application of high throughput approaches to research in molecular and cellular biology and biochemistry with an emphasis on gene function and human disease progression.  
Prerequisite(s): BIOL 2303 and (BIOL 3104 or BIOL 3201).  
Lectures and seminars three hours a week.

BIOL 4109 [0.5 credit]  
Laboratory Techniques in Molecular Genetics  
This laboratory course provides practical familiarity with commonly used techniques in molecular genetics. The laboratory is suitable for students with a developing interest in problems of molecular and cellular biology and biochemistry.  
Includes: Experiential Learning Activity  
Prerequisite(s): BIOL 2200/BIOC 2200 and BIOL 2303 and BIOL 3104 or permission of the Department.  
Lecture/laboratory six hours a week in two sessions.

BIOL 4200 [0.5 credit]  
Immunology  
The organization and function of the immune system, including the anatomy of the immune system, the properties and behaviour of cells of the immune system, and the molecular and genetic bases of the immune response.  
Also listed as BIOC 4200.  
Prerequisite(s): BIOL 3201 or permission of the Department.  
Lectures three hours a week.

BIOL 4201 [0.5 credit]  
Advanced Cell Culture and Tissue Engineering  
Theory and application of current techniques and developments in cell culture as applied to research questions in the field of stem cells and tissue engineering.  
Includes: Experiential Learning Activity  
Also listed as BIOC 4201.  
Prerequisite(s): BIOL 3201 or permission of the Department.  
Laboratory four hours per week, tutorial one hour a week.  
Labs require regular participation outside of the scheduled lab time to maintain cell cultures and set up or complete experiments.

BIOL 4202 [0.5 credit]  
Mutagenesis and DNA Repair  
A mechanistic study of mutagenesis and DNA repair. Topics include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the development of genetic disease and cancer.  
Also listed as BIOC 4202.  
Prerequisite(s): BIOL 2104 or BIOL 2107.  
Lectures and tutorial three hours a week.

BIOL 4203 [0.5 credit]  
Evolution of Sex  
The evolution of sex, including meiosis, syngamy, sex determination, sex chromosomes, and gender from organismal, genetic, and developmental perspectives; the origin, maintenance, function, and ubiquity of sex.  
Prerequisite(s): BIOL 2104 or BIOL 2107.  
Lectures three hours a week.

BIOL 4206 [0.5 credit]  
Human Genetics  
A survey of human genetic variation and mutation in a molecular genetics context. Topics may include molecular basis of diseases, chromosomal abnormalities, genomic imprinting, cancer genetics, genomics, gene mapping and gene therapy.  
Prerequisite(s): BIOL 3104 or permission of the Department.  
Lectures three hours a week.
BIOL 4207 [0.5 credit]
Advanced Embryology & Developmental Biology
A laboratory-based exploration of techniques and recent developments in the use of model embryological systems as applied to questions of development and human health. Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3201 or BIOL 3202 or permission of the Department.
Laboratory four hours per week, tutorial one hour a week. Labs require regular participation outside of the scheduled lab time to set up or complete experiments.

BIOL 4209 [0.5 credit]
Advanced Plant Physiology
An advanced course dealing with recent developments in selected topics of plant physiology.
Prerequisite(s): BIOL 3205 and CHEM 2203, CHEM 2204 or permission of the Department.
Lectures/discussion three hours a week.

BIOL 4300 [0.5 credit]
Applied Microbiology
Studies of the application of microorganisms. Topics may include: microbial communities, and agricultural, pharmaceutical, industrial and health sciences.
Prerequisite(s): (BIOL 2200/BIOC 2200 or BIOL 2201), BIOL 2303 and (BIOL 3104 or BIOL 3303) or permission of the Department.
Lectures and tutorial three hours a week.

BIOL 4301 [0.5 credit]
Current Topics in Biotechnology
Explorations of developing biotechnologies in areas such as microbial products, protein engineering, plant genetic engineering, environmental remediation, pharmaceutical production and medical diagnostics and therapy.
Prerequisite(s): BIOL 3301 or permission of the department.
Lectures and tutorials three hours a week.

BIOL 4303 [0.5 credit]
Advances in Microbiology
Exploration of current microbiology including the molecular biology of infectious agents, use of model micro-organisms to study human cells and diseases, and functional genomics and proteomics. Special attention will be paid to the field’s “big questions”. Students will critically examine a number of research proposals.
Prerequisite(s): BIOL 2303 and (BIOL 3104 or BIOL 3303 or BIOC 3102) or permission of the Department.
Lectures three hours per week.

BIOL 4304 [0.5 credit]
Forensic Biology
An introduction to forensics that covers topics in molecular biology, biochemistry, genetics, population genetics and statistics as they relate to forensic biology. The course will describe the techniques used to identify body fluids and generate DNA profiles as well as the interpretation of forensic results.
Prerequisite(s): (BIOL 2104 or BIOL 2107) and (BIOL 2200/BIOC 2200 or BIOL 2201) or permission of the Department.
Lectures three hours a week.

BIOL 4306 [0.5 credit]
Animal Neurophysiology
A course dealing with recent advances made in particular areas of animal neurophysiology.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4305.
Prerequisite(s): BIOL 3305 or BIOL 3306, or permission of the Department.
Lectures two hours a week, workshops or laboratory four hours a week.

BIOL 4309 [0.5 credit]
Studies in Human Performance
Biomechanical underpinnings of human performance including the quantitative analysis of human motion in normal activities and in athletic performance. Students will learn modern motion capture methods. This course will require students to design and execute an independent project.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3307 and fourth-year standing, or permission of the department.
Lecture three hours per week, workshop/labs three hours per week.

BIOL 4317 [0.5 credit]
Neuroethology: The Neural Basis of Animal Behaviour
Proximate mechanisms underlying animal behaviour. Focus on evolution of nervous systems in response to environmental selection pressures. Topics include: genetic and hormonal influences on behaviour (e.g. maternal care); unique sensory worlds (e.g. magnetic); various levels of neural integration, from simple reflexes to complex social behaviour.
Prerequisite(s): BIOL 3305 or BIOL 3306, or permission of the Department.
Lectures three hours a week.

BIOL 4318 [0.5 credit]
Adaptations to Extreme Environments
Lectures, discussions and student presentations will be used to examine adaptations of animals to extreme environments (e.g. desert) or lifestyles (e.g. diving), at the physiological, biochemical and molecular levels. Emphasis on becoming familiar with the current primary literature.
Prerequisite(s): BIOL 3305, or permission of the Department.
Lectures/workshops three hours a week.
BIOL 4319 [0.5 credit]
Studies in Exercise Physiology
Physiological mechanisms underlying human athletic performance. Exercise physiology and cardio-respiratory activity, metabolic regulation and musculoskeletal function. Practical experience will be gained in the workshop/laboratory based experimental sessions.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3307 and fourth-year standing, or permission of the department.
Lectures two hours per week, workshop/labs three hours per week.

BIOL 4500 [0.5 credit]
The Biology of Birds
Introduction to ornithology, the study of birds; the evolution of birds, migration, geographic variation, adaptations for flight, feeding, reproduction; extinction and preservation.
Prerequisite(s): BIOL 2001 or permission of the department.
Lectures three hours per week.

BIOL 4501 [0.5 credit]
The Taxonomy of Birds
The taxonomy of birds and species identification are learned through the use of study skins in the lab. Field excursions allow first-hand study of various species. Participants must acquire a pair of binoculars and one of the recommended field guides.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2001 or permission of the department.
Laboratory/field excursions four hours per week.

BIOL 4502 [0.5 credit]
Herpetology
Herpetology is the study of amphibians and reptiles. The behaviours, physiological ecology, conservation and identification of amphibians and reptiles will be examined through lectures, seminars and hands-on activities.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2001.
Lectures or seminars three hours per week.

BIOL 4503 [0.5 credit]
Fish Ecology, Conservation and Management
Introduction to the diversity and environmental biology of the world’s fishes. Applied issues in fisheries management, conservation, and aquaculture. Workshops expose students to techniques in fisheries science through hands-on demonstrations and field excursions.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2600 or permission of the Department.
Lectures/seminars two hours a week, plus labs/workshops two hours a week.

BIOL 4504 [0.5 credit]
Ecology of Freshwater Invertebrates
Overview of the diversity and ecology of freshwater invertebrates. Aquatic invertebrates from local bodies of water will be sampled and identified in the lab. Experiments on the ecology and behaviour of model species of freshwater invertebrates will also be conducted in the lab.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2001 and BIOL 2600.
Seminar and lab four hours a week.

BIOL 4505 [0.5 credit]
Coral Reefs
Examining the diversity of life on coral reefs and their interactions across ecological scales, from the biochemistry of zooxanthellae symbiosis to landscape scale trophodynamics, reticulate evolution, and reef fisheries. Emphasis is on synthesis writing drawn from the current primary literature.
Prerequisite(s): BIOL 2600.
Lectures/seminars three hours a week.

BIOL 4506 [0.5 credit]
Cactus Biology
Covers the cactus family over its entire range, including most of the western hemisphere, with discussion on their anatomy, physiology, ecology, evolution, and classification. Topics include how cacti are both typical flowering plants in some regards, and atypical in others.
Prerequisite(s): BIOL 2002.
Lectures/seminars three hours a week.

BIOL 4507 [0.5 credit]
Ecological Parasitology
Key concepts in the ecological study of parasites and pathogens, underpinned by evolutionary thinking and relevant to fundamental and applied questions of co-evolution, disease ecology, epidemiology, emerging infectious diseases, environmental parasitology, evolutionary transitions, host species range, immunity, resistance, tolerance, transmission mode, and virulence.
Prerequisite(s): BIOL 2600 and one of the following: BIOL 3601, BIOL 3604, BIOL 3609, BIOL 3611, BIOL 3612, BIOL 3801, BIOL 3802, BIOL 3804.
Lectures or seminars 3 hours per week.

BIOL 4602 [0.5 credit]
Evolutionary Applications across Disciplines: From Medicine to Conservation
Evolutionary principles contributing to advancements across fields including medicine, agriculture, conservation, climate change, and engineering. Topics include evolution of virulence, causes of variation in human health, evolution of resistance to pesticides, interventions for recovery of species at risk, and biomimetic modeling in engineering and architecture.
Prerequisite(s): BIOL 1104 and third-year standing.
Lectures/workshops three hours per week.
BIOL 4603 [0.5 credit]
Insect Evolution and Biology
Major questions on the origin, evolution and adaptation of structures and physiology of terrestrial arthropods, especially insects.
Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3004, or permission of the Department.
Lectures two hours a week, laboratory four hours a week.

BIOL 4604 [0.5 credit]
Landscape Ecology
Landscape ecology is the study of how landscape structure affects the abundance and distribution of organisms. The focus of this course is on research methods and results in landscape ecology. Applications in forestry, agriculture, and species conservation.
Prerequisite(s): BIOL 2600 or equivalent, BIOL 3601 or BIOL 3602 or BIOL 3608 or equivalent, and fourth-year standing in Biology, Geography, or Environmental Sciences.
Lecture three hours a week.

BIOL 4802 [0.5 credit]
Advanced Animal Behaviour
Contemporary issues in behavioural ecology. Topics may include the relevance of behavioural ecology to conservation biology, to new insights into human social behaviour, and will be selected through consultation between professor and students.
Prerequisite(s): BIOL 3802 or BIOL 3804, or permission of the Department.
Lectures or workshops three hours a week.

BIOL 4810 [0.5 credit]
Education Research in Biology
An introduction to the science of teaching and learning in biology. Students will be introduced to the foundational concepts in, and tools of, Discipline-Based Education Research (DBER) and will conduct their own DBER research project.
Includes: Experiential Learning Activity
Prerequisite(s): 4th year standing, or permission of the Department.
Seminar three hours per week, classroom-based research one hour per week.

BIOL 4901 [0.5 credit]
Directed Special Studies
Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Prerequisite(s): permission of the Department. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

BIOL 4902 [0.5 credit]
Topics in Biology II
Specific topics of current interest. Topics may vary from year to year.
Prerequisite(s): four-year standing in a Biology program or permission of the Department.
Lecture, seminars, or workshops three hours per week.

BIOL 4905 [1.0 credit]
Honours Workshop
Within the context of an active learning environment, students participate in a variety of activities which may include literature reviews and critiques, media releases and response papers, oral presentations, and posters. Projects are focused on an area of biological research of interest to the student.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4907 and BIOL 4908.
Prerequisite(s): four-year standing in an Honours biology program and permission of the Department.
Workshops three hours per week.

BIOL 4907 [1.0 credit]
Honours Essay and Research Proposal
An independent critical review and research proposal, using library resources, under the direct supervision of a Faculty advisor. Evaluation is based on a written report and a poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4905 and BIOL 4908.
Prerequisite(s): four-year standing in an Honours Biology program and permission of the Department.

BIOL 4908 [1.0 credit]
Honours Research Thesis
An independent research project undertaken in the field and/or the laboratory, under the direct supervision of a faculty adviser. Evaluation is based on a written thesis and a poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 4905 and BIOL 4907.
Prerequisite(s): four-year standing in an Honours biology program with a minimum CGPA of 8.0 in the major or permission of the Department.

Business (BUSI)

Business (BUSI) Courses
Notes:
1. Some Business courses are open to students in select programs only. Please refer to the current BUSI Course Priority List found at: sprott.carleton.ca/registration
2. B.Com. and B.I.B. students should use Business (BUSI) prefix for registering in courses that are cross-listed.
3. Not all courses listed are offered in a given year; consult the class schedule at central.carleton.ca for a list of current course offerings.
BUSI 1001 [0.5 credit]
Principles of Financial Accounting
Discussion of the concepts of asset valuation and income measurement underlying the preparations and interpretation of financial statements. Precludes additional credit for BUSI 1003 and BUSI 1004. Prerequisite(s): second-year standing, or permission of the Sprott School of Business. Lecture three hours a week.

BUSI 1002 [0.5 credit]
Management Accounting
An introduction to the use of accounting data for the purposes of planning and control of operations. Precludes additional credit for BUSI 1003 and BUSI 1005. Prerequisite(s): second-year standing and BUSI 1001, or permission of the Sprott School of Business. Lecture three hours a week.

BUSI 1003 [0.5 credit]
Survey of Accounting
Introduction to accounting information, the basic accounting cycle, and consideration of selected financial statement topics. Analysis of cost behavior and the uses and limitations of accounting information in planning, controlling and decision-making processes. Precludes additional credit for BUSI 1001, BUSI 1002, BUSI 1004 and BUSI 1005. No credit for students in B.Com., BIB or B.Econ. (Honours Economics, Concentration in Financial Economics). Lecture three hours a week.

BUSI 1004 [0.5 credit]
Financial Accounting for Business Students
Introduction to accounting for business organizations. The student will be introduced to the accounting process and the preparation and analysis of the balance sheet, income statement, and cash flow statement. Precludes additional credit for BUSI 1001 and BUSI 1003. Prerequisite(s): BUSI 1701 or BUSI 1800. Restricted to B.Com. and B.I.B. students. Lectures three hours a week.

BUSI 1005 [0.5 credit]
Managerial Accounting for Business Students
Introduction to the development and use of accounting information within a business organization for effective management including: planning, directing, motivating, and controlling activities and behaviours. Precludes additional credit for BUSI 1002 and BUSI 1003. Prerequisite(s): BUSI 1004. Restricted to B.Com. and B.I.B. students. Lectures three hours a week.

BUSI 1402 [0.5 credit]
Introduction to Business Information and Communication Technologies
Introduction to ICT in organizations. Topics may include spreadsheets, databases, statistical software, website design and implementation, collaboration software including wikis, blogs and social networking, GPS, m-Commerce. Lectures three hours a week.

BUSI 1701 [0.5 credit]
Introduction to International Business
Introduction to the principles and practices of international business. Topics include the impact of culture and the political, economic, and legal systems on global strategy, international institutions, theories of cross-border trade, and the characteristics and effects of regional trade blocs. Precludes additional credit for BUSI 2701, BUSI 2703. Prerequisite(s): restricted to B.I.B. students. Lecture three hours and tutorial one hour a week.

BUSI 1800 [0.5 credit]
Introduction to Business
Introduction to contemporary businesses in a complex economy, their role in the society, their history. The various functions that come together to define a business will be examined. All forms of business communications emphasized. Prerequisite(s): restricted to B.Com. students with first-year or second-year standing. Lectures three hours and tutorial one hour a week.

BUSI 1801 [0.5 credit]
Foundations of Business
Introduction to contemporary businesses in a complex economy and their role in the society. An overview of the various functions that come together to define a business will be examined. Precludes additional credit for BUSI 1800. No credit in B.Com. or B.I.B programs. Lectures three hours a week.

BUSI 1995 [0.0 credit]
Employability Passport I
An introduction to the knowledge and tools required for a career in Business. Includes: Experiential Learning Activity Prerequisite(s): Restricted to students registered in B.Com. or B.I.B. Participation in employability events and initiatives throughout the year.

BUSI 2001 [0.5 credit]
Intermediate Accounting I
An examination of accounting and reporting issues related primarily to asset valuation and revenue recognition. Prerequisite(s): BUSI 1001 and BUSI 1002, or BUSI 1004 and BUSI 1005 with a grade of C or higher in each. Lecture three hours a week.
BUSI 2002 [0.5 credit]  
**Intermediate Accounting II**  
An examination of accounting and reporting issues related primarily to liabilities and equities.  
Precludes additional credit for BUSI 2506.  
Prerequisite(s): BUSI 2001, and BUSI 2504 or BUSI 2503 with a grade of C or higher in each.  
Lecture three hours a week.  

BUSI 2005 [0.5 credit]  
**Income Tax Fundamentals**  
A foundation course that aims to introduce the fundamental concepts of income tax laws and regulations as significant elements in the planning and decision making process of taxpayers and managers. Problems, issues and planning associated with the Income Tax Act are discussed.  
Precludes additional credit for BUSI 3005 and BUSI 4005.  
Prerequisite(s): BUSI 1001 or BUSI 1004 with a grade of C- or higher.  
Lecture three hours a week.  

BUSI 2101 [0.5 credit]  
**Organizational Behaviour**  
Models of individual and small group behaviour in organizations. Topics include motivation, communication, job design, leadership and group dynamics to provide systematic explanations of employee and managerial behaviour in organizations.  
Precludes additional credit for BUSI 2121, BUSI 2702, BUSI 3602.  
Prerequisite(s): second-year standing. Restricted to B.Com. students.  
Lectures three hours, and tutorial one and a half hours a week.  

BUSI 2121 [0.5 credit]  
**Introduction to Organizational Behaviour**  
Individual and small group behaviors in organizations and management of the same.  
Precludes additional credit for BUSI 2101, BUSI 2702, BUSI 3602.  
Prerequisite(s): second-year standing.  
Lecture three hours a week.  

BUSI 2204 [0.5 credit]  
**Basic Marketing**  
Basic problems and practices in marketing. Marketing planning tools and strategies of firms.  
Precludes additional credit for BIT 2002 and BUSI 2208.  
Lecture three hours a week.  

BUSI 2208 [0.5 credit]  
**Introduction to Marketing**  
Overview of the marketing function within the firm. Introduction to key marketing concepts and principles; business environment analysis, strategic decision making (segmentation, targeting, positioning), marketing mix planning (product, price, place promotion). Analysis of marketing problems using cases and major project. Includes: Experiential Learning Activity  
Precludes additional credit for BUSI 2204.  
Prerequisite(s): BUSI 1004, ECON 1001 and ECON 1002 (or ECON 1000) and one of BUSI 1701, PSYC 1002, SOCI 1005. Restricted to B.Com. or B.I.B. students.  
Lecture three hours a week.  

BUSI 2301 [0.5 credit]  
**Introduction to Supply and Operations Management**  
Concepts, models, and managerial issues in planning, designing, operating and controlling systems across supply chains for the provision of goods and services. Emphasis on basic ideas and tools.  
Precludes additional credit for BUSI 3300 (no longer offered).  
Prerequisite(s): second-year standing. Restricted to selected Sprott programs.  
Lecture three hours a week.  

BUSI 2400 [0.5 credit]  
**Foundations of Information Systems**  
This course helps student to understand the critical role of information systems in organizations and their impact on social and ethical issues. Covers fundamental tools and skills for the development and management of information systems and business analytics in organizations.  
Lecture three hours a week.  

BUSI 2402 [0.5 credit]  
**Business Applications Development**  
Precludes additional credit for COMP 1006 and COMP 1406.  
Prerequisite(s): second-year standing.  
Lecture three hours and tutorial one hour a week.
BUSI 2503 [0.5 credit]
Introduction to Finance
Basic issues and practices in finance. Survey of business firms' financing, investment, and payout decisions. Emphasis on understanding the principals, resources and trade-offs in the financial area of a business. Precludes additional credit for BUSI 2504 and ECON 3050. No credit for students in B.Com., BIB or B.Econ. (Honours Economics, Concentration in Financial Economics). Prerequisite(s): second-year standing. Lecture three hours a week.

BUSI 2504 [0.5 credit]
Business Finance I
Business firms' financing, capital investment, and dividend policy decisions, cost of capital and short-term asset management problems. Precludes additional credit for BUSI 2503, ECON 3050. Prerequisite(s): BUSI 1005, and ECON 1001 and ECON 1002 (or ECON 1000) or ECOR 3800. Restricted to selected Sprott programs. Lecture three hours and tutorial one hour a week.

BUSI 2505 [0.5 credit]
Business Finance II
Capital investment and financing decisions in the context of risk and return tradeoffs. Primary and derivative securities, and their role in risk management. Mergers, corporate restructuring, the theory of principal-agent relationships, and financial planning, forecasting, and control. Prerequisite(s): BUSI 1002 or BUSI 1005, BUSI 2504 with a grade of C or higher in each; ECON 1001 and ECON 1002 (or ECON 1000) and MATH 1009 with a grade of C- or higher in each. Lecture three hours a week.

BUSI 2506 [0.5 credit]
Financial Statement Analysis
Analysis and interpretation of an entity's financial statements and annual report from a user perspective. Ratio analysis is used to analyze firm performance and make forecasts of future performance. Precludes additional credit for BUSI 2002. Prerequisite(s): BUSI 2504 with a grade of C or higher. Lectures three hours a week.

BUSI 2601 [0.5 credit]
Business Law
The legal system and legal ordering as they affect those engaged in business activities. Emphasis on the law of tort, law of contract, agency and bailment, business associations (partnerships/proprietorships/corporations) and real estate. Lecture three hours a week.

BUSI 2701 [0.5 credit]
Fundamentals of International Business
Introduction to the context and operation of international business. Topics include international trade theory, trade agreements and blocs, international finance, global marketing, international human resource management and global strategy. Precludes additional credit for BUSI 1701, BUSI 2703. Prerequisite(s): BUSI 1800. Lecture three hours a week.

BUSI 2702 [0.5 credit]
Introduction to International Management
Applies principles of organizational behavior and organizational theory to the operations of international businesses. Includes discussion of appropriate strategies and structures. Introduces concepts of cross-cultural communication. Precludes additional credit for BUSI 2101, BUSI 2121, BUSI 3602. Prerequisite(s): second-year standing in B.I.B. and BUSI 1701. Lectures three hours a week.

BUSI 2703 [0.5 credit]
Introduction to International Business
Introduction to contemporary businesses in a complex economy, their role in society and their history. Examination of the various functions that come together to define a business with an emphasis on all forms of business communications. Precludes additional credit for BUSI 1701, BUSI 2701. Prerequisite(s): second-year standing. No credit for students in B.Com. or BIB. Lectures three hours per week.

BUSI 2800 [0.5 credit]
Entrepreneurship
Overview of the basics of entrepreneurship, with emphasis on idea generation and identification, team building, business models, initial strategies and feasibility. A number of organization types will be studied. Prerequisite(s): BUSI 1800 or BUSI 1801 and second-year standing. Lecture three hours a week.

BUSI 2995 [0.0 credit]
Employability Passport II
An intermediate course in the knowledge and tools required for a career in Business. Includes: Experiential Learning Activity Prerequisite(s): BUSI 1995. Participation in employability events and initiatives throughout the year.
**BUSI 3001 [0.5 credit]**  
Accounting for Business Combinations  
Accounting problems associated with business combinations, with attention to the preparation of consolidated financial statements. Discussion may extend to financial reporting and diversified companies, reorganizations, etc. Selection of topics may vary from year to year.  
Prerequisite(s): BUSI 2002 with a grade of C- or higher.  
Lecture three hours a week.

**BUSI 3005 [0.5 credit]**  
Taxation I  
Federal income tax laws and regulations and their impact on an individual's financial and business decisions. Problems, issues and planning associated with the Income Tax Act and concerned with the computation of taxable income and taxes payable by an individual are discussed.  
Precludes additional credit for BUSI 2005.  
Prerequisite(s): BUSI 2001 with a grade of C- or higher.  
Lecture three hours a week.

**BUSI 3007 [0.5 credit]**  
Auditing I  
Auditing theory, methodology and application.  
Precludes additional credit for BUSI 4007 (no longer offered).  
Prerequisite(s): BUSI 2001.  
Lecture three hours a week.

**BUSI 3008 [0.5 credit]**  
Intermediate Management Accounting and Control  
The use of accounting information for cost control and performance evaluation. Emphasis is on cost accumulation systems, performance evaluation, control models and analytical tools.  
Prerequisite(s): BUSI 1002 or BUSI 1005 with a grade of C- or higher in each.  
Lecture three hours a week.

**BUSI 3040 [0.5 credit]**  
Data Analytics and Information Systems for Accounting  
Data analysis in accounting, working with and making sense of big data using various data analysis tools. Specific topics include: data collection, cleaning, analyzing, visualization, and decision making in different areas of accounting.  
Includes: Experiential Learning Activity  
Prerequisite(s): BUSI 2400 and BUSI 3007 with a grade of C- or higher in each.  
Lecture three hours a week.

**BUSI 3102 [0.5 credit]**  
Introduction to Human Resources Management  
Human Resource Management function in large formal organizations. Topics include human resources planning, recruitment, selection, performance evaluation, career development and training, compensation and benefits and the role of the professional personnel manager.  
Prerequisite(s): second-year standing and one of BUSI 2101, BUSI 2121, BUSI 2702, BUSI 3602, or PSYC 2801.  
Lectures three hours a week.

**BUSI 3103 [0.5 credit]**  
Introduction to Organization Theory  
Macro-organization theory. Structuring of organizations in a complex global economy. Effects of the external environment, technology, culture and organizational goals on the structure, processes and effectiveness of the organization.  
Prerequisite(s): second-year standing and one of BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801.  
Lectures three hours a week.

**BUSI 3104 [0.5 credit]**  
Managing Individual Performance  
Managing the performance of self and others. Topics include self awareness, motivation, leadership, communication, diversity, and creativity. Extensive use is made of self-assessments and experiential learning.  
Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 with a grade of C or higher.  
Lecture three hours a week.

**BUSI 3105 [0.5 credit]**  
Managing and Motivating Teams  
Principles of working in and managing teams. Topics include self-awareness, team formation, team development, team dynamics, team leadership and team motivation.  
Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 with a grade of C or higher.  
Lecture three hours a week.

**BUSI 3106 [0.5 credit]**  
Managing Conflict and Negotiation  
Analysis of the sources and forms of conflict and effective approaches to managing conflict. Exploration of the effectiveness of various strategies of negotiations.  
Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 with a grade of C- or higher.  
Lecture three hours a week.
BUSI 3117 [0.5 credit]
Developing Creative Thinking
Increases student skills in areas beyond technical expertise, with a focus on the importance of fluidity, risk taking, and idea generation. Emphasis on creativity as a process, with exposure to various techniques and concepts including Design Thinking at multiple levels (individual, group, organization).
Prerequisite(s): third-year standing and one of BUSI 2101 or BUSI 2702 with a grade of C- or higher; or permission of the Sprott School of Business.
Lecture three hours a week.

BUSI 3119 [0.5 credit]
Business and Environmental Sustainability
Examining concepts of environmental sustainability within the business context. Exploring the complex interdependency between organizations, society and the natural environment.
Prerequisite(s): third year standing.
Lecture three hours a week.

BUSI 3204 [0.5 credit]
Digital Marketing
Introduction and assessment of key new marketing tools and approaches, including internet marketing, relationship marketing, direct marketing; effective adoption and implementation of these tools and approaches across industries and organizations.
Prerequisite(s): BUSI 2204 or BUSI 2208 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3205 [0.5 credit]
Marketing Communications
Promotion as communication process and marketing tool. Integrating advertising, direct/digital marketing, interactive media, sales promotion, public relations, personal selling through strategic planning (research, budgeting, organizing, creative and media strategy), execution, and campaign evaluation. Regulatory, ethical, social issues considerations.
Prerequisite(s): BUSI 2208 or BUSI 2204 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3207 [0.5 credit]
Marketing Research
Concepts essential for understanding and conducting applied marketing research. Methods for collecting, analyzing, and interpreting data relevant to marketing decision-making. Experience in research techniques through case studies, exercises and project.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3100.
Prerequisite(s): BUSI 2204 or BUSI 2208 with a grade of C or higher; STAT 2607 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3208 [0.5 credit]
Business-to-Business Marketing
Theories and practice of marketing in business-to-business markets with emphasis on high technology businesses, including strategic marketing management, buyer behaviour and competitive analysis, sales management, new product management, and international issues.
Prerequisite(s): BUSI 2204 or BUSI 2208 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3209 [0.5 credit]
Consumer Behaviour
Introduction to the application of psychological theories and methodologies to consumer behaviour. How consumer behaviour is shaped by internal influences. Topics include perception, learning, memory, motivation, affect, personality, the self, attitudes and decision-making.
Precludes additional credit for BUSI 4206 (no longer offered).
Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 with a grade of C or higher.
Lecture three hours a week.

BUSI 3301 [0.5 credit]
Supply Chain Management Strategies
Introduction to strategies in managing supply chain. Topics include strategies for planning and coordinating of all activities involved in procurement, conversion, and channel management in the global environment.
Precludes additional credit for BUSI 4303 (no longer offered).
Prerequisite(s): second-year standing; BUSI 2301 with a grade of C or higher and STAT 2606 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3305 [0.5 credit]
Logistics and Transportation
Overview of logistics and transportation concepts, their roles in creating supply chain value; warehousing and facilities management, packaging and material handling, network design, transportation fundamentals, managing logistics internationally, global transportation providers and intermediaries, performance metrics, trends in logistics and transportation.
Prerequisite(s): third-year standing; BUSI 2301 with a grade of C or higher, and STAT 2606 with a grade of C- or higher.
Lecture three hours a week.
BUSI 3308 [0.5 credit]
Simulation Modeling and Analytics
Concepts of computer simulation for predictive and prescriptive analytics through case studies, worked examples and hands-on projects. Emphasizes static simulations with spreadsheets, discrete-event, and agent-based simulations with specialized software. Input modeling, model design, experimental design, analysis of outputs.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing; BUSI 2301 with a grade of C or higher and STAT 2606 with a grade of C- or higher.
Lecture two hours and tutorial two hours a week.

BUSI 3309 [0.5 credit]
Project Management
Identification, selection, initiation, and organization of projects; risk assessment; project scheduling, performance monitoring and control, and termination. Emphasizes foundations, principles and supporting techniques.
Prerequisites: additional credit for BUSI 4308.
Prerequisite(s): third-year standing, BUSI 2301 and STAT 2606.
Lecture three hours a week.

BUSI 3400 [0.5 credit]
Data and Information Management
Prerequisites: additional credit for COMP 3005.
Prerequisite(s): BUSI 2400 with a grade of C or higher.
Lecture three hours and tutorial one hour a week.

BUSI 3401 [0.5 credit]
Applications Development for Online Environments
Analysis, design and implementation of electronic business systems. Topics include advanced object-oriented programming, advanced SQL programming, XML, using ASP.NET, MTS and SQL Server.
Prerequisites: additional credit for BUSI 4401 (no longer offered).
Prerequisite(s): BUSI 2402 and BUSI 3400, or COMP 3005 (with a grade of C- or higher in each).
Lecture three hours a week.

BUSI 3402 [0.5 credit]
Systems Analysis and Design
Methods of analysis of computer-based information systems. The systems development life cycle, planning, analysis, design, implementation and maintenance. Structured and object-oriented methods will be used. Use of a CASE tool.
Prerequisites: additional credit for SYSC 3100, BUSI 3403, (no longer offered) and BUSI 3404 (no longer offered).
Prerequisite(s): one of BUSI 2400, or COMP 2404, or SYSC 2004 (with a grade of C or higher).
Lecture three hours and tutorials one hour a week.

BUSI 3405 [0.5 credit]
Enterprise Architecture
Exploration of the significance of cross-functional business processes in the context of e-business transformation. Includes process analysis and modeling techniques. Also considers the application of enterprise resource planning systems, workflow technologies, intranets, and extranets to facilitate process flows inside and outside the organization.
Prerequisite(s): BUSI 2400 and BUSI 3103 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3500 [0.5 credit]
Applied Corporate Finance
An examination of the major issues in corporate finance and applied financial management. Topics include: introduction to portfolio theory, the capital asset pricing model, cost of capital, capital structure and dividend policy, lease financing, capital budgeting under uncertainty, mergers and consolidations.
Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each.
Lecture three hours a week.

BUSI 3502 [0.5 credit]
Investments
Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each.
Lecture three hours a week.
BUSI 3512 [0.5 credit]
Derivatives
Derivative instruments and their use for speculation and hedging. Analysis of different markets where instruments trade, and their characteristics. Pricing models highlighted to determine how individuals and corporations can better manage risk; exotics and newer innovations. Precludes additional credit for BUSI 4512 (no longer offered).
Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each.
Lecture three hours a week.

BUSI 3600 [0.5 credit]
Entrepreneurial Strategies
Within the changing environment, an examination of entrepreneurial strategies related to different functional areas for new ventures and small businesses.
Prerequisite(s): BUSI 2800 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3602 [0.5 credit]
Designing Organizational Systems: An Overview
Key models and theories of organizational strategy, structure, processes, effectiveness, and individual and group behavior in organizations. Organizational structure, goals, and effectiveness; leadership, motivation and job design.
Precludes additional credit for BUSI 2101, BUSI 2702, BUSI 2121. No credit for students in B.Com. or B.I.B. programs.
Prerequisite(s): third-year standing in the B.P.A.P.M. program.
Lecture three hours a week.

BUSI 3611 [0.5 credit]
Managing the Family Enterprise
How family businesses are different, what makes them different and how to effectively manage these differences. Challenges arising from the tension between family and business pressures from governance, management and succession planning perspectives.
Prerequisite(s): BUSI 1005 or BUSI 1002, and BUSI 2101 or BUSI 2121 or BUSI 2702, and third year standing.
Lecture three hours a week.

BUSI 3629 [0.5 credit]
Corporate Governance and Strategy
The role of governance in organizations. Mission and vision statements, values and objectives. Shaping, implementation and evaluation of corporate strategy. Management of risk and environmental analysis.
Precludes additional credit for BUSI 4609, BUSI 4709. No credit in B.Com. or B.I.B. programs.
Prerequisite(s): Enrolment in the Post-Baccalaureate Diploma in Accounting, or BUSI 1001 and BUSI 1002, or equivalents.
Lecture three hours a week.

BUSI 3700 [0.5 credit]
Cross-cultural Communication
Principles of communication across cultural boundaries are applied to both interpersonal and commercial interactions. Critical incidents and commentary are analyzed. Students submit periodic reports, evaluated by the instructor at Carleton.
Prerequisite(s): restricted to B.I.B. students who are participating in an academic exchange.
Online course.

BUSI 3701 [0.5 credit]
Practicum in International Business I
Students will engage in an approved international experience, abroad or within Canada, that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 4719 and GINS 3930.
Prerequisite(s): Third-year standing in BIB and permission of the Sprott School of Business.
Experiential Learning Activity

BUSI 3702 [0.5 credit]
Practicum in International Business II
Students will engage in an approved international experience, abroad or within Canada, that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 4719 and GINS 3931.
Prerequisite(s): third-year standing in BIB and permission of the Sprott School of Business.
Experiential learning activity

BUSI 3703 [0.5 credit]
International and Comparative Management
The management of large organizations spanning national boundaries, including domestic firms with international markets, and multinational corporations. Difficulties of maintaining communication and control in international operations in disparate cultural settings.
Prerequisite(s): second-year standing and BUSI 2101 or BUSI 2702 with a grade of C or higher.
Lecture three hours a week.

BUSI 3704 [0.5 credit]
The Environment of International Business
Theories linking environmental factors and business strategy as a basis for study of some major factors and institutions shaping international business strategy. International trade patterns, regionalization, shifts in international finance, research and development and transnational data flows.
Prerequisite(s): third-year standing, and BUSI 2101 or BUSI 2702 with a grade of C or higher; and ECON 1001 and ECON 1002 (or ECON 1000) with a grade of C- or higher in each.
Lecture three hours a week.
BUSI 3705 [0.5 credit]  
**International Buyer Behaviour**  
Behaviour of end-consumers, business and government buyers, and investors in the international context. National, cross-national, and subnational segments and behaviour differences. Adaptation vs. standardisation strategies in the context of socio-psychological, legal, technological, international procurement rules, and other constraints and opportunities.  
Prerequisite(s): third-year standing, BUSI 2204 or BUSI 2208, and BUSI 2702 or BUSI 3703.  
Lecture three hours a week.

BUSI 3706 [0.5 credit]  
**International Business Negotiations**  
Introduction to theory and practice of negotiation in the international business context. Analysis of techniques of conflict resolution and improving ways to reach agreements.  
Prerequisite(s): second-year standing and BUSI 2701 or BUSI 2702 with a grade of C- or higher in each.  
Lecture three hours a week.

BUSI 3800 [0.5 credit]  
**Business Case Analysis**  
Analysis, solution and presentation of complex business issues through cases.  
Includes: Experiential Learning Activity  
Prerequisite(s): minimum 7.0 Major CGPA in B.Com. or B.I.B. and permission of the Sprott School of Business.  
Lecture three hours and tutorial one hour a week.

BUSI 3810 [0.5 credit]  
**Business Development**  
Business development, growth and expansion through financing activities and new customer acquisition.  
Prerequisite(s): BUSI 2800 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 3820 [0.5 credit]  
**Practicum in Business Design**  
Students will apply entrepreneurial concepts and engage in designing an entrepreneurial project. Students will prepare in groups a business plan, including in-depth analysis and recommendations.  
Includes: Experiential Learning Activity  
Prerequisite(s): BUSI 2800 with a grade of C- or higher, and third-year standing.  
Lecture three hours a week.

BUSI 3995 [0.0 credit]  
**Employability Passport III**  
An advanced course in the knowledge and tools required for a career in Business.  
Includes: Experiential Learning Activity  
Prerequisite(s): BUSI 2995.  
Participation in employability events and initiatives throughout the year.

BUSI 3999 [0.0 credit]  
**Co-operative Work Term**  
This course covers the deliverables associated with the co-op work term such as the site visit, work term report submission and employer evaluation.  
Includes: Experiential Learning Activity  
Prerequisite(s): This course is for students on a university approved co-op work term.

BUSI 4005 [0.5 credit]  
**Taxation II**  
An intensive review of federal income tax laws and regulations as significant elements in the planning and decision making process of taxable Canadian corporations. Emphasis on the tax planning function of corporate management and the associated accounting and reporting aspects.  
Precludes additional credit for BUSI 2005.  
Prerequisite(s): BUSI 3005 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 4008 [0.5 credit]  
**Advanced Management Accounting and Control**  
Builds on concepts covered in management and cost accounting courses. Integrates relevant issues from other functional areas: strategic uses of cost management, budgeting, and performance evaluation systems in managerial planning and control.  
Prerequisite(s): BUSI 3008 with a grade of C- or higher.  
Lecture three hours a week.

BUSI 4104 [0.5 credit]  
**Strategic Human Resources Management**  
Systems, strategies and practices used to effectively leverage human capital in organizations. How to think strategically about managing human assets, and what must be done to successfully implement these systems, strategies and practices.  
Prerequisite(s): BUSI 3102 and BUSI 3103 (with a grade of C- or higher in each).  
Lecture three hours per week.

BUSI 4105 [0.5 credit]  
**Managing Change**  
An overview of current thinking about change management. Topics covered include understanding the forces for and barriers to change, diagnosing the environment around change and implementing change.  
Prerequisite(s): third-year standing and BUSI 2101 or BUSI 2702 or BUSI 3602 or PSYC 2801 with a grade of C- or higher.  
Lectures three hours a week.
BUSI 4108 [0.5 credit]
Organizational Learning
Contemporary training and development challenges facing individuals, organizations, and communities and the role of information technology in enhancing individual and collective skills development, capabilities, core competencies, intellectual capital and competitiveness. Prerequisite(s): BUSI 3103 or BUSI 3602 with a grade of C- or higher. Lecture three hours a week.

BUSI 4111 [1.0 credit]
Training and Development
Emphasizes contingency approach to training and development; relevant to organizations of all sizes and resource capacities. Effective training and development is conceptualized as a process that integrates extensive front and back-end planning, implementation, and evaluation activities. Prerequisite(s): third-year standing and BUSI 2101 (or BUSI 2121 or BUSI 2702) with a grade of B- or higher and permission of the Sprott School of Business. Lecture three hours and tutorial one hour per week.

BUSI 4112 [0.5 credit]
Organizational Leadership
Critical examination of theories of leadership and trends in contemporary research; discussion of practical methods for building leadership capacity. Includes: Experiential Learning Activity Prerequisite(s): third-year standing and BUSI 2101 or BUSI 2702 or BUSI 3602 or PSYC 2801 with a grade of C- or higher. Lecture and field work as needed.

BUSI 4117 [1.0 credit]
Creative Thinking
Increases student skills in areas beyond technical expertise, with a focus on the importance of fluidity, risk taking, and idea generation. Emphasis on creativity as a process, with exposure to various techniques and concepts including Design Thinking at multiple levels (individual, group, organization). Includes: Experiential Learning Activity Precludes additional credit for BUSI 3117B taken prior to 2020/21. Prerequisite(s): third-year standing and one of BUSI 2101 or BUSI 2702 with a grade of C- or higher and permission of the Sprott School of Business. Lecture three hours a week.

BUSI 4129 [0.5 credit]
Managing the Arts
Challenges of managing arts organizations with emphasis on the changing environment of arts consumption and funding. Tensions arising from blending artistic and aesthetic dimensions with functional considerations when judging organizational and personal issues form a continuing theme. Prerequisite(s): third year standing. Also offered at the graduate level, with different requirements, as MGMT 5129, for which additional credit is precluded. Lecture three hours a week.

BUSI 4201 [0.5 credit]
Marketing Metrics
An overview of essential marketing metrics used for enhancing marketing decisions. The course consists of seven core modules: share metrics, margins and profits, pricing, product and portfolio management, sales force management, promotion profitability, and customer profitability. Prerequisite(s): BUSI 1005 and BUSI 2208. Lecture three hours a week.

BUSI 4203 [0.5 credit]
Marketing In Not-for-Profit Organizations
Theories and practices of marketing in not-for-profit organizations including government. Similarities and differences between marketing in not-for-profit and for-profit organizations, and the key issues faced by marketers in developing marketing strategies in not-for-profit organizations. Prerequisite(s): third-year standing and BUSI 2204 or BUSI 2208 with a grade of C or higher. Lecture three hours a week.

BUSI 4205 [0.5 credit]
International Marketing Strategy
The marketing function in international markets from a strategic and managerial perspective. Environments of foreign markets in relation to marketing research, international branding and positioning, and product, price, distribution, and communication strategies. International expansion methods and foreign market evaluation and selection. Prerequisite(s): third-year standing and BUSI 2204 or BUSI 2208 with a grade of C- or higher. Lecture three hours a week.

BUSI 4208 [0.5 credit]
Marketing Management
In depth analysis and applications of the managerial aspects of marketing. Marketing strategy development and implementation theory and practice. Prerequisite(s): third year standing, BUSI 2208 and one of BUSI 3205 or BUSI 3207 with a grade of C or higher in each. Lecture three hours a week.
BUSI 4209 [0.5 credit]
Consumer Culture Theory
Consumer behaviour from a macro and interpretive approach, as a social and cultural phenomenon; the relationships between consumers, the marketplace and cultural meaning.
Precludes additional credit for BUSI 4206 (no longer offered).
Prerequisite(s): third year standing and BUSI 3209 with a grade of C or higher.
Lecture three hours a week.

BUSI 4229 [0.5 credit]
Marketing in the Arts and Culture Sectors
Advanced study of marketing within the arts and culture sectors. Facilitates sophisticated understanding of the knowledge and skills required for marketing managers to respond to changing market environments in order to bring arts and culture offerings to their target audiences.
Prerequisite(s): third year standing and BUSI 2204 or BUSI 2208 with a grade of C or higher.
Also offered at the graduate level, with different requirements, as MKTG 5229, for which additional credit is precluded.
Lecture three hours a week.

BUSI 4301 [0.5 credit]
Decision Models and Analytics
Management science models and methods in business analytics for decision-making with less risk and better outcomes. Emphases on practical applications. Data integration; model formulation, implementation, and solutions, and managerial insights. Applications development and deployment.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 2300, ECON 4005.
Prerequisite(s): third-year standing and BUSI 2301 with a grade of C or higher.
Lecture three hours and lab one hour per week.

BUSI 4302 [0.5 credit]
Management of Quality
Quality concepts and methods surrounding the definition, mapping, implementation, improvement of business processes in organizations and global supply chains.
Prerequisite(s): third-year standing, BUSI 2301 with a grade of C or higher and STAT 2606 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4304 [0.5 credit]
Procurement and Contracting
Core supply chain procurement processes in the private and public sectors involved in the acquisition of goods and services, including sourcing, purchasing, contracting, supplier collaboration and relationship development and management. Emphasis on concepts, principles, practices, and techniques.
Prerequisite(s): third-year standing; BUSI 2301 with a C grade or higher.
Lecture three hours a week.

BUSI 4331 [0.5 credit]
Artificial Intelligence and E-Supply Chain Technologies
Acquire hands-on skills to design and develop innovative business models and Artificial Intelligence (AI) systems on top of big real-world data aiming to create value and solve problems that would enhance the performance of e-supply chains along its multiple dimensions.
Precludes additional credit for BUSI 4431 (no longer offered).
Prerequisite(s): third year standing and BUSI 2301 and BUSI 2402 with a grade of C or higher in each.
Lecture three hours a week and lab one hour a week.

BUSI 4400 [0.5 credit]
IS Strategy, Management and Acquisition
Comprehensive treatment of current trends and management issues associated with information systems within organizations of local, national and international scope. Issues and techniques of information systems planning, administration, resource management and new technology adoption. Case studies are used.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing, BUSI 2400 and BUSI 3103 (or BUSI 3602) with a grade of C- or higher in each.
Lecture three hours a week.

BUSI 4404 [0.5 credit]
IT Infrastructure
Challenges and issues managers face in assembling the infrastructure for IT service delivery. IT Service levels, data communications, networks (LAN, MAN, WAN, wireless), internetworking, SOA, web services, SaaS, server and storage virtualization, network security, business continuity and disaster recovery.
Prerequisite(s): third-year standing and BUSI 2400 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4406 [0.5 credit]
Business Analytics
Prerequisite(s): third-year standing and BUSI 2400 with a grade of C or higher.
Lecture three hours a week.

BUSI 4408 [0.5 credit]
Social Analytics
Covers the process, tool and techniques necessary to acquire, clean and analyze text that has been generated on social platforms. Social network analysis, sentiment analysis, topic extraction, co-occurrence analysis.
Prerequisite(s): BUSI 2400, BUSI 2208, STAT 2607, 3rd year standing. Restricted to students enrolled in B.Com, BIB, and the B.Econ Economic Data Science Concentration.
Lecture three hours a week.
BUSI 4500 [0.5 credit]
Advanced Corporate Finance
An in-depth examination of some of the major theoretical issues in corporate finance. This course requires analyses and presentations of both articles from the finance literature and case studies.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing; and BUSI 3500, BUSI 3502, BUSI 3512 with a grade of C- or higher in each and STAT 2607 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4502 [0.5 credit]
Portfolio Management
Analysis of investment requirements for individuals and institutional investors: liquidity, risk and return; portfolio design, construction, management and control; performance measurement; capital market theory. Prerequisite(s): fourth-year standing; and BUSI 3500, BUSI 3502 and BUSI 3512 with a grade of C- or higher in each and STAT 2607 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4503 [0.5 credit]
Applied Portfolio Management
Participants of the Sprott Student Investment Fund will be exposed to equity research, analysis, valuation, and portfolio composition. The course allows fund members to fully understand stock selection and fund management, and expose them to the methods and techniques used by industry.
Includes: Experiential Learning Activity
Prerequisite(s): BUSI 3502 and permission of the Sprott School of Business.
Workshops three hours a week.

BUSI 4504 [0.5 credit]
International Finance
Management of corporate finance as it is affected by the requirements of international business. Issues related to international acquisitions, global investments, volatile exchange rates and hedging techniques. Role of international markets in financing corporate activity. Precludes additional credit for BUSI 3504 (no longer offered) and BUSI 3505 (no longer offered).
Prerequisite(s): BUSI 2505 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4505 [0.5 credit]
Global Financial Markets and Institutions
Comprehensive view of the world’s financial markets and institutions. The primary focus will be on the purpose and practice of financial institutions, and the specifics of the financial instruments available to the firm and investor. Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each.
Lecture three hours a week.

BUSI 4510 [0.5 credit]
Mergers and Acquisitions
The theory and practice of mergers and acquisitions; the best ways to analyze, design and implement mergers and acquisitions transactions. A highly practical planning-based approach to managing the acquisition process will be employed.
Prerequisite(s): BUSI 3500 and BUSI 3502 with a grade of C- or higher in each, and STAT 2607 with a grade of C- or higher.
Lecture three hours per week.

BUSI 4511 [0.5 credit]
Fixed Income Analysis
Valuation of fixed income securities and interest rate derivatives including bonds, mortgage- and asset-based securities. Analytic tools used in bond portfolio and interest rate risk management including yield curve construction, duration and convexity, and term structure models.
Prerequisite(s): BUSI 3502, BUSI 3512 with a grade of C- or higher in each, and STAT 2607 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4515 [0.5 credit]
Micro Finance
Theory and practice of microfinance, its achievements and current challenges; basic skills needed to manage microfinance institutions. The future of microfinance and of financing for development in general. A mix of cases and lectures will be used.
Includes: Experiential Learning Activity
Prerequisite(s): BUSI 2505 with a grade of C+ or higher, STAT 2606 and ECON 2009 with a grade of C- or higher in each, fourth year standing and enrollment in the Global Financial Management and Systems concentration in the BIB.
Also offered at the graduate level, with different requirements, as FINA 5515, for which additional credit is precluded.
Lecture three hours a week.

BUSI 4601 [0.5 credit]
Business Ethics
Use of ethical reasoning to analyze business decisions. The ethical content of these decisions. The role of ethics in business situations. Practice in ethical reasoning. Major ethical systems. Precludes additional credit for BUSI 4705.
Prerequisite(s): fourth-year standing B.Com. Note that B.Com. concentration in International Business students require BUSI 4705.
Lectures three hours a week.
BUSI 4607 [0.5 credit]  
Management of Technology and Innovation  
Integration of technology and strategy; design of technological strategy; development of new business around new technology; and management of corporate research and development, including pre-competitive consortia.  
Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208, and BUSI 3103 with a grade of C- or higher in each.  
Lecture three hours a week.

BUSI 4608 [0.5 credit]  
Canadian Business History  
The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business-government relations).  
Also listed as HIST 3205.  
Prerequisite(s): fourth-year standing in B.Com. or B.I.B.  
Lectures three hours a week.

BUSI 4609 [0.5 credit]  
Strategic Management  
Analysis and evaluation of the organization's corporate and business strategies; integration and synthesis of knowledge acquired in the program by application of acquired functional skills to strategic decision making.  
Precludes additional credit for BUSI 3629, BUSI 4709.  
Prerequisite(s): fourth-year standing in all B.Com. and successful completion of all 2000- and 3000-level courses in the Major requirement. Note that B.Com. concentration in International Business students require BUSI 4709.  
Lectures three hours a week.

BUSI 4704 [0.5 credit]  
The Business Environment in Europe  
The economic, political, legal, and cultural environment for doing business in the European Union and other regions in Europe. Patterns of foreign trade and investment, market characteristics, science and technology, regulation and European integration, and business culture.  
Also listed as EURR 4704.  
Precludes additional credit for EURR 4006 (no longer offered), BUSI 4604 (no longer offered).  
Prerequisite(s): third-year standing.  
Seminar three hours a week.

BUSI 4705 [0.5 credit]  
Ethics and Cross-cultural Interaction  
Perceptions and behaviors that characterize interactions among individuals from various cultural backgrounds, with emphasis on ethical issues that may arise when business crosses cultural boundaries. Various systems, both organizational and individual, for dealing with contrasting expectations are discussed.  
Precludes additional credit for BUSI 4601.  
Prerequisite(s): fourth-year standing in B.Com. (International Business Concentration) or B.I.B., and BUSI 2702 or BUSI 3703.  
Lecture three hours a week.

BUSI 4706 [0.5 credit]  
International Human Resource Management  
Theoretical and process issues in the recruitment, selection, training, evaluation and repatriation of personnel in multi-country organizations. Issues are examined from the perspective of organizations, expatriates and local employees of multinational firms.  
Prerequisite(s): third-year standing, BUSI 3102, and one of BUSI 2702 or BUSI 3703.  
Lecture three hours a week.

BUSI 4707 [0.5 credit]  
Regionalism and Globalization  
Trends in globalization versus supra- and sub-national regionalism. Role of international institutions (e.g. OECD, WTO). Strategy adaptation and integration within and across trade blocs (e.g. NAFTA, EU, Mercosur, ASEAN). Strategies for sub-national markets with similarities across different countries.  
Prerequisite(s): third-year standing in B.Com., B.I.B., or Minor in Business, and BUSI 2701 or BUSI 2702.  
Lectures three hours a week.

BUSI 4708 [0.5 credit]  
International Expansion and Operations  
Internationalization process. Methods of international expansion including exporting, greenfield investment, acquisition, joint venture, and licensing. Theories of international market selection, investment location, and market service.  
Prerequisite(s): fourth-year standing, and BUSI 2702 or BUSI 3703.  
Lecture three hours a week.

BUSI 4709 [0.5 credit]  
Strategic Management for International Business  
Development and implementation of strategies within and across international markets. Emphasis on developing strategic perspectives that incorporate the environment, the state of the industry, and the capabilities of the firm. Integrates skills, concepts and theories learned in functional areas.  
Precludes additional credit for BUSI 3629, BUSI 4609.  
Prerequisite(s): fourth-year standing in B.Com. (International Business Concentration) or B.I.B., and successful completion of all 2000- and 3000-level courses in the Major requirement.  
Lectures three hours a week, tutorial one hour a week.

BUSI 4710 [0.5 credit]  
International New Ventures  
Challenges facing entrepreneurs in the creation and growth of competitive knowledge-based new international ventures or ‘born globals’. Identification of opportunities abroad, strategies and logistics, sourcing, international deal making and business models.  
Prerequisite(s): BUSI 2702 or BUSI 3703, and third-year standing.  
Lecture three hours a week.
BUSI 4717 [0.5 credit]
Managing Globalization in Emerging Economies
Critical examination of the managerial and institutional issues of globalization from the perspectives of emerging economies. Indigenous and international institutions' role in the evolution of a competitive and inclusive global economy and society. Discerning lessons of experience for newly globalizing societies.
Precludes additional credit for BUSI 4902 (no longer offered).
Prerequisite(s): fourth year standing in B.Com, BIB, or Minor in Business, ECON 1001 and ECON 1002 (or ECON 1000).
Lectures three hours a week.

BUSI 4719 [0.5 credit]
Practicum in International Business
Students will engage in an approved international experience, abroad or within Canada (can include SSCG), that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3701, BUSI 3702.
Prerequisite(s): third-year standing in B.Com. International Business concentration and permission of the Sprott School of Business.

BUSI 4800 [0.5 credit]
Sprott Student Consulting II
An experiential work environment in which students interact with real clients as a consultant. Various types of projects are possible depending on the company and their goals/needs. Companies may be internal (i.e. Carleton, Sprott), or external (i.e. not for profit, for profit, start-ups, entrepreneurs).
Includes: Experiential Learning Activity
Prerequisite(s): Permission of the Sprott School of Business.
Also offered at the graduate level, with different requirements, as BUSI 5997, for which additional credit is precluded.
Significant industry/project/service consultancy exposure.

BUSI 4810 [0.5 credit]
Practicum in Business Creation
Students apply concepts and engage in groups to implement the design of an entrepreneurship project per their business plan developed in BUSI 3820. The projects provide opportunities for experiential learning.
Includes: Experiential Learning Activity
Prerequisite(s): BUSI 3820.
Lectures three hours per week.

BUSI 4901 [0.5 credit]
Topics in Business I
A selected topics course may be offered. Topics may vary. Consult the School's website for available topics and prerequisite information. Eligibility for this course to serve as an option for specific concentrations is to be established by the School.
Prerequisite(s): Vary based on section. Please refer to sprott.carleton.ca/registration for section specific prerequisites.
Lecture three hours a week.

BUSI 4902 [0.5 credit]
Topics in Business II
A selected topics course may be offered. Topics may vary. Consult the School's website for available topics and prerequisite information. Eligibility for this course to serve as an option for specific concentrations is to be established by the School.
Prerequisite(s): Vary based on section. Please refer to sprott.carleton.ca/registration for section specific prerequisites.
Lecture three hours a week.

BUSI 4904 [1.0 credit]
Directed Studies I
Reading course on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.
Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4905 [0.5 credit]
Directed Studies II
Reading course on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.
Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4906 [1.0 credit]
Research Project for Business
Provides students with opportunity to conduct research in their area of interest and present the research in an undergraduate thesis format. Conducted under the supervision of a faculty advisor from Sprott, with the specific deliverable determined by Supervisor and student, and approved by Sprott School.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4995 [0.0 credit]
Employability Passport IV
An advanced course in the knowledge and tools required for a career in Business.
Includes: Experiential Learning Activity
Prerequisite(s): BUSI 3995.
Participation in employability events and initiatives throughout the year.
Canadian Studies (CDNS)

Canadian Studies (CDNS) Courses

CDNS 1000 [1.0 credit]
Introduction to Canadian Studies
Introduction to interdisciplinary Canadian Studies and diversity's role in defining Canada. Examination of the relationship between national identity and values in an evolving Canada. Topics include: Indigenous peoples, language and ethnicity, race, technology, gender, the arts, and international relations.
Two hour lecture, one hour weekly discussion group.

CDNS 1001 [0.5 credit]
Studying Canada
Introduction to interdisciplinary Canadian Studies and approaches to the critical study of Canada.
Lectures/groups three hours a week.

CDNS 1002 [0.5 credit]
Themes in the Study of Canada
Examination of various themes and issues that affect Canadians and Canadian society. Topics may include Indigenous peoples, literature, language and ethnicity, race, gender, culture and cultural producers, the environment, and international relations.
Lectures/groups three hours a week.

CDNS 1101 [0.5 credit]
Ottawa: Exploring National Institutions
An interdisciplinary examination of Ottawa, looking at its history, evolution, and role as Canada's capital. This course investigates various national institutions related to public policy, governance, history, culture and the arts. Field trips and topics vary from year to year.
Includes: Experiential Learning Activity
Lecture/groups three hours a week.

CDNS 1102 [0.5 credit]
Introduction to Canada and the World
Introductory examination of interdisciplinary themes, ideas, and debates related to Canada and its place in the world. Topics vary from year to year.
Lecture/groups three hours a week.

CDNS 2000 [0.5 credit]
Debating Canada
An in-depth examination of key debates that have shaped the nature of Canada, focusing on major thinkers and the debates their ideas produced. Topics vary annually.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.

CDNS 2210 [0.5 credit]
Introduction to the Study of Canadian Culture
The challenges of constructing a national culture in Canada. Topics may include: colonialism and its cultural legacies, cultural nationalism, cultural policies and institutions, popular culture, technology, regionalism, fears of Americanization, gender, multiculturalism, globalization and cultural hybridity.
Precludes additional credit for CDNS 2200.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.

CDNS 2300 [0.5 credit]
Critical Nationalism
This course questions whether a national identity is possible or even desirable within an increasingly diverse and complex Canada. Examination of the construction of Canadian identities, competing nationalisms within Canadian borders and critical evaluation of the role of nationalism.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.

CDNS 2400 [0.5 credit]
Heritage Conservation in Canada
Approaches to heritage conservation. Topics include built heritage, movable heritage, collections and museums, and intangible heritage. Heritage as a source of memory and identity in Canadian and Aboriginal life.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours a week.

CDNS 2510 [0.5 credit]
Introduction to Québec Society (English version)
This course surveys geographical, historical, demographic, cultural, political and social developments in Québec, relations with English Canada and debates on identity and nationalism. Also available in French as CDNS 2511/ FINS 2511.
Also listed as FINS 2510.
Precludes additional credit for CDNS 2511 and FINS 2511.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lectures/groups three hours per week.

CDNS 2511 [0.5 credit]
Introduction à la société et à la culture québécoises (version française)
Ce cours permettra de découvrir et d'analyser des référents dominants de la trame historique du Québec de même que les débats entourant l'identité et le nationalisme et les relations avec le Canada anglais.
Also listed as CDNS 2510/FINS 2510 (English), FINS 2511 (French).
Precludes additional credit for CDNS 2510/ FINS 2510.
Prerequisite(s): niveau de deuxième année ou permission de L'École d'études canadiennes.
Exclusivement en ligne. Équivalent d'un cours de trois heures par semaine, accessible toute la semaine.
CDNS 2600 [0.5 credit]
Branding Canada
What does it mean to sell a country the same way one sells coffee? This course examines the rise of nation-branding in Canada. It discusses the ways governments brand Canada internationally and domestically and the ways corporations brand themselves as "Canadian" to customers. Two hour lecture and one hour discussion group a week.

CDNS 3000 [0.5 credit]
Producing Knowledge
Investigates the theory and methods used in qualitative approaches to research, offering hands-on experience and discussion of the underlying beliefs and claims implicit in scholarly work. Examines the ethical and practical dilemmas confronting researchers and develops student skills in gathering, interpreting, and presenting knowledge. Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Canadian Studies or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3400 [0.5 credit]
Feminists and Feminism in Canada
Interdisciplinary examination of feminism's impact on Canadian history, culture and politics, and Canadian approaches to feminism in a global context. Surveys the role of feminist thinkers, activists and organizations in shaping Canadian society. Also listed as WGST 3400.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3500 [0.5 credit]
Interfaces between English and French Canadian Cultures
Exploration of intercultural encounters between French and English Canadians in political, popular and "official" cultures, through an examination of media, art, music, literature, cinema and the built environment. Also listed as FINS 3550.
Prerequisites: additional credit for CDNS 2500 and FINS 2500.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3600 [0.5 credit]
Cultural Politics and Identities in Canada
Interdisciplinary study of questions related to identity, belonging, and Canadianness. Intersections of individual and group dimensions of "being Canadian" and state efforts to define the Canadian identity. Topics may include: religion, sexuality, immigrant and diasporic relations, race and ethnicity, region, nationalisms, and multiculturalism.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3610 [0.5 credit]
The Canadian Political Economy Tradition
An examination of the political economy tradition in Canada, looking at explanations of Canada's political, economic, social and cultural development, and Canada's evolving position in the global economy.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3620 [0.5 credit]
Canada-US Relations
Comparative, interdisciplinary examination of Canada and the United States, including the evolution of the Canada-US relationship. Historical, sociological, cultural, and political approaches are used. Topics covered may include the economy, defence, foreign policy, diplomacy, borderlands, Indigenous peoples, and culture.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3700 [0.5 credit]
Cultural Traditions in Canada
Aspects of cultural heritage, folklore and/or cultural traditions in Canadian folk art, music, dance, storytelling and performance. The genesis of these various expressions, and the cultural contexts that have ensured their survival.
Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 3901 [0.5 credit]
Selected Topics in Canadian Studies
Topics vary from year to year.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 4000 [0.5 credit]
Capstone Seminar in Advanced Research in Canadian Studies
Emphasis on refining analytic and research skills, including teamwork skills and using knowledge to solve problems outside the university. Students will engage in a collective research project in partnership with a local, national or international organization.
Includes: Experiential Learning Activity
Prerequisite(s): CDNS 3000 and fourth-year standing in Canadian Studies or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.
CDNS 4010 [0.5 credit]
Language, Culture, and Power in Canada
The relationship between language use and political, economic, and cultural power in Canada. Topics may include cultural and linguistic pluralism, bilingualism, Aboriginal language revitalization, discourses of endangerment, the role of media and the state and in legitimizing language use.
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 4200 [0.5 credit]
Canadian Popular Culture
An interdisciplinary seminar using cultural studies methods to explore how popular cultural texts, images, rituals and practices are constructed, disseminated, regulated, consumed and reappropriated by Canadian institutions, corporations, cultural groups and individuals.
Prerequisite(s): fourth-year honours standing, or permission of the School.
Seminar three hours a week.

CDNS 4300 [0.5 credit]
Contested Spaces and Communities
Exploration of the relationship between space, culture, and identities in Canada. Analysis of concepts, practices and conflicts which may include: urban/rural space, the suburbs, regionalism, gender and space, public/private space, national spaces, borderlands, indigenous territories, cultural survival, collective identity, and memory.
Prerequisite(s): fourth-year honours standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 4400 [0.5 credit]
Cultural Landscape and Cultural Identity in Canada
Cultural landscape appreciation and the development of Canadian individual and collective cultural identities, through the lenses of history, geography, planning, and representational/literary sources of expression. Cultural landscapes as a tool for understanding physical and mental landscapes and their shaping of identity.
Prerequisite(s): fourth-year honours standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 4403 [0.5 credit]
Heritage Conservation and Sustainability
Exploration of the recent shift in heritage conservation discourse that embraces objectives of environmental, social, and economic sustainability. Investigation of synergies and gaps between natural and cultural conservation ideas. Introduction to theory, principles and practices through analysis of Canadian and international research, policy and projects.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Also offered at the graduate level, with different requirements, as CDNS 5403, for which additional credit is precluded.
Seminar three hours a week.

CDNS 4500 [0.5 credit]
Canada and the World
Interdisciplinary examination of Canada's role in the global political economy and its impact on issues such as work, community, public services, and the state.
Prerequisites additional credit for CDNS 3301.
Seminar three hours a week.

CDNS 4510 [0.5 credit]
Québec Studies
Advanced seminar focusing on selected aspects of Québec history, society, culture and/or politics.
Also listed as FINS 4510.
Prerequisites additional credit for CDNS 3510 (no longer offered), FINS 3510 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

CDNS 4800 [1.0 credit]
Internship Practicum
Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.
Includes: Experiential Learning Activity
Prerequisites additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.
Prerequisite(s): permission of the School and fourth-year Honours standing in a Indigenous and Canadian Studies program.
CDNS 4801 [0.5 credit]
Internship/Practicum
Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements. Includes: Experiential Learning Activity
Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.
Prerequisite(s): permission of the School and fourth-year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4802 [0.5 credit]
Internship/Practicum
Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements. Includes: Experiential Learning Activity
Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.
Prerequisite(s): permission of the School and fourth year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4901 [0.5 credit]
Selected Topics in Canadian Studies
Topics vary from year to year. Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4902 [0.5 credit]
Selected Topics in Canadian Studies
Topics vary from year to year. Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4903 [0.5 credit]
Études dirigées I
Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (Mention : Français). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4904 [0.5 credit]
Études dirigées II
Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (Mention : Français). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.
Prerequisite(s): permission of the School.

CDNS 4905 [0.5 credit]
Directed Studies I
An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year Graduate students. Includes supervised reading and written work in a Canadian Studies area.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4906 [0.5 credit]
Directed Studies II
An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.
Prerequisite(s): permission of the School of Indigenous and Canadian Studies.

CDNS 4907 [1.0 credit]
Directed Studies III
An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.
Prerequisite(s): permission of the School.

Centre for Initiatives in Education (CIED)

Centre for Initiatives in Education (CIED) Courses

CIED 1001 [0.5 credit]
Selected Topics in Academic Discourse
Selected topics in academic discourse. Topics vary from year to year, and/or section to section, as determined by the Centre for Initiatives in Education.
Lecture three hours a week.

CIED 1200 [0.5 credit]
Special Topics Seminar
The development of academic writing, reading, research and analytical skills through the examination of selected topics in the instructor's field of expertise.
Prerequisite(s): restricted to returning students in the Enriched Support Program/Indigenous Enriched Support Program.
Seminar three hours a week.

CIED 1200 [0.5 credit]
Special Topics Seminar
The development of academic writing, reading, research and analytical skills through the examination of selected topics in the instructor's field of expertise.
Prerequisite(s): restricted to returning students in the Enriched Support Program/Indigenous Enriched Support Program.
Seminar three hours a week.

CIED 2100 [1.0 credit]
Academic Discourse: Theory and Practice
Inquiry into the theoretical nature of academic language, with emphasis on the social nature of academic writing. Incorporates practical strategies for understanding and enhancing growth in writing.
Prerequisite(s): restricted to returning students in the Enriched Support Program.
Seminar three hours a week.
Chemistry (CHEM)

Chemistry (CHEM) Courses

CHEM 0999 [0.0 credit]
Chemistry Matters

CHEM 1001 [0.5 credit]
General Chemistry I
This maths-intensive course covers introduction to periodicity, gas laws, equilibrium, bonding, electrochemistry, and organic chemistry. This is a specialist course for students intending to take second year chemistry.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1005, CHEM 1101.
Prerequisite(s): Ontario 4U/M in Chemistry or equivalent.
Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1002 [0.5 credit]
General Chemistry II
This maths-intensive course covers an introduction to solution chemistry, acids and bases, thermodynamics, and kinetics. Specialist course for students intending to take second year chemistry.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1006.
Prerequisite(s): CHEM 1001 or CHEM 1005.
Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1003 [0.5 credit]
The Chemistry of Food, Health and Drugs
Aspects of chemistry relating to food, food additives, drugs (illicit and beneficial) and their relation to metabolism and health. Topics may include: proteins, carbohydrates, fats, vitamins, cofactors, enzymes, steroids, electrolyte and pH balance, trace elements. Available only as a free option for Science students.
Prerequisite(s): a course in Chemistry (e.g. Ontario Grade 11).
Lectures three hours a week.

CHEM 1004 [0.5 credit]
Drugs and the Human Body
No science background required. Topics include drug origins, laws, metabolism and dependence, pharmaceutical industry, over the counter medications, placebo effect, antibiotics, pain killers, stimulants, alcohol, marijuana, hallucinogens, birth control and steroids.
Students in Science programs may use this course only as a free elective.
Lectures three hours a week.

CHEM 1005 [0.5 credit]
Elementary Chemistry I
Introduction to stoichiometry, periodicity, gas laws, equilibrium, bonding, and organic chemistry with emphasis on examples of relevance to the life sciences. For students who lack the prerequisite for CHEM 1001 or who are not intending to take upper year chemistry.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1001, CHEM 1101.
Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1006 [0.5 credit]
Elementary Chemistry II
Introduction to solution chemistry, acids and bases, thermodynamics, and kinetics, with emphasis on examples of relevance to the life sciences. For students who lack the prerequisite for CHEM 1002 or who are not intending to take upper year chemistry.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1002.
Prerequisite(s): CHEM 1001 or CHEM 1005.
Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1007 [0.5 credit]
Chemistry of Art and Artifacts
The chemistry of arts and artifacts created throughout the ages (Paleolithic, Neolithic, Bronze, Iron, Middle and Modern) will be examined. Basic chemical principles will be explored and reviewed when required. Students in Science programs may use this course only as a free elective.
Lectures three hours a week.

CHEM 1101 [0.5 credit]
Chemistry for Engineering Students
Topics include stoichiometry, atomic and molecular structure, thermodynamics and chemical equilibrium, acid-base chemistry, carbon dioxide in water, alkalinity, precipitation, electrochemistry, kinetics and basic organic chemistry. Laboratory component emphasizes techniques and methods of basic experimental chemistry.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1001, and CHEM 1005.
Prerequisite(s): Ontario 4U/M in Chemistry or equivalent.
Lectures three hours a week, laboratory three hours every other week.
CHEM 2103 [0.5 credit]
Physical Chemistry I
Basic principles of thermodynamics. Development of the laws of thermodynamics, enthalpy, entropy and free energy, and their applications to phase equilibria, electrochemistry, and kinetics. Brief introduction to quantum mechanics.
Includes: Experiential Learning Activity
Precludes additional credit for BIOL 2300, CHEM 2101 (no longer offered) and CHEM 2102 (no longer offered).
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002, MATH 1004, MATH 1107, PHYS 1007 and PHYS 1008 or PHYS 1003 and PHYS 1004.
Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 2203 [0.5 credit]
Organic Chemistry I
Structure, organization, and scope of organic chemistry including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification. Training in the handling and purification of organic compounds, organic chemical reactions, and the use of infrared spectroscopy.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2207.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.
Lectures three hours a week and laboratory three hours a week.

CHEM 2204 [0.5 credit]
Organic Chemistry II
Further discussion of chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of chemical reactions of organic functional groups. Laboratory experience in organic chemical reactions, use of infrared spectroscopy and other techniques to determine the structure of unknown organic compounds.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2208 and CHEM 2206.
Prerequisite(s): CHEM 2203.
Lectures three hours a week and laboratory three hours a week.

CHEM 2207 [0.5 credit]
Introduction to Organic Chemistry I
Structure, organization, and scope of organic chemistry, including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification.
Precludes additional credit for CHEM 2203.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.
Lectures three hours a week.

CHEM 2208 [0.5 credit]
Introduction to Organic Chemistry II
Further discussion of the chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of chemical reactions of the organic functional groups.
Precludes additional credit for CHEM 2204 and CHEM 2206.
Prerequisite(s): CHEM 2207 or CHEM 2203.
Lectures three hours a week.

CHEM 2302 [0.5 credit]
Analytical Chemistry I
Introduction to quality assurance measures, calibration strategies and the fundamentals of solution-based analytical measurement processes. Qualitative and quantitative analysis using potentiometric and electrolysis techniques including ion selective electrodes, coulometry, amperometry and voltammetry. Redox, acid/base and EDTA titrations in the context of various buffer systems.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2300.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002 or CHEM 1101 and (MATH 1007 or MATH 1004).
Lectures three hours a week, laboratory three hours a week.

CHEM 2400 [0.5 credit]
Independent Research I
Students carry out a laboratory research project under the supervision of a faculty member from the Department of Chemistry. A research report must be submitted by the last day of classes for evaluation by the Chair and Faculty supervisor.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to Honours students having second-year standing in a Chemistry program with an overall CGPA of 10.0 or higher, and approval of the Chair and a Faculty supervisor.
Laboratory research for at least three hours a week over two terms.
CHEM 2501 [0.5 credit]  
Introduction to Inorganic and Bioinorganic Chemistry  
The basic concepts of inorganic chemistry, including the origins of elemental properties, simple theories of bonding, intermolecular forces, main group and transition metal chemistry, coordination chemistry. Inorganic ions in biochemistry, including ion transport and storage, oxygen carriers and hydrolases, redox proteins. Precludes additional credit for CHEM 3506. 
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002. 
Lectures three hours a week, tutorial one hour a week.

CHEM 2800 [0.5 credit]  
Foundations for Environmental Chemistry  
A basis of chemistry needed to understand the environment: composition of the atmosphere and natural waters; equilibrium; surface properties; kinetics and spectroscopy; physical and chemical properties of chemicals in the environment. Limited enrolment course. Priority is given to students in Environmental Science/Engineering. 
Includes: Experiential Learning Activity  
Prerequisite(s): CHEM 1006 with a minimum grade of B- or CHEM 1002, or CHEM 1101, (MATH 1007 or MATH 1004). 
Lectures three hours a week, laboratory three hours a week.

CHEM 3100 [0.5 credit]  
Physical Chemistry II  
Further development of thermodynamic equations and their applications to mass changes, chemical potential, chemical equilibria, transport properties and advanced phase equilibria. Use of partial differentials and development of Maxwell's relations will also be covered. 
Includes: Experiential Learning Activity  
Precludes additional credit for CHEM 2102. 
Prerequisite(s): CHEM 2103 or BIOC 2300, and MATH 1005 or MATH 2007. 
Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 3101 [0.5 credit]  
Quantum Chemistry  
Classical equations of motion, harmonic oscillator, diatomic and polyatomic molecules, molecular mechanics, quantum mechanics, Schrödinger equation and wave functions, vibrational spectra, hydrogen atom, quantum numbers, electronic spectra, bonding in small molecules. 
Includes: Experiential Learning Activity  
Precludes additional credit for CHEM 2102. 
Prerequisite(s): CHEM 2103, MATH 2007 and MATH 2008. 
Lectures three hours a week, tutorial one hour per week.

CHEM 3102 [0.5 credit]  
Methods of Computational Chemistry  
Molecular orbital theory of organic and inorganic chemistry. Applications of computational chemistry to chemical bonding, aromaticity, molecular spectra. Semi-empirical and ab initio electronic structure theory. Comparison of theoretical methods used to obtain molecular properties. Introduction to statistical thermodynamics. 
Includes: Experiential Learning Activity  
Prerequisite(s): CHEM 3101 or PHYS 3701. 
Lectures and problems three hours a week.

CHEM 3106 [0.5 credit]  
Computational Chemistry Methods Laboratory  
Industry-standard quantum chemistry software is used for Hartree-Fock, density functional, and post Hartree-Fock correlation calculations. Results are applied to problems in molecular structure, thermodynamics, vibrational spectroscopy, and kinetics. The UNIX operating system, Bourne-shell programming, and Python scripting are also introduced. 
Includes: Experiential Learning Activity  
Prerequisite(s): CHEM 3102 (may be taken concurrently). 
Laboratory three hours a week.

CHEM 3107 [0.5 credit]  
Experimental Methods in Nanoscience  
Thin film production and characterization, scanning electron microscopy, synthesis of metal nanoparticles and particle size determination, computational modeling of nanostructures. 
Includes: Experiential Learning Activity  
Prerequisite(s): CHEM 3100. 
Laboratory four hours a week.

CHEM 3201 [0.5 credit]  
Advanced Organic Chemistry I  
Instrumental methods for determining organic structures. Selected organic reactions with emphasis on mechanisms and reactive intermediates. 
Prerequisite(s): CHEM 2204 or CHEM 2206 or CHEM 2208. 
Lectures three hours a week, tutorial one and a half hours per week.

CHEM 3202 [0.5 credit]  
Advanced Organic Chemistry II  
Continued mechanistic survey of additional organic reactions with emphasis on synthetic usefulness and stereochemistry. Interspersed with selected topics such as instrumental methods, photochemistry, literature of organic chemistry, natural and synthetic polymers, heterocycles, terpenes and alkaloids. 
Prerequisite(s): CHEM 3201 or equivalent. 
Lectures three hours a week, tutorial one and a half hours per week.
CHEM 3205 [0.5 credit]
Experimental Organic Chemistry
A laboratory-based course including advanced concepts and techniques in organic synthesis, structure determination, and the rates and mechanisms of reactions. Students are responsible for literature surveys, acquisition of theoretical background, and design of experimental procedures.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 2204 or CHEM 2206 and CHEM 3201.
Laboratory four hours a week.

CHEM 3305 [0.5 credit]
Advanced Analytical Chemistry Laboratory
Advanced instrumentally based techniques of analysis. Emphasis on identification and quantitation of low-level contaminants in environmental matrices using chromatographic and spectroscopic methods, including sampling, cleanup, measurement and reporting of results.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 2302 or CHEM 2303.
Laboratory four hours a week.

CHEM 3400 [0.5 credit]
Independent Research II
Students carry out a laboratory research project supervised by a Chemistry faculty member. A research report must be submitted by the last day of classes for evaluation by the Chair and Faculty supervisor; expectations of student performance and evaluation exceed that of CHEM 2400.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to Honours students having third-year standing in a Chemistry program with an overall CGPA of 10.0 or higher, and approval of the Chair and a Faculty supervisor.
Laboratory research for at least three hours a week over two terms.

CHEM 3401 [0.5 credit]
Physical Aspects of Biochemistry
Chemistry, structure and function of nucleic acids, proteins, carbohydrates, and lipids. Thermodynamics of biological systems, chemical mechanisms and organic transformations. Intended for Chemistry Majors.
Precludes additional credit for BIOC 2200, BIOL 2200, and BIOC 3101.
Prerequisite(s): CHEM 2103 and CHEM 2204.
Lectures three hours a week.

CHEM 3503 [0.5 credit]
Inorganic Chemistry I
Symmetry, identification of Raman and infrared active vibrations, symmetry-adapted molecular orbital theory of polyatomic molecules, electron deficient bonding, bonding in coordination complexes, solid state bonding, ionic lattices. Laboratory will introduce the student to a range of synthetic techniques and physical methods of characterization.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 3507.
Prerequisite(s): CHEM 2501.
Lectures three hours a week, tutorial one hour a week and laboratory four hours a week.

CHEM 3504 [0.5 credit]
Inorganic Chemistry II
Physical properties of coordination complexes, ligand substitutions and electron transfer reaction mechanisms, organometallic chemistry: bonding, nomenclature and catalysis. Laboratory will introduce the student to a range of synthetic techniques and physical methods of characterization.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 3508.
Prerequisite(s): CHEM 3503.
Lectures three hours a week, tutorial one hour a week and laboratory four hours a week.

CHEM 3507 [0.5 credit]
General Inorganic Chemistry I
Symmetry, identification of Raman and infrared active vibrations, symmetry-adapted molecular orbital theory of polyatomic molecules, electron deficient bonding, bonding in coordination complexes, solid state bonding, ionic lattices.
Precludes additional credit for CHEM 3503.
Prerequisite(s): CHEM 2501.
Lectures three hours a week, tutorial one hour a week.

CHEM 3508 [0.5 credit]
General Inorganic Chemistry II
Physical properties of coordination complexes, ligand substitutions and electron transfer reaction mechanisms, organometallic chemistry: bonding, nomenclature and catalysis.
Precludes additional credit for CHEM 3504.
Prerequisite(s): CHEM 3503 or CHEM 3507.
Lectures three hours a week, tutorial one hour a week.

CHEM 3600 [0.5 credit]
Introduction to Nanotechnology
Nanoscale units, bulk vs. nanoproperties, electrons, atoms and ions, metals, band structure, electrical conduction, biosystems, molecular devices, quantum mechanics and optics, tools for measuring nanostructures. Production of nanostructures: self assembly, nanoscale crystal growth, polymerization. Applications to sensors, magnets, electronics, drug delivery. Toxicology of nanostructures.
Prerequisite(s): CHEM 3100.
Lectures three hours a week.
CHEM 3700 [0.5 credit]  
Industrial Applications of Chemistry  
Uses of chemistry in a number of industries: fertilizers, electrochemical, metallurgical, petrochemical, pulp and paper, plastics, pharmaceutical. Interaction of chemistry with economic, political, engineering, environmental, health, legal considerations. Guest lecturers. 
Prerequisite(s): (BIOC 2300 or CHEM 2103) and one of CHEM 2207 or CHEM 2203. 
Lecture three hours a week.

CHEM 3800 [0.5 credit]  
The Chemistry of Environmental Pollutants  
Prerequisite(s): CHEM 2207 or CHEM 2203 or CHEM 2800. 
Lectures three hours a week.

CHEM 3999 [0.0 credit]  
Co-operative Work Term  
Includes: Experiential Learning Activity

CHEM 4100 [0.5 credit]  
Advanced Topics in Physical Chemistry I  
Principles of Group Theory as applied to Chemistry. Point groups, character tables, symmetry orbitals, molecular orbitals, aromaticity, allowed and forbidden reactions, sandwich complexes. Selection rules in spectroscopy, molecular vibrations. 
Prerequisite(s): CHEM 3102.

CHEM 4102 [0.5 credit]  
Advanced Topics in Physical Chemistry II  
Prerequisite(s): CHEM 3102. 
Lectures and seminars three hours a week.

CHEM 4103 [0.5 credit]  
Surface Chemistry and Nanostructures  
Surface structure, thermodynamics and kinetics, specifically regarding adsorption/desorption and high vacuum models. Nanoscale structures and their formation, reactivity and characterization. Thin films, carbon nanotubes, self-assembled monolayers and supramolecular aggregates. 
Prerequisite(s): CHEM 3600 and CHEM 3107. 
Also offered at the graduate level, with different requirements, as CHEM 5108, for which additional credit is precluded. 
Lectures three hours a week.

CHEM 4104 [0.5 credit]  
Physical Methods of Nanotechnology  
An overview of methods used in nanotechnology. Principles of scanning probe techniques ranging from surface physics to biology. State of the art methods to create nanostructures for future applications in areas such as nanolithography, nanoelectronics, nano-optics, data storage and bio-analytical nanosystems. 
Prerequisite(s): CHEM 3600 and CHEM 3107. 
Lectures three hours a week.

CHEM 4201 [0.5 credit]  
Macromolecular Nanotechnology  
Prerequisite(s): CHEM 3600 or permission of the department. 
Also offered at the graduate level, with different requirements, as CHEM 5207, CHEM 5208, for which additional credit is precluded. 
Lectures three hours a week.

CHEM 4202 [0.5 credit]  
Advanced Topics in Organic Chemistry I  
Topics include 2-dimensional 1H and 13CNMR spectroscopy and structure determination of complex organic molecules. 
Prerequisite(s): CHEM 3201. 
Also offered at the graduate level, with different requirements, as CHEM 5407, for which additional credit is precluded.

CHEM 4203 [0.5 credit]  
Synthetic Organic Chemistry  
The application of reactions to the synthesis or organic molecules. Emphasis on design of synthetic sequences, new reagents, and stereoselectivity. Topics include advanced methods for synthesis and reactions of alkenes, carbonyls, and enolates, functional group interconversion, oxidation and reduction, protecting groups, rearrangements, and metal-catalyzed cross-coupling. 
Prerequisite(s): CHEM 3201 and CHEM 3202. 
Lectures and seminars three hours a week.
CHEM 4204 [0.5 credit]
Organic Polymer Chemistry
Introduction to basic principles of polymer chemistry, industrial and synthetic polymers, different types of polymerization and polymer characterization. Study of commodity plastics, engineering thermoplastics, and speciality polymers, with emphasis on their synthesis. Prerequisite(s): CHEM 3201 or equivalent. Also offered at the graduate level, with different requirements, as CHEM 5406, for which additional credit is precluded. Lectures three hours a week.

CHEM 4205 [0.5 credit]
Reactivity and Mechanism in Organic Chemistry
The application of frontier molecular orbital theory (HOMO-LUMO interactions) to organic reactions, including thermal and photochemical cycloadditions of pi-systems (including 1,3-dipoles) and rearrangements. Reactions of radicals and carbenes; conformational analysis, stereochemical effects, and methods for the determination of reaction mechanisms. Prerequisite(s): CHEM 3202 and CHEM 3503 (may be taken concurrently). Lectures and seminars three hours a week.

CHEM 4206 [0.5 credit]
Natural Products Chemistry
A survey of the major classes of natural products with respect to their structural elucidation, synthesis, biosynthesis and bioactivity, with emphasis on compounds that have medicinal importance. Prerequisite(s): CHEM 3201 and CHEM 3202. Lectures and seminars three hours a week.

CHEM 4301 [0.5 credit]
Advanced Topics in Analytical Chemistry I
Trace and ultratrace analytical chemistry. Sampling and sample preservation. The problems of the blank. Trace and ultratrace analysis. Sampling and sample preparation. Atomic absorption, fluorescence and emission spectroscopy. Prerequisite(s): CHEM 2103 and one of CHEM 2302 or CHEM 2303. Lectures and seminars three hours a week.

CHEM 4302 [0.5 credit]
Advanced Topics in Analytical Chemistry II
Solutions and separations in analytical chemistry. Stability of aqueous solutions of standards and samples. Complex formation, multi-step and competing equilibria and their application to the design of selective methods of separation and determination. Electroanalytical techniques. Electroanalytical chemistry of aqueous solutions. Phase equilibria and solvent extraction. Prerequisite(s): CHEM 2103 and one of CHEM 2302 or CHEM 2303. Lectures and seminars three hours a week.

CHEM 4304 [0.5 credit]
Advanced Applications In Mass Spectrometry
Detailed breakdown of the physical, electrical and chemical operation of mass spectrometers. Applications in MS ranging from the analysis of small molecules to large biological macromolecules. Descriptions of the use of mass spectrometry in industry as well as commercial opportunities in the field. Prerequisite(s): CHEM 2103 or BIOC 2300, and one of CHEM 2302 or CHEM 2303. Also offered at the graduate level, with different requirements, as CHEM 5109, for which additional credit is precluded. Lectures and seminars three hours a week.

CHEM 4305 [0.5 credit]
Environmental Chemistry and Toxicology
Overview of environmental chemistry and toxicology principles including chemical sources, fate, and effects in the environment. Examining organic reactions occurring in abiotic environments and biological systems, and studying aspects of toxicant disposition and biotransformation. Emphasis on contemporary problems in human health and the environment. Prerequisite(s): CHEM 2203 or CHEM 2207, and CHEM 2800 or CHEM 2103, or BIOC 3101 or permission of the department. Also offered at the graduate level, with different requirements, as CHEM 5606, for which additional credit is precluded. Lectures three hours a week.

CHEM 4406 [0.5 credit]
Pharmaceutical Drug Design
Important elements of rational drug design. Ligand-receptor interactions, structure-activity relationships, molecular modeling of pharmacophores, structure and mechanism-based approaches to drug design. Enzyme inhibition in chemotherapy and design of anti-viral drugs. Includes: Experiential Learning Activity Prerequisite(s): CHEM 2103 and (CHEM 2203 or CHEM 2207), BIOC 3101 and (BIOC 3102 or BIOC 3008). Lectures and laboratory five hours a week.

CHEM 4407 [0.5 credit]
Polymer Modeling
Polymer architectures; Flexible and rigid rod polymers; Rotational isomeric states (RIS); Molecular mechanics, Ramachandran Map, Helix parameters; internal and external parameters; regular and random coil structures; molecular dynamics; calculation of end-to-end distance, NMR chemical shifts; conformational entropy and properties. Prerequisite(s): MATH 1107 and CHEM 2204 or permission of the department. Lectures three hours per week.
CHEM 4502 [0.5 credit]
Radiochemistry
A study of nuclear stability and decay; chemical studies of nuclear phenomena. Applications of radioactivity.
Prerequisite(s): CHEM 2302, CHEM 2303, and CHEM 3100, or permission of the Department.
Also offered at the graduate level, with different requirements, as CHEM 5905, for which additional credit is precluded.
Lectures and seminars three hours a week.

CHEM 4503 [0.5 credit]
Advanced Topics in Inorganic Chemistry I
A quantitative basis for ligand field theory; unreal and real wavefunctions of d-orbitals; derivation of the energies of d-orbitals using variational principle, secular determinants, and ligand field operators; the effect of ligand field on free-ion term symbols, wavefunction descriptions of terms symbols; applications.
Prerequisite(s): CHEM 3504 and CHEM 3101.
Lectures three hours a week.

CHEM 4504 [0.5 credit]
Advanced Topics in Inorganic Chemistry II
Reactivity of inorganic coordination compounds. Thermodynamic and kinetic factors affecting reactivity. Industrial and biochemical processes catalyzed by metal coordination compounds. Experimental methodologies, data analysis and rate law evaluation used to obtain reaction mechanisms leading to improved methods of catalysis.
Prerequisite(s): CHEM 3504 or equivalent.
Lectures three hours a week.

CHEM 4505 [0.5 credit]
Application of Physical Methods to Electron Transfer Chemistry
Spectroscopic techniques (i.e. UV-visible NIR, IR, EPR) and electrochemistry methods that are used to study photochemical and thermal intermolecular and intramolecular electron transfer in transition metal complexes are presented. Electron transfer theory and redox-active (non-innocent) ligands are discussed.
Prerequisite(s): CHEM 3504.
Lectures three hours a week.

CHEM 4700 [0.5 credit]
Special Topics in Chemistry
A topic of current interest in any branch of chemistry. Only one special topics course may be presented for credit.
Prerequisite(s): permission of the Department.

CHEM 4800 [0.5 credit]
Atmospheric Chemistry
Properties of natural atmospheric constituents; biogeochemical cycles involving gases; chemical reactions in the atmosphere; anthropogenic atmospheric pollutants (e.g., chlorofluorocarbons, sulphur and nitrogen oxides, photochemical smog sources and effects on the biosphere. Relation between the structure of molecules and their spectral and reactive properties.
Prerequisite(s): CHEM 2103 or CHEM 2800.
Lectures three hours a week.

CHEM 4907 [1.0 credit]
Honours Essay and Research Proposal
Students conduct an independent research study using library resources, and prepare a critical review and study proposal on a topic approved by a faculty supervisor. A written report and oral poster presentation of the work are required before a grade can be assigned.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 4908, FOOD 4907 and FOOD 4908.
Prerequisite(s): fourth year standing in an Honours Chemistry program and permission of the department.

CHEM 4908 [1.0 credit]
Research Project and Seminar
Senior students in Honours Chemistry carry out a research project under the direction of one of the members of the Department. A written report and an oral presentation of the work are required before a grade can be assigned.
Includes: Experiential Learning Activity
Precludes additional credit for CHEM 4907, FOOD 4907 and FOOD 4908.
Prerequisite(s): any two of CHEM 3106, CHEM 3107, CHEM 3205, CHEM 3305 and CHEM 3504 and permission of the department.
Laboratory and associated work equivalent to at least eight hours a week for two terms.

Childhood and Youth Studies (CHST)

Childhood and Youth Studies (CHST) Courses

CHST 1003 [1.0 credit]
Introduction to Childhood and Youth Studies
An introduction to multiple approaches to studying childhood and youth through a diverse range of historical periods and cultural contexts. Students will apply an interdisciplinary lens to explore the ways that children and youth have been discussed, researched, and understood.
Precludes additional credit for CHST 1000 (no longer offered), CHST 1002 (no longer offered).
Lecture and discussion groups three hours a week.
CHST 2001 [0.5 credit]
Experiential Learning in Childhood and Youth Studies
An examination of the philosophies, purposes, methods, techniques, and issues of childhood and youth studies through engagement with children and youth in campus and community settings. Students will make connections to theoretical and curriculum frameworks and current debates and perspectives.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in Childhood and Youth Studies.
Lecture and discussion three hours a week.

CHST 2003 [0.5 credit]
Introduction to Research Methods in Childhood and Youth Studies
An introduction to the foundations of research involving children and youth. Students will learn research paradigms and strategies for designing and conducting research with children and young people. Ethical considerations and the involvement of children as co-researchers will be emphasized.
Precludes additional credit for CHST 2000 (no longer offered).
Prerequisite(s): second-year standing in Childhood and Youth Studies.
Lectures and discussion groups three hours a week.

CHST 2011 [0.5 credit]
Children's Literature
Introduction to the critical study of children's literature. Also listed as ENGL 2011.
Precludes additional credit for ENGL 2006 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

CHST 3000 [0.5 credit]
Conceptualizing Adolescence in Childhood and Youth Studies
A comprehensive interdisciplinary overview of key issues, research, and theoretical developments in the study of childhood and youth. Students will explore the different and often conflicting conceptualizations of adolescence and examine youth theories and their implications.
Prerequisite(s): Third year standing in Childhood and Youth Studies.
Lectures three hours a week.

CHST 3002 [0.5 credit]
Special Topics in Child Studies
Analysis of selected topics relevant to theory, research, and practice involving children and youth. The choice of topics will vary from year to year. Students should consult with the Institute regarding the topic offered.
Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.
Lectures three hours a week.

CHST 3003 [0.5 credit]
Theoretical Advances in Developmental Sciences
Developments and advances in theories of human development and their applications. Population-based models of child development, bio-ecological frameworks, and epigenetic theories with emphasis on interdisciplinary frameworks relating to childhood and youth.
Prerequisite(s): Third year standing in the Childhood and Youth Studies Program or permission of the department.
Lecture three hours a week.

CHST 3101 [0.5 credit]
Research Seminar
This seminar is designed for students who wish to complete an Honours research project in their 4th year. Students will select a topic of study, investigate methodological and ethical considerations, and implement the key steps involved in designing rigorous research projects in diverse settings.
Precludes additional credit for CHST 3100 (no longer offered).
Prerequisite(s): CHST 2003 or CHST 2000 (no longer offered), and third-year standing in Childhood and Youth Studies.
Seminar three hours a week.

CHST 3103 [0.5 credit]
Critical Approaches to Child Development
A critical examination of philosophical, ideological, and discursive perspectives on childhood and youth. Students will analyze normative constructs reproduced in developmental discourses and research, particularly concerning gender, racism, disability, and oppressive practices.
Precludes additional credit for CHST 3001 (no longer offered).
Prerequisite(s): Third-year standing in Childhood and Youth Studies.
Lecture three hours a week.

CHST 3201 [0.5 credit]
Children's Knowledges, Cultures, and Representations
An analysis of the ways children construct social relations through cultures and systems of representations. Students will investigate how children's knowledges and identities are constructed through their relationships with the world and develop theoretical and practical approaches for working with children from diverse cultures.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Childhood and Youth Studies.
Seminar three hours a week.
CHST 3202 [0.5 credit]
Reconceptualizing Early Childhood Education and Care
A study of historical, contemporary, global, and local conversations about the professional field of early childhood education and care and its diverse practices and contexts. Topics may include reconciliation, anti-racist pedagogies, asset-based practices, inclusiveness, caring in context, and critical reflection.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Childhood and Youth Studies.
Seminar three hours a week.

CHST 3203 [0.5 credit]
Youth Culture and Activism
An exploration of youth cultures and participation in local, national, and global contexts. Students will examine youth engagement and advocacy, including definitions of citizenship, theories of resistance, the construction of "youth" as a social category, and the impact of technology and social media.
Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 3204 [0.5 credit]
Literary Representations of Childhood and Youth
An examination of the ways in which childhood, children, and youth have been represented in creative literature (fiction, poetry, drama, and/or creative nonfiction).
Also listed as ENGL 3204.
Prerequisite(s): third-year standing, or permission of the department.
Seminar three hours a week.

CHST 3205 [0.5 credit]
Race, Childhood, and Youth
An examination of historical and contemporary issues, debates, and methodologies pertaining to the studies of race, ethnicities, and racialization in childhood and youth studies. Students will also theorize the intersectionality of race, racism, racialization, racial and ethnic formations, nationalism, and colonialism in a contemporary context.
Prerequisite(s): third-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 3302 [0.5 credit]
Children, Policy, and Practice
An introduction to the concepts of policy and practice and how these are influenced by history, economy, geography, and culture. Topics may include provincial, national, and international economic, social, and educational policies concerning children and youth.
Precludes additional credit for CHST 4000 (no longer offered).
Prerequisite(s): third-year standing in Childhood and Youth Studies.
Lecture three hours a week.

CHST 3303 [0.5 credit]
Children’s Rights
This course examines children’s rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts.
Also listed as HUMR 3303.
Precludes additional credit for CHST 3901 (no longer offered).
Prerequisite(s): third-year standing in Childhood and Youth Studies.
Lecture three hours a week.

CHST 3304 [0.5 credit]
Disability and Childhood: Transnational Perspectives
Drawing on theory and research in disabled children’s childhood studies, sociology of childhood, disability studies, and girlhood studies, this course examines the discursive and material constructions of disabled youth and childhood in transnational contexts in relation to emerging neo-colonial, neo-imperialist, and neo-liberal ideologies.
Also listed as DBST 3304.
Prerequisite(s): third-year standing in Childhood and Youth Studies or Disability Studies, or permission of the department.
Lecture three hours a week.

CHST 3305 [0.5 credit]
Childhood and Youth in Indigenous Contexts
An introduction to indigenous perspectives and contexts, both historical and contemporary, in relation to practice with Indigenous children, youth, families, and communities. Students will explore critical theory and necessary protocols for respectful entry into child and youth care practice within Indigenous contexts.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Childhood and Youth Studies or Indigenous Studies, or permission of the department.
Seminar three hours a week.

CHST 3904 [1.0 credit]
Service-Learning in Community Settings
Students will learn to apply their knowledge pertaining to children and youth to a policy- or practice-oriented work environment. Students will complete a term paper and other assignments documenting gains in experiential knowledge. Graded SAT/UNS.
Includes: Experiential Learning Activity
Prerequisite(s): students with third- or fourth-year standing in Childhood and Youth Studies may apply to the Undergraduate Advisor for permission.
Field placement six hours per week in a community setting, and regular class forum.
CHST 4001 [0.5 credit]
Advanced Topics in Child Studies
In-depth analysis of theoretical, empirical, and applied topics related to children and youth in Canada and/or internationally. Topics may include poverty and social inequality, child and youth health, social media and social change. This course is repeatable when the topic changes.
Prerequisite(s): fourth-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 4003 [0.5 credit]
History of 'The African Child'
Students will analyze the history of the figure of 'the African child' using a range of visual, sources from colonial officials, anthropologists, historians, advertisers, charity and development workers, and African children themselves.
Includes: Experiential Learning Activity
Also listed as AFRI 4003.
Precludes additional credit for CHST 4001 if taken in 2014-15.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

CHST 4004 [0.5 credit]
Theories of Inclusion in Childhood and Youth Education
An examination of the ways that educational discourses construct and perpetuate marginalization of disadvantaged individuals across historical, political, and educational contexts. Students will explore inclusive and exclusive approaches to education and care and how these discursive and material conditions shape the learning experiences of children.
Prerequisite(s): third-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 4101 [0.5 credit]
Children, Youth, and Popular Culture
A critical examination how popular culture, including consumer culture and digital media, mediates the identities, aspirations, and experiences of children and youth. Students will engage in critical dialogue about media culture and ideology and use cultural production to explore counter-narratives to problematic media representations.
Prerequisite(s): fourth-year standing in Childhood and Youth Studies, or permission of the department.
Seminar three hours a week.

CHST 4102 [0.5 credit]
Queer and Trans Youth
An examination of the ways that queer and trans youth have been conceptualized in research, media, literature, policy, and education. A range of multimedia sources will be used to explore the ways queer and trans youth are using language to render themselves intelligible.
Prerequisite(s): fourth-year standing in Childhood and Youth Studies or Women's and Gender Studies, or permission of the department.
Seminar three hours a week.

CHST 4900 [0.5 credit]
Independent Study
A reading or research course for students who wish to investigate a particular topic of interest within Childhood and Youth Studies. Students may not take more than one credit of Independent Study in their total program.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in Childhood and Youth Studies and IIS Co-Director approval.

CHST 4908 [1.0 credit]
Honours Research Project
Interdisciplinary research project for students in the Honours Research Project stream. Projects will be completed under the supervision of a CHST faculty member. Students must contact the CHST Program Advisor to request approval to register in this course.
Includes: Experiential Learning Activity
Prerequisite(s): CHST 3101, fourth-year standing in Childhood and Youth Studies with a Major CGPA of 10.0 or higher, and permission of the CHST Program Advisor.

Chinese (CHIN)

Chinese (CHIN) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.
CHIN 1010 [0.5 credit]  
First-Year Mandarin Chinese I  
For students with no knowledge of Mandarin. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language. Compulsory attendance. Precludes additional credit for CHIN 1110. Four hours a week.

CHIN 1020 [0.5 credit]  
First-Year Mandarin Chinese II  
Continuation of first-year Mandarin Chinese. Oral skills; basic reading and writing skills. Compulsory attendance. Precludes additional credit for CHIN 1110. Prerequisite(s): grade of C or higher in CHIN 1010, or permission of the School. Four hours a week.

CHIN 1110 [1.0 credit]  
Intensive First-Year Mandarin Chinese  
For students with no knowledge of Mandarin Chinese. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language. Compulsory attendance. Precludes additional credit for CHIN 1010 and CHIN 1020. Eight hours a week (one term).

CHIN 2010 [0.5 credit]  
Second-Year Mandarin Chinese I  
Further study of Mandarin Chinese to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for CHIN 2110. Prerequisite(s): grade of C or higher in CHIN 1020 or CHIN 1110, or permission of the School. Four hours a week.

CHIN 2020 [0.5 credit]  
Second-Year Mandarin Chinese II  
Continuation of second-year Mandarin Chinese. Further study of Mandarin Chinese to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for CHIN 2110. Prerequisite(s): grade of C or higher in CHIN 2010 or permission of the School. Four hours a week.

CHIN 2110 [1.0 credit]  
Intensive Second-Year Mandarin Chinese  
Further study of Mandarin Chinese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for CHIN 2010 and CHIN 2020. Prerequisite(s): grade of C or higher in CHIN 1020 or CHIN 1110, or permission of the School. Eight hours a week (one term).

CHIN 3010 [0.5 credit]  
Third-Year Mandarin Chinese I  
Continuation of the study of Mandarin Chinese to reach a more advanced level, including ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 2010, or CHIN 2110, or permission of the School. Three hours a week.

CHIN 3015 [0.5 credit]  
Mandarin Chinese for Heritage Speakers  
For students who have attained Mandarin Chinese proficiency in an informal setting, this course provides an opportunity to build on their existing language skills and to develop them in a formal academic setting. The course will formalize grammar awareness and enhance Mandarin Chinese literacy skills. Precludes additional credit for 1000 and 2000 level CHIN courses, and also for CHIN 3010. Prerequisite(s): permission of the School. Three hours a week.

CHIN 3020 [0.5 credit]  
Third-Year Mandarin Chinese II  
Continuation of third-year Mandarin Chinese. Progress toward reaching a more advanced level, including ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 3010 or CHIN 3015, or permission of the School. Three hours a week.

CHIN 4010 [0.5 credit]  
Fourth-Year Mandarin Chinese I  
Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 3020, or permission of the School. Three hours a week.

CHIN 4020 [0.5 credit]  
Fourth-Year Mandarin Chinese II  
Continuation of fourth-year Mandarin Chinese. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 4010, or permission of the School. Three hours a week.
CHIN 4210 [0.5 credit]
Functional Contemporary Mandarin Chinese I
Further study of Mandarin Chinese to reach a more advanced level, aimed at developing speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Prerequisite(s): grade of C or higher in CHIN 4020, or permission of the School.
Three hours a week.

CHIN 4220 [0.5 credit]
Functional Contemporary Mandarin Chinese II
Continuation of CHIN 4210. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Prerequisite(s): grade of C or higher in CHIN 4210 or permission of the School.
Three hours a week.

CHIN 4380 [0.5 credit]
Topics in Chinese Culture and Society
Selected topics in Chinese culture and society. Repeatable once for credit when topic varies. Taught in English.
Prerequisite(s): Third-year standing in the Minor in Mandarin Chinese, or permission of the instructor.
Three hours a week.

CHIN 4900 [1.0 credit]
Independent Study
Research in a topic in Mandarin Chinese language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Mandarin Chinese, grade of C or higher in CHIN 4020 or equivalent, and permission of the School.

CHIN 4901 [0.5 credit]
Independent Study
Research in a topic in Mandarin Chinese language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Mandarin Chinese, grade of C or higher in CHIN 4020 or equivalent, and permission of the School.

Civil Engineering (CIVE)

Civil Engineering (CIVE) Courses

CIVE 2004 [0.5 credit]
GIS, Surveying, CAD and BIM
Includes: Experiential Learning Activity
Prerequisite(s): Second-year status in Engineering or (GEOM 1004 for students in BSc in Geomatics).
Lectures three hours a week, problem analysis and laboratories three hours a week.

CIVE 2005 [0.5 credit]
Architectural Technology 2
Technical issues involved in architectural design of buildings from ancient times to the present. Technological innovation and materials related to structural developments, and the organization and design of structures. Basic concepts of calculus, equilibrium, and mechanics of materials.
Precludes additional credit for Not eligible for use for Bachelor of Engineering degree requirements.
Prerequisite(s): ARCC 2202.
Lectures three hours a week, laboratory three hours a week.

CIVE 2101 [0.5 credit]
Engineering Mechanics
Precludes additional credit for MAAE 2101.
Prerequisite(s): MATH 1004, MATH 1104 and second-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

CIVE 2200 [0.5 credit]
Mechanics of Solids I
Includes: Experiential Learning Activity
Precludes additional credit for MAAE 2202.
Prerequisite(s): MATH 1004 and second-year status in Engineering for B.Eng. or CIVE 2005 for B.A.S. with Concentration in Conservation and Sustainability.
Lectures three hours a week, problem analysis and laboratory three hours a week.
CIVE 2700 [0.5 credit]
Civil Engineering Materials
Includes: Experiential Learning Activity
Precludes additional credit for MAAE 2700.
Prerequisite(s): second year status for students in an Engineering program or second year standing in a B.A.S. major in Conservation and Sustainability.
Lectures three hours a week, problem analysis and laboratory three hours a week.

CIVE 3202 [0.5 credit]
Mechanics of Solids II
Includes: Experiential Learning Activity
Precludes additional credit for MAAE 3202.
Prerequisite(s): CIVE 2200.
Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

CIVE 3203 [0.5 credit]
Introduction to Structural Analysis
Prerequisite(s): CIVE 2200 and MATH 1004.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3204 [0.5 credit]
Introduction to Structural Design
Prerequisite(s): CIVE 2200.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3205 [0.5 credit]
Design of Structural Steel Components
Introduction to CAN/CSA - S16, design and behaviour concepts; shear lag, block shear, local plate buckling, lateral torsional buckling, instantaneous centre, inelastic strength and stability. Design of tension members, axially loaded columns, beams, beam-columns, simple bolted and welded connections.
Prerequisite(s): CIVE 2200 and CIVE 2700.
Recommended prerequisite: CIVE 3204.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3206 [0.5 credit]
Design of Reinforced Concrete Components
Introduction to CAN/CSA - A23.3; design and behaviour concepts; flexural analysis at service loads; shear, bond, Whitney stress block, under, over reinforced behaviour, ultimate strength. Flexural design of singly reinforced, doubly reinforced T-beams, one-way slabs. Shear design for beams. One-way, two-way slab systems, columns.
Prerequisite(s): CIVE 2200 and CIVE 2700.
Recommended prerequisite: CIVE 3204.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3207 [0.5 credit]
Historic Site Recording and Assessment
Methods of heritage documentation including hand recording, photography, rectified photography, total station, gps, photogrammetry, and laser scanning. Non-destructive testing techniques; environmental assessment tools for determining air quality and energy efficiency. Multidisciplinary teams for all project work.
Includes: Experiential Learning Activity
Also listed as ARCN 4100.
Prerequisite(s): third-year status in B.Eng. in Architectural Conservation and Sustainability Engineering.
Lectures three hours a week, lab or field work two hours a week.

CIVE 3208 [0.5 credit]
Geotechnical Mechanics
Includes: Experiential Learning Activity
Also listed as ERTH 4107.
Prerequisite(s): third-year status in Engineering, or permission of the department. Additional recommended background: ERTH 2404 or equivalent.
Lectures three hours a week, laboratory three hours alternate weeks.
CIVE 3209 [0.5 credit]
Building Science
Building envelope design and analysis; applied heat transfer and moisture transport; solar radiation; hygrothermal modelling; control of rain, air, vapour, and heat; materials for wall, window, curtain wall, roof, and foundation systems; building envelope retrofit case studies; building code: envelope construction.
Prerequisite(s): MAAE2400 and third-year status in B.Eng. Architectural Conservation and Sustainability Engineering or in Civil Engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3304 [0.5 credit]
Transportation Engineering and Planning
Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion, human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods.
Also listed as GEOG 4304.
Prerequisite(s): third-year status in Engineering, or permission of the Department.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

CIVE 4200 [0.5 credit]
Matrix Analysis of Framed Structures
Prerequisite(s): CIVE 3203.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4201 [0.5 credit]
Finite Element Methods in Civil Engineering
Introduction to the theory and application of finite element methods. The relationship with virtual work, Rayleigh-Ritz, system of linear equations, polynomial interpolation, numerical integration, and theory of elasticity is explored. Isoparametric formulations of structural and plane elements are examined. Geotechnical and nonlinear problems are introduced.
Prerequisite(s): CIVE 2200 and fourth year status in engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4202 [0.5 credit]
Wood Engineering
Also listed as ARCC 4202.
Prerequisite(s): CIVE 2200, CIVE 2700 and third-year status in B.Eng.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4208 [0.5 credit]
Geotechnical Engineering
Prerequisite(s): CIVE 3208.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4209 [0.5 credit]
Highway Engineering
Highway planning; highway location and geometric design; traffic engineering; highway capacity; soil classifications; subgrade and base materials; highway drainage; frost action; structural design of rigid and flexible pavements; highway economics and finance; maintenance and rehabilitation.
Recommended prerequisites: CIVE 2004, CIVE 3304 and CIVE 3208.
Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4301 [0.5 credit]
Foundation Engineering
A critical study of the theories in soil mechanics and their application to the solution of geotechnical engineering problems. Field investigations, laboratory and field testing, shallow foundations, special footings, mat foundations, pile foundations and excavations. Discussion of new methods and current research.
Prerequisite(s): CIVE 4208.
Lectures three hours a week, laboratory three hours alternate weeks.
CIVE 4302 [0.5 credit]
Reinforced and Prestressed Concrete Design
Reinforced concrete shear and torsion design. Two-way slab design by Direct Design and Equivalent Frame Method. Behaviour and design of slender reinforced concrete columns. Prestressed concrete concepts; flexural analysis and design; shear design; anchorage zone design; deflection and prestress loss determination. Prerequisite(s): CIVE 3202, CIVE 3203 and CIVE 3206. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4303 [0.5 credit]
Urban Planning
A systematic approach to urban planning; urban sprawl; data collection; forecasting; standards; space requirements; land use; zoning; transportation; land development; site selection; land capability; layout; evaluation; housing; urban renewal and new towns. Prerequisite(s): fourth-year status in Engineering, second-year standing in B.A.S. (Urbanism), or permission of the Department. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4307 [0.5 credit]
Municipal Hydraulics
Fluid flow fundamentals. Hydraulics of pipe systems. Open channel flow. Prediction of sanitary and storm sewage, flow rates. Design of water distribution systems, culverts, sanitary and storm sewers. Pumps and measuring devices. Hydraulic and flow control structures. Prerequisite(s): MAAE 2300. Lectures three hours a week, problem analysis one and a half hours a week.

CIVE 4308 [0.5 credit]
Behaviour and Design of Steel Structures
Behaviour and design of open web steel joists, steel and composite decks, composite beams and columns, stud girders, and plate girders. Design of moment connections, base plates and anchor bolts, and bracing connections. Stability of rigid and braced frames. Design for lateral load effects. Prerequisite(s): CIVE 3205 and fourth-year status in Engineering. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4400 [0.5 credit]
Construction/Project Management
Systems approach to project planning and control. Analysis of alternative network planning methods: CPM, precedence and PERT; planning procedure; computer techniques and estimating; physical, economic and financial feasibility; implementation feedback and control; case studies. Prerequisite(s): fourth-year status in Engineering. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4403 [0.5 credit]
Masonry Design
Introduction to structural design in masonry. Properties of masonry materials and assemblages. Behaviour and design of beams, walls and columns. Selected topics including veneer wall systems, differential movement, workmanship, specifications, inspection, maintenance and repair. Lowrise and highrise building design. Prerequisite(s): CIVE 3204, CIVE 3206 and fourth-year status in Engineering or permission of the Department. Also offered at the graduate level, with different requirements, as CIVE 5200, for which additional credit is precluded. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4407 [0.5 credit]
Municipal Engineering

CIVE 4500 [0.5 credit]
Computer Methods in Civil Engineering
Advanced software development for Civil Engineering applications. Examples may be chosen from surveying, transportation, geotechnical and/or structural engineering. Software technologies include object-oriented programming, data base management, Internet-based applications and graphical user interfaces. Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as CIVE 5602, for which additional credit is precluded. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4601 [0.5 credit]
Building Pathology and Rehabilitation
Deterioration mechanisms for concrete, timber, steel and masonry structures. Identification of design deficiencies; criteria for selection and design of rehabilitation systems. Design techniques to reduce deterioration in new construction and historical structures. Includes: Experiential Learning Activity Also listed as ARCN 4200. Prerequisite(s): CIVE 3207 and fourth-year status in B.Eng. in Architectural Conservation and Sustainability Engineering. Lectures three hours a week, lab/field work two hours a week.
CIVE 4614 [0.5 credit]
Building Fire Safety
Understanding fire-structure interaction and the concepts of fire severity and resistance; behaviour of steel, concrete, and timber buildings exposed to fires; compartment fire dynamics; correlations and computer models to predict fire dynamics; fire retardants; laboratory-scale fire experiments; performance-based approach for building fire safety design.
Prerequisite(s): MAAE 2400 and fourth-year status in Engineering, or permission of the Department.
Lectures three hours a week, problem analysis and laboratories one and one-half hours per week.

CIVE 4907 [1.0 credit]
Engineering Research Project
A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies.
Includes: Experiential Learning Activity
Precludes additional credit for CIVE 4917.
Prerequisite(s): fourth-year status in Engineering and permission of the department.

CIVE 4917 [0.5 credit]
Undergraduate Directed Study
Student carries out a study, analysis, and solution of an engineering problem which results in a written final report. Carried out under close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.
Includes: Experiential Learning Activity
Precludes additional credit for CIVE 4907.
Prerequisite(s): permission of the Department and completion of, or concurrent registration in, CIVE 4918.
Self study.

CIVE 4918 [1.0 credit]
Design Project
Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.
Includes: Experiential Learning Activity
Prerequisite(s): ECOR 3800 and fourth-year status in Engineering. Certain projects may have additional requirements.
Lectures two hours alternate weeks, problem analysis three hours a week.

Classical Civilization (CLCV)

Classical Civilization (CLCV) Courses

CLCV 1002 [0.5 credit]
Survey of Greek Civilization
Introduction to the study of Greek antiquity and the discipline of Classics and its methodologies. Greek culture and society are set in their historical contexts and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period.
Precludes additional credit for CLCV 1000, and CLCV 1109.
Lecture three hours a week.

CLCV 1003 [0.5 credit]
Survey of Roman Civilization
Introduction to the study of Roman antiquity and the discipline of Classics and its methodologies. The culture and society are set in their historical context and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period.
Precludes additional credit for CLCV 1000 and CLCV 1109.
Lecture three hours a week.

CLCV 1004 [0.5 credit]
Elementary Language Tutorial I
Elementary study of an ancient language.
Prerequisite(s): Permission of the unit.
Tutorial two hours a week plus out-of-class requirements.

CLCV 1005 [0.5 credit]
Elementary Language Tutorial II
Elementary study of an ancient language.
Prerequisite(s): Permission of the department.
Tutorial two hours a week plus out-of-class requirements.

CLCV 1008 [0.5 credit]
Introduction to Archaeology I
Introduction to the history, theory and practice of field archaeology. Excavations from all time periods and global regions will be discussed. Focus will be placed on excavation methods and technology, including dating, that enhance understanding of sites both on land and underwater.
Also listed as ARCY 1008.
Precludes additional credit for CLCV 2300 (no longer offered).
Lecture three hours a week.
CLCV 1009 [0.5 credit]
Introduction to Archaeology II
Continues the examination of various aspects of field archaeology begun in CLCV 1008. This course places greater focus on recent approaches to the interpretation of remains. These include environmental, cognitive and bioarchaeological approaches. Also listed as ARCY 1009.
Precludes additional credit for CLCV 2300 (no longer offered).
Lecture three hours a week.

CLCV 2004 [0.5 credit]
Intermediate Language Tutorial I
Intermediate study of an ancient language.
Prerequisite(s): permission of the unit.
Tutorial two hours a week plus out-of-class requirements.

CLCV 2005 [0.5 credit]
Intermediate Language Tutorial II
Intermediate study of an ancient language.
Prerequisite(s): permission of the unit.
Tutorial two hours a week plus out-of-class requirements.

CLCV 2008 [0.5 credit]
Greek and Roman Epic
An examination of the genre of epic in Greco-Roman antiquity, including a close reading of translations of Homer and Vergil.
Also listed as ENGL 2012.
Precludes additional credit for CLCV 2009 and ENGL 2009 (no longer offered).
Prerequisite(s): second year standing or permission of the unit.
Lecture three hours a week.

CLCV 2010 [0.5 credit]
Greek and Roman Drama
An examination of the genres of tragedy and comedy in Greco-Roman antiquity.
Also listed as ENGL 2605.
Precludes additional credit for CLCV 2009 or ENGL 2009 (no longer offered).
Prerequisite(s): second year standing or permission of the unit.
Lecture three hours a week.

CLCV 2100 [0.5 credit]
Scientific and Medical terminology
Examination of Ancient Greek and Latin roots of technical terms found in the sciences, engineering, and medicine.
Lecture three hours a week.

CLCV 2103 [0.5 credit]
Greek Religion
A study of religion in ancient Greece.
Also listed as RELI 2735.
Precludes additional credit for CLCV 2102 and RELI 2734.
Lecture three hours a week.

CLCV 2104 [0.5 credit]
Roman Religion
A study of religion in ancient Rome.
Also listed as RELI 2737.
Precludes additional credit for CLCV 2102 and RELI 2734.
Lecture three hours a week.

CLCV 2105 [1.0 credit]
Greek Philosophy and the Western Tradition
The Greek tradition from its pre-Socratic beginnings to Hellenistic and Roman philosophy (Cynicism, Epicureanism, Stoicism, Scepticism); focus on Socrates, Plato and Aristotle. Its conservation and reappropriation in the Middle Ages and Renaissance.
Also listed as PHIL 2005.

CLCV 2106 [0.5 credit]
Greek Legal Institutions
The study of ancient Greek law, including an examination of the legal system of ancient Athens.
Also listed as JUR 2738.
Precludes additional credit for CLCV 2006, PHIL 2007, CLCV 2007 (no longer offered).

CLCV 2107 [0.5 credit]
Greek Language and Literature
Intermediate study of an ancient language.
Prerequisite(s): permission of the unit.
Tutorial two hours a week plus out-of-class requirements.

CLCV 2108 [0.5 credit]
Greek Translation
An examination of the translation of classical and ancient Greek literature.
Prerequisite(s): permission of the unit.
Tutorial two hours a week plus out-of-class requirements.

CLCV 2109 [0.5 credit]
Classical Latin and Greek Studies
Intermediate study of Latin and Greek.
Prerequisite(s): permission of the unit.
Tutorial two hours a week plus out-of-class requirements.

CLCV 2303 [0.5 credit]
Greek Art and Archaeology
The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts.
Also listed as ARTH 2102.
Precludes additional credit for CLCV 2302 (no longer offered) and ARTH 2100 (no longer offered).
Prerequisite(s): second-year standing or permission of the unit.
Lecture three hours a week.

CLCV 2304 [0.5 credit]
Roman Art and Archaeology
The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied.
Also listed as ARTH 2105.
Precludes additional credit for CLCV 2302 and ARTH 2100.
Prerequisite(s): second-year standing or permission of the unit.

CLCV 2305 [1.0 credit]
Ancient Science and Technology
The development and application of ancient science and technology in the fields of ancient engineering, machinery, metallurgy, transport, building, agriculture and Hippocratic medicine; the social position of craftsmen and artisans, the attitude of intellectuals to science and manual labour, the effects of slavery.
Also listed as TSES 2305.
Prerequisite(s): second-year standing or permission of the Department. This course is suitable for students with no previous knowledge of Greece or Rome.
Lecture three hours a week.
CLCV 2500 [0.5 credit]
Classical Mythology
A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth. Also listed as ENGL 2500. Precludes additional credit for CLCV 2000 and ENGL 2007 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2902 [0.5 credit]
History of Ancient Greece I
The history of ancient Greece from the Bronze Age through the Archaic period. Also listed as HIST 2902. Precludes additional credit for CLCV 2900 and HIST 2900. Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2903 [0.5 credit]
History of Ancient Greece II
The history of ancient Greece from the classical period to Alexander. Also listed as HIST 2903. Precludes additional credit for CLCV 2900 and HIST 2900. Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2904 [0.5 credit]
History of Ancient Rome I
The history of ancient Rome from early Rome to the end of the Republic. Also listed as HIST 2904. Precludes additional credit for CLCV 2901 and HIST 2901. Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2905 [0.5 credit]
History of Ancient Rome II
The history of ancient Rome from the end of the Republic to the coming of Islam. Also listed as HIST 2905. Precludes additional credit for CLCV 2901 and HIST 2901 (no longer offered). Prerequisite(s): second-year standing or permission of the unit. Lecture three hours a week.

CLCV 2906 [0.5 credit]
Studies in Classical Civilization
A study of a selected topic in ancient history, literature, languages, culture, archaeology and/or technology. Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course. Lecture three hours a week.

CLCV 3000 [0.5 credit]
Topics in Ancient History
A study of a selected topic in ancient history. Also listed as HIST 3000. Prerequisite(s): third-year standing or permission of the unit. Permission of the unit is required to repeat this course. Lecture three hours a week.

CLCV 3001 [0.5 credit]
Early Greek Philosophy
A study of the pre-Socratic philosophers and of the Sophists and Socrates. Also listed as PHIL 3001. Prerequisite(s): CLCV 2105 or PHIL 2005 or permission of the Philosophy department. Lectures three hours a week.

CLCV 3003 [0.5 credit]
Topics in Classical Civilization
A study of a selected topic in classical civilization. Prerequisite(s): third-year standing or permission of the unit. Permission of the unit is required to repeat this course. Lecture three hours a week.

CLCV 3010 [0.5 credit]
The Later Roman Empire
The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire. Also listed as HIST 3010. Precludes additional credit for CLCV 3002 and HIST 3002. Prerequisite(s): a 2000-level CLCV course. Lecture three hours a week.

CLCV 3011 [0.5 credit]
Topics in Ancient Philosophy
A study of philosophers, texts, problems and issues in ancient philosophy, generally with a focus on Plato and Aristotle. Also listed as PHIL 3000. Prerequisite(s): 0.5 credit in PHIL and second-year standing, or permission of the Philosophy department. Lectures three hours a week.

CLCV 3201 [0.5 credit]
Studies in Greek History
Study of a period or theme in Greek History. Also listed as HIST 3009. Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) or permission of the unit. Permission of the unit is required to repeat this course. Lecture three hours a week.
CLCV 3202 [0.5 credit]
Studies in Roman History
Study of a period or theme in Roman History.
Also listed as HIST 3101.
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

CLCV 3215 [0.5 credit]
Ancient Greek Science
The history of Greek physical science from the Presocratics to Ptolemy. (Field a or e).
Also listed as HIST 3215.
Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lecture three hours a week.

CLCV 3301 [0.5 credit]
Field Work I: Greek and Roman World
Students will participate for a minimum of three weeks on an archaeological field project (i.e., excavation or survey) relevant to the Greek and Roman world. They will learn archaeological documentation and the analysis, recording, and processing of finds.
Includes: Experiential Learning Activity
Also listed as ARCY 3301.
Prerequisite(s): CLCV 1008 and CLCV 1009 or CLCV 2300 and permission of the unit. Permission of the unit is required to repeat this course.

CLCV 3306 [0.5 credit]
Studies in Greek Art
A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year.
Also listed as ARTH 3102, RELI 3732.
Precludes additional credit for RELI 3731 and ARTH 3101 (no longer offered) and RELI 3306 (if taken summer 2005, summer 2006, summer 2007).
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

CLCV 3307 [0.5 credit]
Studies in Roman Art
A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.
Also listed as ARTH 3105, RELI 3733.
Precludes additional credit for RELI 3731 and ARTH 3101 (no longer offered) and RELI 3306 (if taken summer 2005, summer 2006, summer 2007).
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

CLCV 3400 [0.5 credit]
Greek and Roman Studies Abroad
This course combines academic study in Canada with first hand examination of museum collections and sites of the ancient world, normally in Greece and Italy. Course content varies from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): 1.0 credit in Greek and Roman Studies, any level (CLCV, GREK, or LATN. Permission of the unit is required to repeat this course.
Field work

CLCV 3701 [0.5 credit]
Studies in Greek Literature
A study of an author or topic in Greek literature. Contents of this course vary from year to year.
Also listed as ENGL 3008.
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

CLCV 3702 [0.5 credit]
Studies in Roman Literature
A study of an author or topic in Roman literature.
Also listed as ENGL 3009.
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

CLCV 4000 [0.5 credit]
Field Work II: Greek and Roman World
Students participate for a minimum of three weeks in a position of responsibility (for example, as a trench supervisor or lab assistant) on an archaeological field project relevant to the Greek and Roman world.
Includes: Experiential Learning Activity
Also listed as ARCY 4000.
Prerequisite(s): CLCV 3300 and permission of the unit. Permission of the unit is required to repeat this course.
Field work

CLCV 4210 [0.5 credit]
Topics in Ancient History
Intended for Honours students in History and Classics who should normally be in the third and fourth-years.
Includes: Experiential Learning Activity
Also listed as HIST 4210.
Prerequisite(s): CLCV 2902 (HIST 2902), CLCV 2903 (HIST 2903) or CLCV 2904 (HIST 2904), CLCV 2905 (HIST 2905) or CLCV 3201 or CLCV 3202 or permission of the unit.
Seminar three hours a week.

CLCV 4800 [0.5 credit]
Seminar in Greek and Roman Studies
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Greek and Roman Studies B.A. program, or permission of the department.
Seminar three hours a week.
CLCV 4801 [0.5 credit]
Seminar in Greek and Roman Studies
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Greek and Roman Studies B.A. program, or permission of the department.
Seminar three hours a week.

CLCV 4900 [0.5 credit]
Directed Readings and Research
These courses consist of supervised readings and research projects in a specific area of Classical Civilization to be chosen in consultation with the Honours Supervisor.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing and permission of the unit.

Co-operative Education (COOP)

Co-op (COOP) Courses

COOP 1000 [0.0 credit]
Co-op Preparation
This mandatory course introduces Co-op students to the Co-operative Education Program, job search, application, and interview processes while preparing students for the transition from university to a professional work environment. Graded SAT/UNSAT.
Prerequisite(s): Restricted to co-op students.
Online eight-week six-module course.

Cognitive Science (CGSC)

Cognitive Science (CGSC) Courses

CGSC 1001 [0.5 credit]
Mysteries of the Mind
Challenges faced in understanding the mind, and some of the approaches cognitive science has brought to bear on them. Topics may include the nature of knowledge, how we learn, the extent to which human thinking is rational, biases in thinking, and evolutionary influences on cognition.
Lectures three hours per week.

CGSC 1005 [0.5 credit]
Computational Methods in Cognitive Science
Introduction to computational methods, with an emphasis on programming. Topics and assignments will focus on applications in cognitive science. No prior computing experience required.
Includes: Experiential Learning Activity
Lecture three hours and tutorial one and a half hours a week.

CGSC 2001 [0.5 credit]
Theories in Cognitive Science
An integrated background of the discipline of Cognitive Science, with an historical overview (1940's onward) and examination of the extent to which the discipline has assimilated the collective knowledge of contributing disciplines (e.g., psychology, philosophy, linguistics, artificial intelligence and neuroscience).
Prerequisite(s): second-year standing and FYSM 1607 or CGCS 1001, or permission of the Department.
Lectures three hours a week.

CGSC 2002 [0.5 credit]
Methods in Cognitive Science
Selected topics in cognitive science covered from the perspectives of psychology, computer science, linguistics, philosophy, and other related disciplines. Students may be required to complete independent research projects.
Includes: Experiential Learning Activity
Prerequisite(s): CGSC 1001 or FYSM 1607, second-year standing, or permission of the Department. Restricted to students enrolled in B.Cog.Sc. programs.
Seminars and tutorials six hours per week.

CGSC 3004 [0.5 credit]
Philosophy and Cognitive Science
An examination of the significance and role of philosophy in cognitive science. Topics may include: philosophical methods for studying the mind, prospects for naturalizing consciousness and intentionality, assessing competing models of the mind.
Prerequisite(s): CGSC 2001 and PHIL 2501, and third-year standing.
Seminar three hours per week.

CGSC 3201 [0.5 credit]
Cognitive Processes
An examination of research findings on cognitive processes. Topics may include attention, speech perception, memory, intelligence, reasoning, learning, working memory, reading, and mathematics.
Prerequisite(s): third-year standing, and CGSC 2001 or PSYC 2700.
Seminar three hours per week.

CGSC 3301 [0.5 credit]
Language and Cognitive Science
Issues related to language and cognitive science are examined through a detailed consideration of selected topics.
Prerequisite(s): third-year standing, and CGSC 2001.
Seminar three hours per week.

CGSC 3501 [0.5 credit]
Cognitive Neuroscience
Issues related to the role of cognitive neuroscience research in cognitive science are examined through a detailed consideration of selected topics.
Prerequisite(s): third-year standing and CGSC 2001.
Seminar, three hours per week.
CGSC 3601 [0.5 credit]
Artificial Intelligence and Cognitive Science
An introduction to the contribution of artificial intelligence and computer modeling of cognitive processes to cognitive science.
Includes: Experiential Learning Activity
Precludes additional credit for CGSC 4001.
Prerequisite(s): third-year standing and CGSC 2002 and (CGSC 1005 or COMP 1005). Restricted to students enrolled in B.Cog.Sc. Honours.
Seminars and labs six hours per week.

CGSC 3704 [0.5 credit]
Cognitive Science and the Digital Humanities
Exploration of the roles of human and artificial cognition in the digital humanities. Topics may include virtual and augmented reality as applied to the humanities, cognitive issues in hypertext and hypermedia; linguistic and philosophical considerations in digital media, cognitive narratology, and artificial intelligence.
Also listed as DIGH 3704.
Prerequisite(s): CGSC 1001; CGSC 2001 or DIGH 2001; and third-year standing.
Seminar three hours per week.

CGSC 3908 [0.5 credit]
Honours Seminar in Cognitive Science
Major theories and empirical approaches within Cognitive Science are examined through a detailed consideration of selected topics. Students are required to complete independent research projects to prepare for their fourth-year honours theses.
Includes: Experiential Learning Activity
Precludes additional credit for CGSC 3001 (no longer offered) and CGSC 3002 (no longer offered).
Prerequisite(s): third year standing, CGSC 2001 and CGSC 2002, and enrolment in B. Cog. Sc. Honours with a CGPA in the major requirements of 8.0.
Seminars and tutorials six hours per week.

CGSC 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

CGSC 4601 [0.5 credit]
Cognitive Modelling in Cognitive Science
Introduction to the field of cognitive modelling. Different modelling systems and how to evaluate them against human data; how to create cognitive models using the ACT-R cognitive architecture.
Prerequisite(s): third year standing, CGSC 2001, and (CGSC 1005 or COMP 1005). Also offered at the graduate level, with different requirements, as CGSC 5106, for which additional credit is precluded.
Seminar three hours per week, tutorial one and a half hours per week.

CGSC 3901 [0.5 credit]
Independent Study
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program (including independent study credits taken through other departments).
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and permission of the Department.

CGSC 3902 [0.5 credit]
Independent Study
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program (including independent study credits taken through other departments).
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing and permission of the Department.

CGSC 4900 [0.5 credit]
Special Topics in Cognitive Science
The topic of this course will vary from year to year. Students may register in more than one section of CGSC 4900 but may register in each section only once.
Prerequisite(s): each section will have its own prerequisites and permission of the department if is required.
Seminar three hours per week.

CGSC 4908 [1.0 credit]
Honours Thesis
Interdisciplinary thesis. In developing a thesis, students must consult the Undergraduate Supervisor. Only the Undergraduate Supervisor can assign a supervisor or grant approval to register in this course. Faculty regulations governing Honours Research Essays and Honours Theses apply.
Includes: Experiential Learning Activity
Precludes additional credit for CGSC 4909.
Prerequisite(s): fourth year standing, CGSC 3908, and enrolment in B.Cog.Sc. Honours with a major CGPA of 8.0.

CGSC 4909 [1.0 credit]
Honours Project
Interdisciplinary project. Students engage in one or more group research projects.
Includes: Experiential Learning Activity
Precludes additional credit for CGSC 4908.
Prerequisite(s): 4th year standing, enrolment in B. Cog. Sc. Honours.
Seminar
Communication and Media Studies
(COMS)

Communication and Media Studies (COMS)

Courses

COMS 1001 [0.5 credit]
Foundations in Communication and Media Studies
An exploration of past and present media, patterns of change, and key approaches to their study.
Includes: Experiential Learning Activity
Precludes additional credit for COMS 1000, COMM 1101. Lecture and discussion groups.

COMS 1002 [0.5 credit]
Current Issues in Communication and Media
An exploration of communication and media in relation to contemporary political, technological and cultural issues, with a focus on Canada.
Includes: Experiential Learning Activity
Precludes additional credit for COMS 1000, COMM 1101. Lecture and discussion groups.

COMS 2003 [0.5 credit]
Theoretical Foundations in Communication and Media Studies
The development of communication theory in the context of major social, economic and cultural periods and events. Emphasis on the central debates and traditions that have shaped and defined the field.
Precludes additional credit for COMM 2101 (no longer offered) and COMM 2100 (no longer offered).
Prerequisite(s): COMS 1001 and COMS 1002, or JOUR 1001 and JOUR 1002, and second-year standing in Communication and Media Studies (including BGInS related specializations and streams), or permission of the School of Journalism and Communication.
Lectures and discussion groups three hours a week.

COMS 2004 [0.5 credit]
Introduction to Communication Research
Introduction to the scientific method as interpreted through major traditions in Communication and Media Studies. The course addresses the relationship between theory and evidence, research design, ethics and data management. Includes: Experiential Learning Activity
Precludes additional credit for COMM 2000 (no longer offered), COMM 2001 (no longer offered).
Prerequisite(s): COMS 1001 and COMS 1002, or JOUR 1001 and JOUR 1002, and second-year standing in Communication and Media Studies (including BGInS related specializations and streams), or permission of the School of Journalism and Communication.
Lectures and discussion three hours a week.

COMS 2200 [0.5 credit]
Big Data and Society
How big data and small data shape society. Databases as a form of media. Topics may include: data policy and regulation, the politics and ethics of big data, data and decision-making, and data as discourse.
Includes: Experiential Learning Activity
Prerequisite(s): Second-year standing or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 2300 [0.5 credit]
Communication as Propaganda
How business, government, and civil society actors have used media messages to persuade, influence, and manipulate the public. The impacts of propaganda on individuals and society, the roles of different media technologies in facilitating propaganda, and public resistance to propaganda.
Precludes additional credit for COMM 2301 (no longer offered).
Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002 or PAPM 1000, and second-year standing in Communication and Media Studies (including BPAPM and BGInS related specializations and streams), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 2500 [0.5 credit]
Communication and Science
How expert knowledge (particularly scientific, medical, and technical) is communicated in the public realm. Topics may include scientific advances and new technologies, health risks, environmental/ climate change, and cultural/ ideological positioning of science.
Prerequisite(s): second-year standing or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 2501 [0.5 credit]
Media Law
A survey of laws that affect the Canadian media including the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common-law limitations on freedoms of the press, including publication bans, libel and contempt of court.
Also listed as JOUR 2501, MPAD 2501.
Precludes additional credit for COMM 2501 (no longer offered).
Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002 or PAPM 1000, and second-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lecture three hours a week.
COMS 2504 [0.5 credit]  
**Language and Communication**  
Some of the central topics in the study of language and communication as pursued by linguists and philosophers, including the nature of meaning, the connections between language, communication and cognition, and language as a social activity.  
Also listed as PHIL 2504, LING 2504.  
Precludes additional credit for COMM 2504 (no longer offered).  
Prerequisite(s): second-year standing.  
Lectures three hours a week.

COMS 2600 [0.5 credit]  
**Communication and Culture**  
An introduction to the major industries, institutions, regulatory frameworks and key organizations responsible for cultural production in Canada.  
Precludes additional credit for COMM 2401 (no longer offered), COMM 2601 (no longer offered).  
Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002, and second-year standing in Communication and Media Studies, or permission of the School of Journalism and Communication.  
Lectures three hours a week.

COMS 2700 [0.5 credit]  
**Global Media and Communication**  
An introduction to global media and communication, with an emphasis on debates about media power and expansion, digitalization, technology transfer, and societal implications/changes. Students will investigate historical and contemporary contexts of global and transnational communication through a variety of approaches and perspectives.  
Precludes additional credit for COMM 3405/JOUR 3405 (no longer offered).  
Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002, and second-year standing in Communication and Media Studies (including BGlnS related specializations and streams), or permission of the School of Journalism and Communication.  
Lectures three hours a week.

COMS 3001 [0.5 credit]  
**Quantitative Research in Communication**  
An introduction to basic statistical methods in media and communication studies.  
Includes: Experiential Learning Activity  
Precludes additional credit for COMM 3001 (no longer offered).  
Prerequisite(s): COMS 2004, or PAPM 2000, and third-year standing in Communication and Media Studies (including BPAPM and BGlnS related specializations and streams), or permission of the School of Journalism and Communication.  
Lecture and lab three hours a week.

COMS 3002 [0.5 credit]  
**Qualitative Research in Communication**  
An introduction to interpretive methods in media and communication studies.  
Includes: Experiential Learning Activity  
Precludes additional credit for COMM 3002 (no longer offered).  
Prerequisite(s): COMS 2004, or PAPM 2000, and third-year standing in Communication and Media Studies (including BPAPM and BGlnS related specializations and streams), or permission of the School of Journalism and Communication.  
Lectures and discussion three hours a week.

COMS 3100 [0.5 credit]  
**Introduction to Political Management**  
Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.  
Also listed as POLM 3000, PSCI 3410.  
Precludes additional credit for COMM 3100 (no longer offered).  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

COMS 3108 [0.5 credit]  
**Media Industries and the Network Society**  
Examines the theoretical frameworks and major issues and debates relating to media industries and institutions in Canada and internationally.  
Includes: Experiential Learning Activity  
Precludes additional credit for COMM 3108 (no longer offered).  
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGlnS related specializations and streams), or permission of the School of Journalism and Communication.  
Lectures three hours a week.

COMS 3109 [0.5 credit]  
**Communication, Culture and Identity**  
Examines the relationship between media, communication, and identity categories. The course explores identity formation as a cultural phenomenon including questions of race, ethnicity, gender, class, and sexuality.  
Precludes additional credit for COMM 3109 (no longer offered).  
Prerequisite(s): third-year standing and enrollment in Communication and Media Studies (including BGlnS related specializations and streams) or in the Minor in Critical Race Studies, or permission of the School of Journalism and Communication.  
Lectures three hours a week.
COMS 3302 [0.5 credit]
Political Communication
Examines the relationship between various kinds of communication and political activity in a variety of contexts. Case studies will be drawn from speeches, political campaigns, and debates, using a variety of media forms, from photographs to web sites.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 3302 (no longer offered).
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3308 [0.5 credit]
Critical Studies in Advertising and Consumer Culture
A critical analysis of major constructs and basic mechanisms of advertising, social marketing and other aspects of consumer culture. The course examines the social, political-economic and cultural implications of consumer culture.
Precludes additional credit for COMM 3301 (no longer offered) and COMM 3308 (no longer offered).
Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures and discussion groups three hours a week.

COMS 3310 [0.5 credit]
Critical Perspectives of Public Relations
A critical examination of key aspects of public relations, including histories of PR, media representations of PR, gender and public relations, and the role of PR in business, politics and civil society.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 4304 (no longer offered).
Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3311 [0.5 credit]
Media and Communication in Regional Contexts
Provides a historical overview of the development of media technologies, and an understanding of the place of media within the political, regulatory, and legal activities of different international regions (e.g., Europe, Asia, Africa, Latin America, etc.).
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGInS related specializations and streams), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3400 [0.5 credit]
Ethical Controversies in Media and Communication
Explores ethical problems and controversies relating to research in media and communication. Focuses on rights and responsibilities of researchers and practitioners as relates to media consumers, producers, and professional communicators in an age when communication circulates quickly within and across borders and other boundaries.
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3401 [0.5 credit]
Communications Regulation in Canada
Examines historical and contemporary issues in the regulation of communication practices and institutions in Canada.
Precludes additional credit for COMM 3401 (no longer offered).
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3403 [0.5 credit]
Communication, Technology and Culture
Examines the relationship between communication technology and society, including factors that contribute to changes in the collection, storage and distribution of information and their cultural implications.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 3403 (no longer offered).
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lecture three hours a week.

COMS 3404 [0.5 credit]
Music Industries
An introduction to the structure and history of the music industries.
Also listed as MUSI 3403.
Precludes additional credit for COMM 3404 (no longer offered).
Prerequisite(s): second year standing.
Lectures three hours a week.
COMS 3406 [0.5 credit]
Media Audiences and Users
Examines the role of audiences in contemporary media industries. Topics include history of audience studies, ratings and the audience commodity, active audience theory, and media fandom.
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3407 [0.5 credit]
Comparative Media Studies
The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.
Also listed as JOUR 3407.
Precludes additional credit for COMM 3407 (no longer offered).
Prerequisite(s): Third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3410 [0.5 credit]
Visual Media and Communication
Examines the central importance of visual imagery in contemporary media, culture and everyday life. Draws connections between historical/contemporary explanations of 'the visual,' and how texts and technologies reflect the context and cultural values of the environments that produce them, and the challenges for regulation.
Includes: Experiential Learning Activity
Prerequisite(s): third year standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3411 [0.5 credit]
Alternative Media and Social Activism
Examines links between media and activism through the lens of past and present social movements and protest events. Addresses leading theories that help conceptualize various types of activist movements, with a focus on the role of media in shaping activist identity and political opportunity.
Includes: Experiential Learning Activity
Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3412 [0.5 credit]
Communication and Health
The concept of health as a sociocultural phenomenon; the many ways that health issues are communicated, defined, represented, and framed.
Prerequisite(s): third year standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 3500 [0.5 credit]
Current Issues in Communication and Media Theory
Examines theoretical debates and issues facing the field of Communication and Media Studies today.
Precludes additional credit for COMM 2101, COMM 2102 (no longer offered).
Prerequisite(s): COMS 2003 and third-year standing in Communication and Media Studies (including BGInS related specializations and streams), or permission of the School of Journalism and Communication.
Lectures and discussion groups three hours a week.

COMS 3800 [0.5 credit]
Special Topic in Communication and Media Studies
A selected topic not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the Communication and Media Studies program regarding the topic offered.
Prerequisite(s): third-year standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lecture three hours a week.

COMS 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

COMS 4004 [0.5 credit]
Communication and Discourse
Examines the development of theory and methods related to discourse and its use in the analysis of images and texts.
Precludes additional credit for COMM 4004 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.
COMS 4006 [0.5 credit]
Professional Communication Research
Students will work in a team-based environment to carry out empirical research in support of current faculty-led projects. In addition to learning advanced research techniques, students will develop project management and collaborative research skills.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 4000 (no longer offered), COMM 4002 (no longer offered).
Prerequisite(s): COMS 3001 or COMS 3002, and fourth-year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4305 [0.5 credit]
Media and Religion
Critical examination of the ways religion mediates communicative practices, engages with media technologies, and is mediated in mainstream or popular culture. Topics may include: secularization and post-secularization; the politics of representation; religious organizations as communicative actors; fundamentalism.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4306 [0.5 credit]
Media and Conflict
Media representations of conflict such as war and terrorism, and how they influence the collective imagination.
Precludes additional credit for COMM 4306 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4307 [0.5 credit]
Politics, Communication, and the Publicity State
Examines the histories, key actors, issues and trends in political communication, including the shift of government communication from information to promotion, its reliance on publicity practices, issues and crisis management, and implications for democratic citizenship.
Precludes additional credit for COMM 4307 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4311 [0.5 credit]
Environmental Communication
Examines environmental, animal, and earth observing media and pays special attention to the production of visual materials. The course explores the influence of media systems on the production, dissemination, and meaning of environmental observations and looks at sites of contemporary environmental contention.
Prerequisite(s): fourth-year Honours standing and enrollment in Communication and Media Studies or in the Minor in Environmental and Climate Humanities, or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4312 [0.5 credit]
Crisis and Risk Communication
Examines crises and risks from the perspective of communication. The course explores the role of various media in shaping risk perceptions and constructions of crisis, the politics of crisis and risk management, symbolic dimensions in crisis construction, and ethical dilemmas.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4313 [0.5 credit]
Screen Studies
Issues in the past, present and future of film, television and related media. Screens are examined as media that represent and shape values and culture, as technologies that are produced and purchased, and as objects that are regulated through policy.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4315 [0.5 credit]
Communication and the Built Environment
How communication occurs in conjunction with the built environment, with special attention to cultural artefacts such as houses, schools, factories, prisons, office buildings, roads, parks, and the urban (and suburban) environment. Various models, theories, and philosophies of the built environment are considered.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.
COMS 4316 [0.5 credit]
Indigenous Media in Global Contexts
Overview of Indigenous global media exploring film and film festivals, television networks, media arts, and the Internet. We will discuss struggles over mediated self-representation as well as debates over what constitutes Indigenous media relating to aesthetics, community affiliation, and identity.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4317 [0.5 credit]
Digital Media and Global Network Society
Critical and institutional approaches to the expansion of digital media in the context of international media regulation, globalization, media concentration and ownership, and the global flows of networked communication and information.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth year Honours standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4337 [0.5 credit]
Communication and Public Affairs Strategies
This hands-on course teaches students how to develop, design, and execute a public affairs strategy. Emphasis on understanding the interaction between public institutions and stakeholders and how effective public affairs strategies can be designed to help organizations achieve goals through public or opinion leader persuasion.
Includes: Experiential Learning Activity
Also listed as PAPM 4000.
Prerequisite(s): fourth-year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4401 [0.5 credit]
Global Internet Policy and Governance
Public interest and policy battles over critical internet resources and implications for development of the internet, citizens’ rights and freedoms, the economy, and democratic culture; common carriage, privacy, security and surveillance, access, speech rights, and diversity of information sources.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 4401 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4403 [0.5 credit]
Digital Media Industries
Key approaches to the study of media as industries and how economics, markets and technologies intersect with social choices, politics and power to shape how decisions are made about the design, ownership, organization and control of media.
Includes: Experiential Learning Activity
Precludes additional credit for COMM 4403 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4405 [0.5 credit]
The Networked Self
How notions of identity are changing as we conduct our lives through networked media and communication such as social media, online search, the Internet of Things, and wearable devices. Subjectivity, personhood, posthumanism, algorithmic control, and privacy.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4406 [0.5 credit]
Open Government and Communication
The contemporary open government movement; how communication can be used to improve governance and to foster a more collaborative relationship between governments and citizens. Access to information, the challenges of open data, expectations of transparency, and models of citizen engagement/consultation.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies (including BPAPM and BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4407 [0.5 credit]
Communication and Critical Data Studies
Theoretical perspectives, ethical problems, and contemporary issues relevant to communication and data studies. Students will critically examine the rise of ‘big data’ and ‘datafication’ as socio-technical phenomena that have become a crucial part of our communication landscape.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.
COMS 4408 [0.5 credit]
Creative Work
Contemporary trends affecting creative work in cultural industries. How careers in the arts, culture and media are increasingly desirable as a way for individual workers to find personal fulfillment and as a means of reinvigorating post-industrial economies.
Prerequisite(s): fourth-year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4410 [0.5 credit]
Mobile Media
Critical examination of the history, development, and expansion of mobile media and its impact on culture, connectivity, and practice; locative media practices, geocoding, wireless communication, mobile technologies, and user experience in everyday life.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4411 [0.5 credit]
Algorithmic Culture
The ways in which computerized algorithms engage in the traditional work of culture: the sorting, classifying, and hierarchizing of people, places, objects, and ideas to produce new habits of thought, conduct, expression, and material outcomes.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4412 [0.5 credit]
Game Studies
Games as media. The history of gaming and mediated play in terms of technology and form, industry, labour, gender and subcultural practice.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4501 [0.5 credit]
Digital Media Production
This workshop introduces practice-based tools and techniques relevant in contemporary professional communication, such as basic web development, podcasting, and digital photography.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4502 [0.5 credit]
Storytelling in the Digital Age
In this workshop students learn to write compelling stories for the digital age. They engage with examples of great storytelling across print and online platforms, from magazines and newspapers to blogs and podcasts, to gain a deeper understanding of what makes some stories stand out.
Includes: Experiential Learning Activity
Prerequisite(s): fourth standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4503 [0.5 credit]
Visualizing Social Media: Hashtags, keywords, & conversations
This workshop introduces a range of methods and practices in data mining and analytics. Techniques include data and text mining, data analysis (including sentiment and social network analysis), data visualization and modeling. Opportunity to work with analytics and mapping software on students' own projects.
Includes: Experiential Learning Activity
Prerequisite(s): COMS 3001 and fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4504 [0.5 credit]
Engaging the Public: Stakeholders, participation & consultation
This workshop introduces the challenges of conceptualizing and conducting public consultations. This includes audience or participant selection, a range of consultation techniques and formats, marketing and communication, analysis, as well as an awareness of policies and regulations governing consultations.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4505 [0.5 credit]
Professional Writing and Speaking
In this workshop students develop skills in professional written communication, such as press releases, blogs, op-eds, policy briefs, and speeches. Students will also hone their public speaking skills presenting their written work in different formats.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.
COMS 4506 [0.5 credit]
Event Management and Community Partnerships
This workshop introduces the stages of event management for potential community partners. This includes conceptualization, marketing and sponsorships, production and financing, to risk management.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.
Workshop three hours a week.

COMS 4602 [0.5 credit]
Children, Youth and Media
Historical and contemporary ways in which children and youth relate to the media and popular culture. Precludes additional credit for COMM 4602 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4603 [0.5 credit]
Diaspora and Communication
The impact of various forms of diasporic communication on the shaping of contemporary national and international society. Precludes additional credit for COMM 4603 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4604 [0.5 credit]
Media, Gender and Sexuality
Critical examination of the intersection of media and gender, including constructions of femininity, masculinity, and other issues of sexuality. Precludes additional credit for COMM 3601 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4605 [0.5 credit]
Media, Race and Ethnicity
Critical examination of how issues of race and ethnicity intersect with contemporary media. Precludes additional credit for COMM 3602 (no longer offered).
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4606 [0.5 credit]
Global Media and Popular Culture
Key theories and concepts that have shaped the study of global media and its impact on popular cultures around the world.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGInS related specializations), or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4607 [0.5 credit]
Communication and Food
Food in and as communication. Food and identity, food and culture, food environments, food systems, food politics, and food and community development. Includes: Experiential Learning Activity
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4608 [0.5 credit]
Sound Studies
How hearing and listening practices have changed over time, and the role of sound technology in shaping our understanding of each other, our world, and ourselves. Prequisite(s): fourth year Honours standing in Communication and Media Studies, or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4800 [0.5 credit]
Special Topic in Communication and Media Studies
A selected topic not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the Communication and Media Studies program regarding the topic offered.
Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.
Lectures three hours a week.

COMS 4908 [1.0 credit]
Honours Research Essay
The Honours Research Essay (HRE) provides eligible students with an opportunity to complete an independent research essay under the supervision of a faculty member. The HRE must be completed over two consecutive academic terms, beginning in the fall term. Includes: Experiential Learning Activity
Precludes additional credit for COMM 4908 (no longer offered).
Prerequisite(s): fourth year honours standing in Communication and Media Studies (including BGInS related specializations), with a CGPA of 10.0 or higher, or permission of the Undergraduate Supervisor.
Unscheduled.
Communication Courses for Disciplines and Professions (CCDP)

Communication Courses for Disciplines and Professions (CCDP) Courses

CCDP 2000 [0.5 credit]
Communication Skills for Computer Science Students
Development of competence in written and oral communication in computer science. Focus on professional written documents (reports, technical descriptions, manuals, proposals, memos, letters) and related oral work (oral communication in university and workplace settings). Attendance and participation are compulsory. Precludes additional credit for ALSS 2000. Prerequisite(s): enrolment in Bachelor of Computer Science and successful completion of all ESLR requirements. This course may not be taken concurrently with any ESLA course. Lectures and tutorials three hours a week.

CCDP 2004 [0.5 credit]
Communication Skills for NET
Development of competence in written and oral communication in relation to network design, development, and management. Focus on technical reports, proposals, and other related project documents; formal and informal oral presentations. Includes: Experiential Learning Activity Precludes additional credit for NET 2004 (no longer offered). Prerequisite(s): restricted to students with second-year standing in the B.I.T. degree program. Lecture and tutorial three hours a week.

CCDP 2100 [0.5 credit]
Communication Skills for Engineering Students
Development of competence in written and oral communication in engineering. Focus on professional written documents (proposals, technical explanations, research reports, summaries); written responses to engineering communications; related oral work. Attendance and participation are compulsory. Includes: Experiential Learning Activity Prerequisite(s): restricted to students with second-year standing in the Bachelor of Engineering program. All ESL requirements must be successfully completed; this course may not be taken concurrently with any ESLA course. Not repeatable for credit when successfully completed with a grade of C or higher. Seminars three hours a week.

CCDP 3003 [0.5 credit]
Communication Skills for IMD
Development of competence in written and oral communication related to multimedia design. Needs analyses, use-case scenarios, development and management of content, technical reports, and related project documents; oral presentations. Includes: Experiential Learning Activity Precludes additional credit for IMD 3003 (no longer offered). Prerequisite(s): restricted to students with second-year standing in the B.I.T. degree program. Lecture and tutorial three hours a week.

CCDP 3006 [0.5 credit]
Communication Skills for IRM
Development of competence in written and oral communication in relation to information resource management. Focus on reports, proposals, technical documentation and other related project documents. Also covers formal and informal oral presentations. Includes: Experiential Learning Activity Prerequisite(s): restricted to students with second-year standing in the B.I.T. degree program. Lecture and tutorial three hours a week.

CCDP 3008 [0.5 credit]
Communication Skills for OSS
Development of competence in written and oral communication. Focus on technical reports, proposals, and other related project documents; formal and informal oral presentations. Includes: Experiential Learning Activity Precludes additional credit for PLT 3008. Prerequisite(s): Restricted to students with second-year standing in the B.I.T. degree program. Seminars three hours a week.

Computer Science (COMP)

Computer Science (COMP) Courses

Notes:

1. Some of the following Computer Science courses are cross-listed from other parts of the Calendar. In every such case, only one course is actually offered and the two numbers are alternate identifiers for this single course. Students in the B.C.S. program should register in such a course under the Computer Science (COMP) number.

COMP 0999 [0.0 credit]
COMP Matters
COMP 1001 [0.5 credit]
Introduction to Computational Thinking for Arts and Social Science Students
An introduction to computational thinking and its applications to the arts and social sciences. Students will gain computational thinking skills by exploring data representation, basic programming concepts, a selection of algorithms, and advanced usage of software packages for the arts and social sciences.
Precludes additional credit for COMP 1004 (no longer offered). This course cannot be taken for credit by students in Business, Engineering, Computer Science, Mathematics or Science.
Lectures three hours a week.

COMP 1005 [0.5 credit]
Introduction to Computer Science I
A first course in programming, emphasizing problem solving and computational thinking. Topics include pseudocode, variables, conditionals, iteration, arrays, objects, functions, sorting, searching, and simulation.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1400, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.
Prerequisite(s): restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 1006 [0.5 credit]
Introduction to Computer Science II
A second course in programming emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.
Precludes additional credit for BIT 2400, BUSI 2402, COMP 1006, ITEC 2400, ITEC 2401, SYSC 2004.
Prerequisite(s): COMP 1005 or COMP 1405. Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 1008 [0.5 credit]
Math for Game Programmers
Prerequisite(s): one Grade 12 university preparation mathematics course.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 1405 [0.5 credit]
Introduction to Computer Science I
A first course in programming for B.C.S. students emphasizing problem solving and computational thinking. Topics include pseudocode, variables, conditionals, iteration, arrays, objects, functions, sorting, searching, and simulation.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1400, COMP 1005, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.
Prerequisite(s): restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 1406 [0.5 credit]
Introduction to Computer Science II
A second course in programming for BCS students, emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.
Precludes additional credit for BIT 2400, BUSI 2402, COMP 1006, ITEC 2400, ITEC 2401, SYSC 2004.
Prerequisite(s): COMP 1005 or COMP 1405. Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 1501 [0.5 credit]
Introduction to Computer Game Design
Introduction to computer game programming interfaces. Topics may include: game balance and level design; storytelling and narrative; basic game architecture; sprite-based games and isometric games; representation of scenes; user interaction; architecture of game consoles; development tools for game consoles; interaction with game peripherals.
Prerequisite(s): COMP 1005 or COMP 1405.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 1601 [0.5 credit]
Introduction to Mobile Application Development
Introduction to developing mobile applications using the Mac OS X platform. Topics include: the Objective-C programming language; development tools; framework API's; and the Quartz graphic system. Extensive practical experience with development for Apple mobile devices such as the iPhone.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1005 or COMP 1405.
Lecture/lab four hours a week.
COMP 1805 [0.5 credit]  
Discrete Structures I  
Introduction to discrete mathematics and discrete structures. Topics include: propositional logic, predicate calculus, set theory, complexity of algorithms, mathematical reasoning and proof techniques, recurrences, induction, finite automata and graph theory. Material is illustrated through examples from computing. Includes: Experiential Learning Activity  
Precludes additional credit for MATH 1800.  
Prerequisite(s): one Grade 12 university preparation mathematics course.  
Lectures three hours a week, tutorial one hour a week.

COMP 1910 [0.5 credit]  
Internship  
The internship exposes students to industrial software development via placement in a local enterprise. This course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.  
Includes: Experiential Learning Activity  
Prerequisite(s): Permission of the School and registration in internship option.

COMP 1911 [0.5 credit]  
Internship  
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the BCS.  
Includes: Experiential Learning Activity  
Prerequisite(s): COMP 1910 and registration in internship option.

COMP 2401 [0.5 credit]  
Introduction to Systems Programming  
Introduction to system-level programming with fundamental OS concepts, procedures, primitive data types, user-defined types. Topics may include process management, memory management, process coordination and synchronization, inter-process communication, file systems, networking, pointers, heap and stack memory management, and system/library calls.  
Precludes additional credit for SYSC 2006.  
Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.  
Lectures three hours a week, tutorial one and a half hours a week.

COMP 2402 [0.5 credit]  
Abstract Data Types and Algorithms  
Introduction to the design and implementation of abstract data types and to complexity analysis of data structures. Topics include: stacks, queues, lists, trees and graphs. Special attention is given to abstraction, interface specification and hierarchical design using an object-oriented programming language.  
Precludes additional credit for SYSC 2100.  
Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.  
Lectures three hours a week.

COMP 2404 [0.5 credit]  
Introduction to Software Engineering  
Introduction to object-oriented software development, with emphasis on the design and implementation of maintainable, reusable software. Topics include abstraction, modularity, encapsulation, and an introduction to design patterns.  
Includes: Experiential Learning Activity  
Precludes additional credit for SYSC 3010, SYSC 3110.  
Prerequisite(s): COMP 2401 with a minimum grade of C-.  
Lectures three hours a week, tutorial one and a half hours a week.

COMP 2406 [0.5 credit]  
Fundamentals of Web Applications  
Introduction to Internet application development; emphasis on computer science fundamentals of technologies underlying web applications. Topics include: scripting and functional languages, language-based virtual machines, database query languages, remote procedure calls over the Internet, and performance and security concerns in modern distributed applications.  
Includes: Experiential Learning Activity  
Precludes additional credit for SYSC 4504.  
Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.  
Lectures three hours a week and tutorial one and a half hours a week.

COMP 2501 [0.5 credit]  
Computer Game Design and Development  
Topics may include: user interaction in multiplayer games, representation of animated scenes, tools for game character development, special effects, sound programming, game AI, motion planning and control, collision detection and physics, digital rights management.  
Includes: Experiential Learning Activity  
Prerequisite(s): COMP 1501, COMP 2401 with a minimum grade of C-, and MATH 1104.  
Lectures three hours a week, tutorial one and a half hours a week.
COMP 2601 [0.5 credit]
Mobile Applications
Development of applications for mobile environments taking advantage of gesture-based input and using location and presence services. Topics include introduction to low-level network services and mobile platforms, description of architectural patterns, principles of mobile development and interaction styles for network service usage.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1601.
Lecture/lab four hours a week.

COMP 2801 [0.5 credit]
Introduction to Robotics
An introduction to the field of mobile robots and their applications from a computer science perspective. The course will discuss common robot programming architectures and strategies. Students will build various robot configurations and experiment with a variety of sensors using behavior-based programming.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 1807 (no longer offered).
Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.
Lab four hours a week.

COMP 2804 [0.5 credit]
Discrete Structures II
A second course in discrete mathematics and discrete structures. Topics include: counting, sequences and sums, discrete probability, basic statistics, recurrence relations, randomized algorithms. Material is illustrated through examples from computing.
Prerequisite(s): COMP 1805 with a minimum grade of C-, or permission of the School of Computer Science for those in Combined Honours in Computer Science and Mathematics.
Lectures three hours a week.

COMP 2910 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1911 and registration in internship option.

COMP 2911 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the BCS.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 2910 and registration in internship option.
COMP 3007 [0.5 credit]
Programming Paradigms
An introduction to alternative programming paradigms such as functional, constraint-based, concurrent, and logic programming.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3101.
Prerequisite(s): COMP 1805 with a minimum grade of C-, and either COMP 2402 or (SYSC 2004 and SYSC 2100). Lectures three hours a week.

COMP 3008 [0.5 credit]
Human-Computer Interaction
Fundamentals of the underlying theories, design principles, development and evaluation practices of human-computer interaction (HCI). Topics may include: theories of interaction, user interface frameworks, desktop, web, mobile, and immersive applications, usability inspection and testing methods, and quantitative and qualitative approaches to HCI research.
Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504). Lectures three hours a week.

COMP 3009 [0.5 credit]
Computer Graphics
An overview of computer graphics covering rendering, modeling, and animation. Topics include geometric primitives and modeling; image formation algorithms such as ray tracing and the Z-buffer; lighting, shading, and texture; and introduction to physics-based animation and character animation.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 2401 with a minimum grade of C-, (COMP 2402 or SYSC 2100), MATH 1007, and MATH 1104.
Lectures/lab four hours a week.

COMP 3106 [0.5 credit]
Introduction to Artificial Intelligence
Includes: Experiential Learning Activity
Precludes additional credit for COMP 4106 (no longer offered).
Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2804.
Lectures three hours a week.

COMP 3109 [0.5 credit]
Applied Cryptography and Authentication
Practical aspects of cryptography. Pseudo random number generation, symmetric cryptography (stream and block ciphers), modes of operation, hash functions, message and entity authentication protocols, zero knowledge, pitfalls deploying public-key encryption and digital signatures, key distribution, secret-sharing.
Precludes additional credit for COMP 4109 (no longer offered).
Prerequisite(s): (COMP 2402 or SYSC 2100) and COMP 2804.
Lectures three hours a week.

COMP 3203 [0.5 credit]
Principles of Computer Networks
This is an introductory course to the field of Network Computing. Topics include: Protocol Architectures and Internetworking, Types of Networks, Communication Protocols, End-System and Network Traffic Management, Structure of Routing and Congestion Control.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 4602.
Prerequisite(s): COMP 2401 with a minimum grade of C-, and (COMP 2402 or SYSC 2100). Lectures three hours a week.

COMP 3301 [0.5 credit]
Technical Writing for Computer Science
Technical communication for computer science majors, concentrating on writing scientific papers and technical reports. Principles of clarity and precision in writing and communication. Practical exercises and readings from recent technical publications will be used.
Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110). Lectures three hours a week.

COMP 3308 [0.5 credit]
Bioinformatics
This practical interdisciplinary course will provide a broad overview of bioinformatics in which computer science and mathematics are applied to solve problems in molecular biology. Topics include gene prediction, sequence alignment, phylogeny, molecular interactions, macromolecular structure prediction and biological databases.
Includes: Experiential Learning Activity
Also listed as BIOC 3008 and BIOL 3008.
Prerequisite(s): BIOC 2200 or BIOL 2200, or permission of the Biochemistry Institute.
Lecture two hours a week, computer workshop three hours a week.
COMP 3400 [0.5 credit]
Computational Logic and Automated Reasoning
Applications of formal logic in computer science. Symbolic logics such as classical predicate calculus are used to represent domain knowledge, to model computational problems and to solve them by means of automated reasoners. Applications include artificial intelligence, software engineering, data management and hardware verification.
Prerequisite(s): COMP 2804.
Lectures three hours a week.

COMP 3501 [0.5 credit]
Foundations of Game Programming and Computer Graphics
Mathematical concepts of 3D engines. Topics may include: illumination and visibility determination; quaternions; homogeneous coordinates; transforms; ray tracing; bump mapping; portal systems; polygonal techniques; shadows; and linear and rotational physics.
Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2501.
Lectures three hours a week.

COMP 3801 [0.5 credit]
Algorithms for Modern Data Sets
Algorithm design techniques for modern data sets arising in, for example, data mining, web analytics, epidemic spreads, search engines and social networks. Topics may include: data mining, hashing, streaming, clustering, recommendation systems, link analysis, dimensionality reduction, online, social networking, game theoretic and probabilistic algorithms.
Prerequisite(s): COMP 2804 with a minimum grade of B+.
Lecture three hours a week.

COMP 3803 [0.5 credit]
Introduction to Theory of Computation
Theoretical aspects of computer science. Topics include: formal languages and automata theory, computability theory.
Precludes additional credit for COMP 2805 (no longer offered).
Prerequisite(s): COMP 2804.
Lectures three hours a week.

COMP 3804 [0.5 credit]
Design and Analysis of Algorithms I
An introduction to the design and analysis of algorithms. Topics include: divide-and-conquer, dynamic programming, linear programming, greedy algorithms, graph algorithms, NP-completeness.
Also listed as MATH 3804.
Prerequisite(s): (COMP 2402 or SYSC 2100) and either COMP 2804 or (MATH 2007 and MATH 2108).
Lectures three hours a week.

COMP 3805 [0.5 credit]
Discrete Structures and Applications (Honours)
Also listed as MATH 3855.
Precludes additional credit for MATH 3805 (no longer offered) and MATH 3825.
Prerequisite(s): MATH 2100 or a grade of B or higher in MATH 2108 or MATH 3101.
Lectures three hours a week and one hour tutorial.

COMP 3807 [0.5 credit]
Mathematical Software
Incorporation of basic numerical methods into efficient, reliable software. The course includes examination of existing software systems, e.g. linear systems, non-linear systems, optimization, or differential equations.
Includes: Experiential Learning Activity
Also listed as MATH 3807.
Prerequisite(s): A grade of C- or higher in COMP 3806 or MATH 3806.

COMP 3910 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 2911 and registration in internship option.

COMP 3911 [0.5 credit]
Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 3910 and registration in internship option.

COMP 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
COMP 4000 [0.5 credit]  
**Distributed Operating Systems**  
An advanced course emphasizing the principles of distributed operating systems including networking protocols, distributed file systems, remote IPC mechanisms, graphical user interfaces, load balancing, and process migration. Case studies include current "standards" as well as novel systems under development. Includes: Experiential Learning Activity  
Prerequisite(s): (COMP 3000 or SYSC 4001) and (COMP 3203 or SYSC 4602).  
Lectures three hours a week.

COMP 4001 [0.5 credit]  
**Distributed Computing**  
Overview of distributed computing. Topics include: computational models, communication complexity, design and analysis of distributed algorithms and protocols, fault-tolerant protocols, synchronous computations. Applications may include: communication in data networks, control in distributed system (e.g., election, distributed mutual exclusion), manipulation of distributed data (e.g., ranking).  
Prerequisite(s): COMP 1805 with a minimum grade of C-, COMP 2401 with a minimum grade of C-, and (COMP 2406 or SYSC 4504).  
Lectures three hours a week.

COMP 4002 [0.5 credit]  
**Real-Time 3D Game Engines**  
The design and implementation of game engines for real-time 3D games including topics such as camera control, environmental effects, articulated models, terrain, vegetation, collision detection, particles, emitters, triggers, portals, waypoints, mirrors, and shadows.  
Prerequisite(s): COMP 2404 or SYSC 3010 or SYSC 3110.  
Lectures three hours a week.

COMP 4003 [0.5 credit]  
**Transaction Processing Systems**  
Concepts and architectures of transaction processing systems and on-line transaction processing, with emphasis on data integration systems. Transaction properties and models, embedded-SQL, active rules, consistency maintenance, serializability, concurrency control, recovery, data integration systems and federated databases, introduction to transactions in web services and workflow systems.  
Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 3005.  
Lectures three hours a week.

COMP 4004 [0.5 credit]  
**Software Quality Assurance**  
Introduction to the theory and practice of Software Quality Assurance. Topics include: equivalence partitioning, test-driven testing, unit testing patterns, refactoring, software metrics, requirements engineering, scenario modeling and acceptance testing, model-based testing, state machine testing, software testing theory and tools. Precludes additional credit for SYSC 4101.  
Prerequisite(s): COMP 3004.  
Lectures three hours a week.

COMP 4009 [0.5 credit]  
**Programming for Clusters and Multi-Core Processors**  
Introduction to parallel architectures, programming languages and algorithms for processor clusters and multi-core processors. Distributed memory architectures, cluster computing, message passing parallel programming, multi-core processors, shared memory parallel programming, use of thread libraries, parallel performance analysis.  
Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2804.  
Lectures three hours a week.

COMP 4102 [0.5 credit]  
**Computer Vision**  
The basic ideas and techniques of computer vision. The central theme is reconstructing 3D models from 2D images. Topics include: image formation, image feature extraction, camera models, camera calibration, structure from motion, stereo, recognition, augmented reality, image searching.  
Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (MATH 1104 or MATH 1107).  
Lectures three hours a week.

COMP 4105 [0.5 credit]  
**Machine Learning**  
A subset of topics in Artificial Intelligence that emphasize algorithms and statistical models that rely on patterns and inference. Some topics include decision trees, dimension reduction, ensemble methods, Support Vector Machines, some of the fundamental aspects of Neural Networks, and clustering.  
Includes: Experiential Learning Activity  
Prerequisite(s): COMP 3106 and (MATH 1104 or MATH 1107).  
Lecture three hours a week.
COMP 4107 [0.5 credit]

Neural Networks
Theory and application of Neural Networks to problems in machine learning. Topics include explanation of the representation, transformation and compression of data, biological models, Hebbian learning and the Perceptron. Modern neural network architectures, including feed forward, recurrent, convolutional and generative adversarial are introduced.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 5206.
Prerequisite(s): COMP 3106 and (MATH 1104 or MATH 1107).
Lectures three hours a week.

COMP 4108 [0.5 credit]

Computer Systems Security
Introduction to information security in computer and communications systems, including network, operating systems, web and software security; Passwords, authentication applications, privacy, data integrity, anonymity, secure email, IP security, security infrastructures, firewalls, viruses, intrusion detection, network attacks.
Precludes additional credit for SYSC 4810.
Prerequisite(s): (COMP 3000 or SYSC 4001) and COMP 3109.
Lectures three hours a week.

COMP 4111 [0.5 credit]

Data Management for Business Intelligence
Application of computational techniques to support business activities, such as decision making, business understanding, data analysis, business process automation, learning from data, producing and using data-centric business models, ontology-based data access and integration, data quality assessment and cleaning and use of contextual data.
Prerequisite(s): COMP 3005.
Also offered at the graduate level, with different requirements, as COMP 5111, for which additional credit is precluded.
Lectures three hours a week.

COMP 4202 [0.5 credit]

Computational Aspects of Geographic Information Systems
Through recent advances in navigation systems, mobile devices, and new software such as Mapquest and Google Earth, GIS is becoming increasingly important and exciting from a CS perspective. This course lays the algorithmic foundations to understand, use and further this technology.
Prerequisite(s): COMP 3804 or MATH 3804.
Also offered at the graduate level, with different requirements, as COMP 5204, for which additional credit is precluded.
Lecture three hours a week.

COMP 4203 [0.5 credit]

Wireless Networks and Security
An introduction to wireless networks covering both networking issues and security aspects of modern wireless environments. Fundamentals of mobile LANs, ad hoc, sensor networks, secure routing, searching, clustering, multicasting, localization, mobile IP/TCP, confidentiality, key establishment, authentication, broadcasting, RFIDs, and rogue attacks.
Prerequisite(s): COMP 3203 or SYSC 4602.
Lectures three hours a week.

COMP 4206 [0.5 credit]

Evolving Information Networks
Convergence of social and technological networks. Interplay between information content, entities creating it and technologies supporting it. Structure and analysis of such networks, models abstracting their properties, techniques link analysis, search, mechanism design, power laws, cascading, clustering and connections with work in social sciences.
Prerequisite(s): COMP 1805, (COMP 2401 with a minimum grade of C-) and (COMP 2406 or SYSC 4504). Also offered at the graduate level, with different requirements, as COMP 5310, for which additional credit is precluded.
Lecture three hours a week.

COMP 4308 [0.5 credit]

Computational Systems Biology
Modeling and simulation of metabolic and regulatory networks towards understanding complex and highly dynamic cellular systems. Biotechnological applications include metabolic engineering, synthetic biology, and drug discovery.
Includes: Experiential Learning Activity
Also listed as BIOC 4008.
Prerequisite(s): BIOC 3101 or permission of the Biochemistry Institute.
Lecture one and a half hours per week, workshop one and a half hours per week.

COMP 4501 [0.5 credit]

Advanced Facilities for Real-Time Games
A practical course on advanced facilities of game engines. Such facilities include notions such as physics engines, shadow mapping, lighting with thousands of lights, relief mapping, ambient occlusion, water flow, deferred rendering, occlusion culling, water effects, mirrors, and screen space reflection.
Prerequisite(s): COMP 3501.
Lectures three hours a week.
COMP 4601 [0.5 credit]  
**Intelligent Web-based Information Systems**  
Introduction to the principles and practice of creation, delivery and analysis of multimedia content in web-based systems. Topics include analysis of webs of documents, social network analysis, recommender systems and problems of trust, reputation and influence in e-commerce systems.  
Includes: Experiential Learning Activity  
Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or COMP 2601 or SYSC 4504).  
Lecture/lab four hours a week.

COMP 4602 [0.5 credit]  
**Social Networking**  
Introduction to virtual communities, overlay networks and social networking. Topics include architectural principles for heterogeneous social networking platforms, trust and reputation as social concepts, agent-based computing, and extraction of trends and patterns from information exchanged between community members.  
Includes: Experiential Learning Activity  
Precludes additional credit for COMP 3601 (no longer offered).  
Prerequisite(s): ((COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504)) or COMP 2601.  
Lectures/labs four hours per week.

COMP 4803 [0.5 credit]  
**Computable Functions**  
Recursive functions and computability, algorithms, Church’s thesis, Turing machines, computational logic, NP-completeness.  
Also listed as MATH 4803.  
Prerequisite(s): MATH 2100 or COMP 3805 or permission of the School.

COMP 4804 [0.5 credit]  
**Design and Analysis of Algorithms II**  
A second course on the design and analysis of algorithms. Topics include: advanced recurrence relations, algebraic complexity, advanced graph algorithms, amortized analysis, algorithms for NP-complete problems, randomized algorithms.  
Prerequisite(s): COMP 3804 or MATH 3804.  
Lectures three hours a week.

COMP 4805 [0.5 credit]  
**Theory of Automata**  
Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems.  
Also listed as MATH 4805.  
Precludes additional credit for MATH 5605.  
Prerequisite(s): COMP 3805 or MATH 3106 or MATH 3158 (or MATH 3100) or permission of the School.  
Lectures three hours a week.

COMP 4806 [0.5 credit]  
**Numerical Linear Algebra**  
Study of matrix inversion techniques; techniques of finding eigenvalues and eigenvectors, solution of systems of linear equations; direct and indirect methods, their comparison and error analysis; applications in optimization and other areas.  
Also listed as MATH 4806.  
Prerequisite(s): MATH 2152 or MATH 1102 (no longer offered) or MATH 2107; and MATH 2000 and COMP 3806, or permission of the School.  
Lectures three hours a week.

COMP 4900 [0.5 credit]  
**Advanced Topics in Computer Science**  
Selected topics in Computer Science offered by members of the School of Computer Science.  
Prerequisite(s): permission of the School of Computer Science.  
Lectures three hours a week and up to three hours of tutorials a week.

COMP 4901 [0.5 credit]  
**Directed Studies**  
Independent study under the supervision of a member of the School of Computer Science, open only to students in the B.C.S. program. Students are required to obtain their supervisor’s written approval prior to registration and are limited to two such courses in their program.  
Prerequisite(s): permission of the School of Computer Science.

COMP 4905 [0.5 credit]  
**Honours Project**  
Under the supervision of a faculty member, Honours students complete a major Computer Science project in fourth year. Permission to register is granted once an approved project proposal is submitted to the Department. See deadlines and details on the School web site.  
Includes: Experiential Learning Activity  
Precludes additional credit for COMP 4906.  
Prerequisite(s): registration in the B.C.S. Honours program or one of the Combined Computer Science Honours programs and permission of the School of Computer Science.

COMP 4906 [1.0 credit]  
**Honours Thesis**  
An independent research project under the direct supervision of a faculty advisor. Permission to register is granted once an approved project proposal is submitted to the School of Computer Science. Evaluation is based on a written thesis and a poster presentation.  
Includes: Experiential Learning Activity  
Precludes additional credit for COMP 4905.  
Prerequisite(s): fourth-year standing in a B.C.S. Honours program with a minimum CGPA of 9.0 in the major and permission of the School of Computer Science.
COMP 4910 [0.5 credit]

Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 3911 and registration in internship option.

COMP 4911 [0.5 credit]

Internship
The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 4910 and registration in internship option.

Criminology and Criminal Justice (CRCJ)

Criminology and Criminal Justice (CRCJ) Courses

CRCJ 1000 [0.5 credit]
Introduction to Criminology and Criminal Justice
Overview of the field, including the foundational approaches of criminology and criminal justice, crime as an object of study; criminal law and criminality in Canada; (neo) classical, aetiological and social reaction perspectives; alternative criminologies.
Lectures/tutorials three hours a week.

CRCJ 2100 [0.5 credit]
Criminological Theories
Comprehensive survey of the plurality of criminological theories, from phrenology to contemporary theories concerned with issues related to crime and punishment. Students are encouraged to develop critical and reflexive thinking on various criminological issues and theories.
Prerequisite(s): CRCJ 1000 and second-year standing.
Lectures three hours per week.

CRCJ 2200 [0.5 credit]
Contemporary Issues in Criminology & Criminal Justice
Survey of contemporary criminological and criminal justice issues, ranging from criminalization, crime prevention, and surveillance strategies to debates about the criminal justice system, punishment, and reintegration. Specific topics will vary from year to year.
Prerequisite(s): CRCJ 1000 and second-year standing.
Lecture three hours per week.

CRCJ 3001 [0.5 credit]
Quantitative Methods in Criminology
Methods used conducting quantitative research. Topics include measuring and manipulating variables, reliability, validity, sampling, experimental, quasi-experimental designs and ethics.
Prerequisite(s): CRCJ 1000 and third-year standing in the B.A Honours program in Criminology and Criminal Justice.
Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3002 [0.5 credit]
Qualitative Methods in Criminology
Methods used conducting qualitative research. Topics include field research, interviewing, ethnographic research, content analysis and ethics.
Includes: Experiential Learning Activity
Prerequisite(s): CRCJ 1000 and third-year standing in the B.A Honours program in Criminology and Criminal Justice.
Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3100 [0.5 credit]
Policing (in)Security
Theories and case studies addressing contemporary efforts to police the world of (in)securities. Emphasis on Canadian dynamics within these broader transformations.
Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Lecture and discussion three hours per week.

CRCJ 3200 [0.5 credit]
Indigeneity, Coloniality, and Crime
This course explores issues related to Indigenous peoples, the criminal justice system and community with an emphasis on Indigenous scholarship and perspectives on criminology and crime.
Prerequisite(s): CRCJ 1000, INDG 1010, or INDG 1011, third year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Lecture and discussion three hours per week.

CRCJ 3201 [0.5 credit]
Selected Criminological Topics
The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Lectures three hours per week.

CRCJ 3202 [0.5 credit]
Selected Criminological Topics
The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.
Lectures three hours per week.
CRCJ 3901 [1.0 credit]
Practicum in Criminology I
Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. In the seminar class, discussions, presentations and assignments integrate applied, theoretical and empirical knowledge. CRCJ 3901 may not be repeated. Includes: Experiential Learning Activity
Prerequisite(s): Third-year standing in a B.A. in Criminology and Criminal Justice, including all of the 1000- and 2000-level requirements in the Major CGPA, and permission of the Institute.
Field placement eight hours a week, seminar three hours a week.

CRCJ 3902 [1.0 credit]
Practicum in Criminology II
Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. In the seminar class, discussions, presentations and assignments integrate applied, theoretical and empirical knowledge. CRCJ 3902 may not be repeated. Includes: Experiential Learning Activity
Prerequisite(s): Third-year Honours standing in Criminology and Criminal Justice, including all of the 1000- and 2000-level requirements in the Major CGPA, and permission of the Institute.
Field placement eight hours a week, seminar three hours a week.

CRCJ 4001 [0.5 credit]
Special Topics in Criminology
Examination of a special topic in criminology. Topics to be announced in advance of registration each year. Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4002 [0.5 credit]
Special Topics in Criminology
Examination of a special topic in criminology. Topics to be announced in advance of registration each year. Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4100 [0.5 credit]
Psychology of the Jury
This course will explore the jury system in Canada and other countries. Jury selection, deliberation, and instructions will be discussed, in addition to a number of legal and extra-legal influences on jury decision-making. Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4200 [0.5 credit]
Policing Sex
This seminar explores the policing of consensual sexual practices, paying particular attention to the theorization of consent, harm, liberation and agency in a sexual and legal context. Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4300 [0.5 credit]
Social Control
Introduction to social control from early theorizations linking social control to the genesis of the self, to preoccupations with the sorting of humans and the guiding of their conducts, including contemporary engagements with moralization, penal intensification, sovereign exceptionality, and immigration control. Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4400 [0.5 credit]
Crime, Emotions, and The Senses
This course examines the relationship between sensations, emotions, affect, crime, criminalization, social control, and penalty. It questions the rational/emotional binary and investigates how shame, humiliation, fear, panic, pain, pleasure, disgust, empathy and revenge, relate to offender motivation, criminalization, victimization, adjudication, and punishment. Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4500 [0.5 credit]
Art of (in)Justice
A participatory class that explores how social and artist movements engage with issues of justice and injustice. Features group work, some off-campus classes during course hours, guest speakers. Includes: Experiential Learning Activity
Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4600 [0.5 credit]
Sociologies of Punishment
This introductory seminar on the sociology of punishment proposes an overview of theoretical perspectives animating its contemporary forms. This overview prepares the ground for a survey of contemporary scholarship and issues in the sociology of punishment. Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.
CRCJ 4908 [1.0 credit]
Honours Thesis
A research project conducted under the direct supervision of a faculty adviser from Criminology and Criminal Justice, Psychology, Law or Sociology. Mandatory workshops and symposiums are scheduled during the year.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.A. Honours program in Criminology and Criminal Justice with a CGPA of 10.00 or better in the Major and permission of the Institute.
Workshops and symposiums as scheduled.

Critical Race Studies (CRST)

Critical Race Studies (CRST) Courses

CRST 2001 [0.5 credit]
Introduction to Critical Race Studies
Foundations and central tenets of critical race theory, its interdisciplinary debates, applications, and evolutions. Historical roots of oppression, white settler-colonialism, understanding of privilege and power, social construction of race, socio-political conditions producing systemic and institutional racism, intersections with sexism, homophobia, transphobia, classism, and ableism.
Includes: Experiential Learning Activity
Prerequisite(s): One of WGST 1808, DBST 1001, HUMR 1001, FYSM 1402 or FYSM 1403, OR permission of the Institute.
Lectures and discussion three hours a week.

CRST 4001 [0.5 credit]
Advanced Critical Race Studies
Interdisciplinary seminar on race, colonialism and feminism including theories of racial and cultural difference, structures of privilege and power, and forms of resistance. Intersectional theoretical approaches to anti-colonial and feminist analyses of racial subjugation, and engagements with Black, Indigenous and women of colour feminisms.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year standing and 1.0 credit in Women's and Gender Studies or permission of the Institute of Women's and Gender Studies.
Seminar three hours per week.

Digital Humanities (DIGH)

Digital Humanities (DIGH) Courses

DIGH 2001 [0.5 credit]
Introduction to Digital Humanities
An introduction to the principal debates in and approaches to the Digital Humanities.
Also listed as ENGL 2400.
Prerequisite(s): second-year standing or permission of the College of Humanities.
Lecture three hours a week.

DIGH 2002 [0.5 credit]
Digital Humanities: Theory and Method
A multidisciplinary survey of core theories, methodologies and tools within the Digital Humanities. Assignments will include collaborative work and applied projects.
Includes: Experiential Learning Activity
Also listed as ENGL 2401.
Prerequisite(s): second-year standing or permission of the College of Humanities.
Lecture and workshop three hours a week.

DIGH 2035 [0.5 credit]
Technology, Culture and Society
Principal theories and methods used by Science and Technology Studies (STS) scholars to examine the social and cultural shaping of technology. The substantive focus of the course is on the design, development, production, diffusion, consumption and use of technology.
Also listed as SOCI 2035.
Prerequisites: SOCI 1001 and SOCI 1002, or ANTH 1001 or ANTH 1002.
Lectures/discussion groups three hours a week.

DIGH 2705 [0.5 credit]
Popular Culture in the Digital Age
An examination of various approaches to analyzing digital media and their role in the production and consumption of contemporary cultural forms and practices. Students will reflect upon their use of digital media and the influence they have on their lives and popular culture, more generally.
Also listed as SOCI 2705.
Prerequisite(s): SOCI 1001 and SOCI 1002, or ANTH 1001 or ANTH 1002.
Lecture/discussion groups three hours a week.

DIGH 3001 [0.5 credit]
The Book in the Digital Age
A multidisciplinary course focused on the social, economic and political dimensions of the book in its manuscript, print and digital forms.
Also listed as ENGL 3401.
Prerequisite(s): ENGL 3035 or permission of the College of Humanities.
Lecture three hours a week.

DIGH 3035 [0.5 credit]
Science, Culture and Society: Social Studies of Science
Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.
Also listed as SOCI 3035, ANTH 3035.
Prerequisite(s): DIGH 2035 or SOCI 2035 and third-year standing.
Lecture three hours a week.
DIGH 3704 [0.5 credit]
Cognitive Science and the Digital Humanities
Exploration of the roles of human and artificial cognition in the digital humanities. Topics may include virtual and augmented reality as applied to the humanities, cognitive issues in hypertext and hypermedia; linguistic and philosophical considerations in digital media, cognitive narratology, and artificial intelligence.
Also listed as CGSC 3704.
Prerequisite(s): CGSC 1001; CGSC 2001 or DIGH 2001; and third-year standing.
Seminar three hours per week.

DIGH 3812 [0.5 credit]
Digital History
The digital representation of history, exploring the approaches, issues, and methods of working in this environment. Topics may include gaming, virtual environments, digital research tools, public digital history. (Field e).
Includes: Experiential Learning Activity
Also listed as HIST 3812.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lecture three hours a week.

DIGH 3814 [0.5 credit]
Crafting Digital History
This course applies the creative use of information and media/computing technologies to address the digital cultural heritage issues of public historians, archaeologists, and anthropologists. Topics may include webscraping, data mining, designing and implementing research databases, and visual storytelling of those results. (Field e).
Includes: Experiential Learning Activity
Also listed as HIST 3814.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week or online.

DIGH 4001 [0.5 credit]
Studies in Digital Humanities
A study of current issues and debates in Digital Humanities.
Also listed as ENGL 4155.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Seminar or lecture three hours a week.

DIGH 4002 [0.5 credit]
Digital Culture and the Text I
A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.
Also listed as ENGL 4125.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Seminar or lecture three hours a week.

DIGH 4003 [0.5 credit]
Digital Culture and the Text II
A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.
Also listed as ENGL 4145.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Seminar or lecture three hours a week.

DIGH 4004 [0.5 credit]
Digital Humanities Workshop
This workshop will provide students with the opportunity to complete an individual or collaborative capstone project in the Digital Humanities.
Includes: Experiential Learning Activity
Also listed as ENGL 4404.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Workshop three hours a week.

DIGH 4005 [0.5 credit]
Digital Humanities Practicum
Practical experience gained by working on projects under the supervision of the staff of a participating public- or private-sector institution or organization, including a final written assignment or equivalent project. A maximum of 1.0 practicum credit may be applied towards degree requirements.
Includes: Experiential Learning Activity
Also listed as ENGL 4405.
Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.
Practicum.

Disability Studies (DBST)

Disability Studies (DBST) Courses

DBST 1001 [0.5 credit]
Introduction to Disability Studies
Challenging negative stereotypes of disability by allowing students the opportunity to explore disability through many different venues including history, theory, culture, ethics, policy and disability rights. Reframing disability from personal tragedy to issues of oppression, access, inclusion and equality.
Lectures and discussion groups three hours per week.

DBST 2001 [0.5 credit]
Disabling Society
Interdisciplinary approach to the debates and theories that challenge the normative values, knowledge sources, and cultural representations of disablement in society.
Prerequisite(s): second-year standing and DBST 1001.
Lecture and discussion three hours a week.
DBST 3001 [0.5 credit] 
Disability Studies: Policy and Activism 
The complex legal, policy and discursive frameworks that shape the lives of persons with disability and the history of the emergence of the disability rights movement as a scholarly and activist challenge to, and renegotiation of, those frameworks. 
Includes: Experiential Learning Activity 
Precludes additional credit for DBST 4001 (no longer offered). 
Prerequisite(s): third-year standing. 
Lecture three hours a week. 

DBST 3060 [0.5 credit] 
Critical Disability Studies 
The course engages contemporary disability theory, culture, and activism to consider bodily difference and its relation to the workings of power and social control, accessibility, normalization, ableism, and medicalization. Students will gain an understanding of the contemporary debates, theories, and methodologies of critical disability studies. 
Also listed as SOCI 3060. 
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. 
Lectures three hours a week. 

DBST 3301 [0.5 credit] 
Introduction to Deaf Studies 
A critical introduction to Deaf community and culture as they relate to a social model of disability, to ethnicity, and to issues of diversity and inclusion. Discourse analysis of research and policy in education for Deaf students from early childhood and beyond. 
Also listed as ALDS 3301. 
Precludes additional credit for ALDS 3903A if taken in Winter term 2016 or Winter term 2018, and ALDS 4906A if taken in Fall term 2016. 
Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or enrolment in the Minor in Disability Studies. 
Seminars three hours a week. 

DBST 3304 [0.5 credit] 
Disability and Childhood: Transnational Perspectives 
Drawing on theory and research in disabled children’s childhood studies, sociology of childhood, disability studies, and girlhood studies, this course examines the discursive and material constructions of disabled youth and childhood in transnational contexts in relation to emerging neo-colonial, neo-imperialist, and neo-liberal ideologies. 
Also listed as CHST 3304. 
Prerequisite(s): third-year standing in Childhood and Youth Studies or Disability Studies. 
Lecture three hours a week. 

DBST 3900 [0.5 credit] 
Independent Study 
Essays, discussions, and/or examinations based on a bibliography constructed by the student in consultation with an instructor. 
Prerequisite(s): third or fourth-year standing in the Disability Studies Minor and a CGPA of 9.0 or higher. 

Earth Sciences (ERTH) Courses 

ERTH 1006 [0.5 credit] 
Exploring Planet Earth 
Origin of the Earth, concepts of geological time, and exploration of the interaction and duration of geological processes that shape the surface to deep interior of our planet, the climate, and formation of rocks and earth resources. 
Includes: Experiential Learning Activity 
Precludes additional credit for ERTH 1001 (no longer offered), ERTH 1010, ERTH 2404. 
Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended. This course is for students who are enrolled in the Faculty of Science. 
Lectures three hours a week, a laboratory three hours a week, and a field excursion. 

ERTH 1009 [0.5 credit] 
The Earth System Through Time 
Origin and co-evolution of Earth and life over its 4.56 billion year history. Connections between plate tectonics, rock formation, climate and global change. Early marine life, colonization of land, mass extinctions, and the use of fossils for interpreting past ecosystems. 
Includes: Experiential Learning Activity 
Precludes additional credit for GEOL 1008 (no longer offered), ERTH 1011. 
Prerequisite(s): This course is for students who are enrolled in the Faculty of Science. 
Lectures three hours a week, a laboratory three hours a week. 

ERTH 1010 [0.5 credit] 
Our Dynamic Planet Earth 
Origin of the Earth, concepts of geological time, and exploration of the interaction and duration of geological processes that shape the surface to deep interior of our planet, the climate, and formation of rocks and earth resources. 
Precludes additional credit for ERTH 1001 (no longer offered) and ERTH 1006. 
Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended. This course is for students who are not enrolled in the Faculty of Science. 
Lectures three hours a week.
ERTH 1011 [0.5 credit]
Evolution of the Earth
Origin and co-evolution of Earth and life over its 4.56 billion year history. Connections between plate tectonics, rock formation, climate and global change. Early marine life, colonization of land, mass extinctions and the use of fossils for interpreting past ecosystems. Precludes additional credit for GEOL 1008 (no longer offered) and ERTH 1009. Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended; ERTH 1010 is normally taken prior to this course. This course is for students who are not enrolled in the Faculty of Science. Lectures three hours a week.

ERTH 2004 [0.5 credit]
Maps, Satellites and the Geospatial Revolution
Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing). Also listed as GEOM 1004. Precludes additional credit for GEOM 2004 (no longer offered). Lectures and laboratory, four hours a week.

ERTH 2102 [0.5 credit]
Mineralogy to Petrology
Chemical, optical and crystallographic properties of common rock-forming minerals, with introduction to common mineral assemblages of igneous, sedimentary, and metamorphic rocks. Includes: Experiential Learning Activity Precludes additional credit for ERTH 3202 (no longer offered). Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013). Lectures two hours a week and laboratory three hours a week.

ERTH 2104 [0.5 credit]
Igneous Systems, Geochemistry and Processes
The sources and magmatic evolution of volcanic and plutonic rocks systems, with emphasis on geochemical, mineralogical, and textural characteristics, and relations to igneous processes. Includes: Experiential Learning Activity Precludes additional credit for ERTH 3202 (no longer offered). Prerequisite(s): (CHEM 1001 or CHEM 1005) and (CHEM 1002 or CHEM 1006), (MATH 1004 or MATH 1007), (MATH 1104 or MATH 1107) and ERTH 2102. Lectures three hours a week, laboratory three hours a week and a field excursion.

ERTH 2105 [0.5 credit]
Geodynamics
The structure, composition, and rheological properties of the Earth: lithosphere, mantle and core. Plate tectonics and its relation to geophysical fields, driving mechanisms, and processes at plate boundaries and in plate interiors. Includes: Experiential Learning Activity Precludes additional credit for ERTH 3805 (no longer offered). Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013). Lectures two hours a week and a laboratory three hours a week.

ERTH 2312 [0.5 credit]
Paleontology
Introduction to macrofossil and microfossil groups, their paleoenvironmental significance, and principles of evolutionary paleoecology. Includes: Experiential Learning Activity Precludes additional credit for ERTH 2316, GEOL 2301 (no longer offered) and GEOL 2306 (no longer offered). Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013). Lectures two hours a week and a laboratory three hours a week.

ERTH 2314 [0.5 credit]
Sedimentation and Stratigraphy
Origin of sediments and their transport, distribution, and primary structures; processes of sediment-to-rock transformation; spatial patterns; controls of stratigraphy; methods of correlation. Includes: Experiential Learning Activity Precludes additional credit for ERTH 2318. Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013). Lectures three hours a week and a laboratory three hours a week.
ERTH 2316 [0.5 credit]
Paleoecology
Introduction to macrofossil and microfossil groups, their paleoenvironmental significance, and principles of evolutionary paleoecology.
Precludes additional credit for ERTH 2312. Not available for credit in B.Sc. Earth Sciences programs.
Prerequisite(s): ERTH 1006 and ERTH 1009. Priority given to students in the Minor in Earth Sciences.
Lectures two hours a week.

ERTH 2318 [0.5 credit]
Sedimentology
Origin of sediments and their transport, distribution, and primary structures; processes of sediment-to-rock transformation; spatial patterns; controls of stratigraphy and methods of correlation.
Precludes additional credit for ERTH 2314. Not available for credit in B.Sc. Earth Sciences programs.
Prerequisite(s): ERTH 1006 and ERTH 1009. Priority given to students in the Minor in Earth Sciences.
Lectures three hours a week.

ERTH 2401 [0.5 credit]
Dinosaurs
A general introduction to dinosaurs, their place in evolution, their social behaviour, the Mesozoic landscape and extinction theories.
Lectures three hours a week.

ERTH 2402 [0.5 credit]
Climate Change: An Earth Sciences Perspective
An exploration of the often dramatic climate changes that have occurred through earth history from a geological perspective, emphasizing the history of earth climates, geological causes of climate change and impact that rapid climate change has had on the biosphere.
Lectures three hours a week.

ERTH 2403 [0.5 credit]
Introduction to Oceanography
An environmental approach to understanding the oceans; introducing the physical and biological aspects of oceanography, marine resources and marine pollution.
Precludes additional credit for ERTH 3206.
Lectures three hours per week.

ERTH 2404 [0.5 credit]
Engineering Geoscience
Applications of the basic concepts of geology, earth materials and earth processes to practical engineering and environmental science. Topics include rock and soil mechanics, slope stability, hydrogeology, geological hazards, and site investigations. Overview of related geophysical methods.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 2414 (no longer offered) and ERTH 1006.
Prerequisite(s): completion of first year of any B.Eng. program.
Lectures three hours a week and a laboratory three hours a week.

ERTH 2406 [0.5 credit]
Geology and Map Interpretation
Analysis and interpretation of geological features and processes using rocks, maps and cross sections. Introduction to computational methods.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2102 and ERTH 2004.
Lectures two hours a week and a laboratory three hours a week.

ERTH 2415 [0.5 credit]
Natural Disasters
Physical characteristics and causes of natural disasters of geological origin such as volcanic eruptions, earthquakes, tsunami, landslides, hurricanes and meteor impacts. Discussion on historical perspective, societal impact and mitigation strategies. Emphasis on Canadian case histories.
Precludes additional credit for ERTH 1003 (no longer offered).
Prerequisite(s): second-year standing in any degree program. With the exception of the Minor in Earth Sciences, available as a free elective only in any B.Sc. program, including Earth Sciences.
Lectures three hours a week.

ERTH 2419 [0.5 credit]
On the Origin of Planets
Origin and evolution of all planetary objects in the solar system. Topics include the geology of comets, asteroids, the terrestrial planets and rocky moons, Earth's formation and early evolution, ocean worlds, the search for exoplanets and detection of extraterrestrial life.
Lectures three hours a week.

ERTH 2802 [0.5 credit]
Field Geology I
Field analysis using geological, geophysical and computational methods leading to the interpretation of the origins of geological features and processes.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2406 and permission of the department.
Field work for two weeks off campus. A supplementary fee will apply.

ERTH 3002 [0.5 credit]
Gemology
Gemstones including their physical and chemical properties, geological formation and geographic occurrence. Introduction to gemological laboratory methods.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2102.
Lectures two hours a week and laboratory two hours a week.
ERTH 3003 [0.5 credit]
Geochemistry and Geochronology
Geochemical composition of reservoirs from the deep Earth to surface environments. Use of geochemistry and isotope geochemistry to track geological processes. Introduction to a variety of scientific dating methods (geochronology).
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 2101 (no longer offered).
Prerequisite(s): ERTH 2102, ERTH 2104 and ERTH 2105.
Lecture three hours a week and a laboratory two hours a week.

ERTH 3111 [0.5 credit]
Vertebrate Evolution: Mammals, Reptiles, and Birds
Evolution of mammals, reptiles and birds. Emphasis on surveying amniote diversity, and the origin of key amniote transformations, as evidenced by the fossil record.
Includes: Experiential Learning Activity
Also listed as BIOL 3111.
Prerequisite(s): ERTH 1009 or BIOL 2001, or permission of the department.
Lectures two hours a week and a laboratory three hours a week.

ERTH 3112 [0.5 credit]
Vertebrate Evolution: Fish and Amphibians
Evolution of fish and amphibians. Emphasis on surveying fish and amphibian diversity, and the origin of key transformations of these groups, as evidenced by the fossil record.
Includes: Experiential Learning Activity
Also listed as BIOL 3112.
Prerequisite(s): ERTH 1009 or BIOL 2001, or permission of the department.
Lectures two hours a week and a laboratory three hours a week.

ERTH 3113 [0.5 credit]
Geology of Human Origins
The origin and evolution of our species from geological, biological and cultural perspectives. The course traces human ancestry from our primate roots through time and changing environments, and explores controversies, frauds, and misperceptions.
Prerequisite(s): any 1000 or 2000 level Earth Sciences or Biology course.
Lectures three hours per week.

ERTH 3203 [0.5 credit]
Sedimentology
A 10-day field study of modern and ancient sedimentary and ecological systems and their stratigraphy in a geological region outside of the Ottawa area. Subsequent in-class seminars examine significant changes in sedimentary environments through Earth's history. A supplementary fee will apply.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3201 (no longer offered).
Prerequisite(s): ERTH 2314, enrolment in one of the ERTH Honours, Combined Honours or Major programs, a 2000-level CGPA of 8.0 and permission of the Department.
Ten-day off-campus field course.

ERTH 3204 [0.5 credit]
Mineral Deposits
Analysis and interpretation of the geological and geochemical processes responsible for mineral deposit genesis in a global context.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2104.
Lectures and laboratory five hours a week.

ERTH 3205 [0.5 credit]
Physical Hydrogeology
Principles of deep- to shallow fluid flow within the Earth's crust, and introduction to the exploration, development and management of groundwater as a global resource.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).
Lecture three hours a week and a laboratory three hours a week.

ERTH 3206 [0.5 credit]
Sedimentary Depositional Systems
Application of sedimentary facies in class and local field-based settings to interpret modern and ancient depositional environments and stratigraphic succession related to climatic and oceanographic influences. Subsequent in-class seminars examine significant changes in sedimentary environments through Earth’s history.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3208 (no longer offered).
Prerequisite(s): ERTH 2314.
Field and class based instruction, 6 hours a week.

ERTH 3207 [0.5 credit]
Metamorphic Petrology and Processes
Genesis of metamorphic rocks as determined from field, petrographic and geochemical data.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3202 (no longer offered).
Prerequisite(s): ERTH 2104.
Lectures two hours a week, a laboratory three hours a week and a field excursion.
ERTH 3405 [0.5 credit]
Geophysical Methods
An introduction to the tools of applied geophysics including seismology, electrical, magnetic, and gravitational surveying methods.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 2405 (no longer offered).
Prerequisite(s): ERTH 2105.
Lecture two hours a week and a laboratory three hours a week.

ERTH 3806 [0.5 credit]
Structural Geology
Structures and deformational processes in a variety of crustal settings. Applications to geological engineering and mineral and petroleum exploration.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2105 and ERTH 2406.
Lecture two hours a week and a laboratory three hours a week.

ERTH 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ERTH 4003 [0.5 credit]
Directed Studies in Geology
One or more projects involving at least 15 days field and/or laboratory research, not related to thesis research. Assessment based on written reports and an oral presentation. Expenses for long-distance travel are borne by the student.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in any B.Sc. Hons. or Combined Hons. program in Earth Sciences.
Schedule to be arranged.

ERTH 4004 [0.5 credit]
Special Topics in Earth Sciences
Field, laboratory or literature research, not related to thesis research. Assessment based on written reports and an oral presentation. Expenses for travel are borne by the student.
Prerequisite(s): fourth-year standing in any B.Sc. Hons. or Combined Hons. program in Earth Sciences. Major CGPA 8.5 or higher at time of registration for the course.
Schedule to be arranged.

ERTH 4005 [0.5 credit]
Micropaleontology
Paleoecological and biostratigraphic significance, and evolutionary history of marine and freshwater microorganisms.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2312.
Lectures, seminars and/or laboratory five hours a week.

ERTH 4006 [0.5 credit]
Geobiology
Exploration of the relationship between micro- and macro-evolutionary processes and the Earth’s physical and chemical environment. Paleobiology and evolutionary ecology in the context of paleoceanography, paleolimnology and paleoclimatology. May include one or two weeks of field based instruction with costs borne by the student.
Prerequisite(s): ERTH 2312.
Field excursions in addition to lectures or seminars three hours a week.

ERTH 4007 [0.5 credit]
Evolutionary Developmental Paleobiology
This course explores the mechanistic basis of organismic evolution from genetic, morphogenetic and epigenetic perspectives, within a phylogenetic context of living and extinct vertebrates.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2312 or BIOL 2001, and BIOL 2104.
Lectures or seminars three hours per week.

ERTH 4107 [0.5 credit]
Geotechnical Mechanics
Includes: Experiential Learning Activity
Also listed as CIVE 3208.
Prerequisite(s): ERTH 2406 and ERTH 3405.
Lectures three hours a week, laboratory three hours alternate weeks.

ERTH 4206 [0.5 credit]
Contaminant and Remediation Hydrogeology
Geochemical and physical processes controlling contaminant release, migration, and fate in groundwater along with the processes and techniques used for contaminant mitigation and remediation. Examples will include organic and inorganic contaminants in a variety of settings.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3003 and ERTH 3205.
Lectures and seminars three hours per week.
ERTH 4209 [0.5 credit]
Mineral Exploration Field Geology
Introduction to the essentials of conducting geological mapping campaign in the Canadian Shield in a field area that has seen considerable industry exploration for volcanogenic massive sulfide mineralization. Activities include outcrop and trench mapping, strain analysis, interpretation of geophysical data, drilling proposals, report writing.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 3209.
Prerequisite(s): ERTH 2104, ERTH 3207, ERTH 3806. Field work for two weeks off-campus. A supplementary fee will apply.

ERTH 4303 [0.5 credit]
Resources of a Finite Earth
Earth's resources: where they occur, how they are concentrated, how they are extracted and used, how human exploitation of natural resources affects the environment, and the limits to growth imposed by finite supplies of natural resources.
Prerequisite(s): third-year standing in any degree program. Lectures three hours a week.

ERTH 4305 [0.5 credit]
Carbonate Sedimentology
The origin, composition and diagenesis of carbonate rocks. Study of modern and ancient platform systems; development of facies models; petrographic and geochemical analysis of limestones and dolostones.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3203 or ERTH 3206. Lecture two hours a week and a laboratory three hours a week.

ERTH 4306 [0.5 credit]
Resource Basin Analysis
Surface and subsurface geological and geophysical techniques used to define the distribution and origin of geological basins, the architecture of basin fill, and characterize the distribution of water, petroleum and mineral resources.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3203 or ERTH 3206, ERTH 3205, and ERTH 3806. Lectures, seminars and laboratory five hours a week.

ERTH 4402 [0.5 credit]
Structural Geology
A study of the structural evolution of mountain belts, with emphasis on field methods.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3806. Lectures, seminars and laboratory five hours a week.

ERTH 4403 [0.5 credit]
Tectonic Evolution of Canada
Geologic evolution of Canada focusing on geological styles and tectonic processes of Archean cratons, Proterozoic and Phanerozoic orogenic belts.
Prerequisite(s): ERTH 3806. Lectures and seminars three hours a week.

ERTH 4504 [0.5 credit]
Advanced Igneous Petrology
Volcanology, petrology, mineralogy and geochemistry of igneous rocks and their tectonic setting. May include one to two weeks of field-based instruction with costs borne by the student.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3003. Field excursions in addition to lectures or seminars three hours per week.

ERTH 4507 [0.5 credit]
Advanced Metamorphic Petrology
Introduction to the quantitative analysis of pressure-temperature-time trajectories and rock-forming processes during metamorphic petrogenesis; may include one or two weeks of field-based instruction, with costs borne by the student.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 2802 and ERTH 3207. Field excursions, lectures, or seminars three hours per week.

ERTH 4707 [0.5 credit]
Engineering Seismology
Prerequisite(s): (MATH 1004 or MATH 1007), (MATH 1104 or MATH 1107), STAT 2507 and ERTH 3405 or permission of the department. Also offered at the graduate level, with different requirements, as ERTH 5707, for which additional credit is precluded. Lectures three hours a week.

ERTH 4801 [0.5 credit]
Physics of the Earth
The physical properties of the solid Earth. Gravitational, magnetic and palaeomagnetic fields; seismology and earthquake occurrence; heat flow and thermal history. Geodynamic processes.
Prerequisite(s): ERTH 3405 and ERTH 3806. Also offered at the graduate level, with different requirements, as ERTH 5701, for which additional credit is precluded. Lectures three hours a week.
ERTH 4803 [0.5 credit]
Radiogenic Isotope Geology
Use of radiogenic isotope systems to understand the differentiation history and evolution of large-scale isotopic reservoirs. Data, models and interpretations behind our present day knowledge and understanding of the Earth's history. Assessment of geochronological results and interpretations.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3003.
Also offered at the graduate level, with different requirements, as ERTH 5609, for which additional credit is precluded.
Lectures, seminars or laboratories three hours per week.

ERTH 4804 [0.5 credit]
Exploration Geophysics
Application of geophysical methods to explore for petroleum and mineral resources, with emphasis on seismic and electromagnetic methods. Case histories illustrate the concepts.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3405.
Lectures and laboratories five hours per week.

ERTH 4807 [0.5 credit]
Field Geology II
Field camp integrating advanced field, theory and experimental data. Assessment is based on reports, seminars, and oral examinations. Part of the cost is borne by the student. Departmental funding assistance is available for only one 4000-level field course per student.
Includes: Experiential Learning Activity
Prerequisite(s): completion of the third-year Earth Sciences course requirements and permission of the Department. A supplementary fee will apply.
Field work off campus.

ERTH 4808 [0.5 credit]
Vertebrate Paleontology Field Camp
Field camp extends the student's vertebrate paleontological knowledge by integrating field, theory, and experimental data. Assessment based on written reports and seminars. Part of the cost is borne by the student. Departmental funding assistance is available for only one 4000-level field course per student.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 3111 or ERTH 3112, and ERTH 3113. A Major CGPA of 8.5 or higher and permission of the department is required at the time of registration.
Field work for two weeks off campus. A supplementary fee will apply.

ERTH 4815 [0.5 credit]
Natural Hazards in Canada
Overview of the main natural hazards (such as floods, landslides, forest fires, earthquakes) and severe weather phenomena (such as ice storms, hail, tornadoes) in the Canadian environment. Risk of catastrophic events and their impact on society and infrastructure.
Prerequisite(s): third-year standing in earth science programs or permission of the department.
Also offered at the graduate level, with different requirements, as ERTH 5215 and IPIS 5505, for which additional credit is precluded.
Lectures three hours a week.

ERTH 4820 [0.5 credit]
Research Methods in Earth Sciences
Research approaches, methodologies and resources in Earth Sciences; analytical methods in Earth Sciences; data acquisition, evaluation and interpretation; principles and strategies of scientific and professional writing; and communication of results.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Earth Sciences programs.
Lectures, seminars, or laboratories three hours a week. May also include visits to other research institutes or workshops with visiting instructors.

ERTH 4908 [1.0 credit]
Honours Thesis
Independent studies. Requires prior written approval of a topic from a supervisor and the course co-ordinator. Oral and written proposal, progress and defence reports are required.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 4909, ERTH 4910.
Prerequisite(s): restricted to B.Sc. Honours and Combined Honours ERTH programs. Major CGPA 8.5 or higher at time of registration for the course.

ERTH 4909 [0.5 credit]
Research in Earth Sciences
Understanding research methods, data interpretation and presentation, through readings, seminars and-or laboratory projects related to a topic selected by the student with approval of a faculty advisor.
Includes: Experiential Learning Activity
Precludes additional credit for ERTH 4908, ERTH 4910.
Prerequisite(s): restricted to B.Sc. Honours and Combined Honours Earth Sciences programs.
ERTH 4910 [1.0 credit]
Honours Thesis in Resource Evaluation
Independent studies: Analysis and interpretation of geological, environmental and/or financial data to determine economic value of a natural resource, and its viability for sustainable development. Requires approval of the supervisor and course coordinator. Oral and written proposal, progress and defense reports are required. Includes: Experiential Learning Activity
Precludes additional credit for ERTH 4908 and ERTH 4909.
Prerequisite(s): Restricted to B.Sc. Honours in Earth Sciences with Concentration in Finance: Resource Valuation. Major CGPA 8.5 or higher at time of registration for the course.

Environmental and Climate Humanities (EACH)

Environmental and Climate Humanities (EACH) Courses

EACH 2000 [0.5 credit]
Introduction to the Environmental and Climate Humanities
An overview of approaches to environmental and climate change issues in the Humanities. Drawing on a range of disciplinary perspectives, students will engage with material depicting climate change and environmental topics, as well as develop research and communication strategies.
Prerequisite(s): second-year standing.
Seminar three hours a week.

EACH 4000 [0.5 credit]
Seminar in the Environmental and Climate Humanities
A capstone seminar designed to refine analytic and research skills related to environmental and climate humanities and to provide students with the opportunity to engage in a research or community engagement project, either individually or in groups. Topics vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): EACH 2000 and third-year standing.
Seminar three hours a week.

Economics (ECON)

Economics (ECON) Courses

ECON 1000 [1.0 credit]
Introduction to Economics
An introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation, and international economic problems.
Precludes additional credit for ECON 1001, ECON 1002, and FYSM 1003.
Lectures three hours a week, discussion groups one hour every two weeks.

ECON 1001 [0.5 credit]
Introduction to Microeconomics
An introduction to the major tools and policy problems of microeconomics. Economic analysis is applied to a variety of contemporary issues such as taxation, pollution, wage determination, poverty, market power, and international trade.
Precludes additional credit for ECON 1000 and FYSM 1003.
Lectures three hours a week, discussion groups one hour every two weeks.

ECON 1002 [0.5 credit]
Introduction to Macroeconomics
An introduction to the major tools and policy problems of macroeconomics. Economic analysis is applied to a variety of contemporary problems such as: saving, investment and interest rates; unemployment; money and inflation; exchange rates; fiscal and monetary policy.
Precludes additional credit for ECON 1000 and FYSM 1003.
Lectures three hours a week, discussion groups one hour every two weeks.

ECON 1401 [0.5 credit]
Elementary Mathematics for Economics I
Also listed as MATH 1401.
Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152.
Prerequisite(s): Ontario Grade-12 U Advanced Functions, or MATH 0005, or equivalent; and ECON 1001 or ECON 1000 or FYSM 1003, which may be taken concurrently with ECON 1401.
Lectures three hours a week, tutorials one hour a week.
ECON 1402 [0.5 credit]
Elementary Mathematics for Economics II
Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model.
Also listed as MATH 1402.
Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1201, BIT 1202, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401 or MATH 1401 with a grade of C- or higher.
Lectures three hours a week, tutorials one hour a week.

ECON 2001 [0.5 credit]
Intermediate Microeconomics for Non-Mathematical Majors
The main topics in microeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their applications. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.I.B., B.Math., or B.Sc. program.
Precludes additional credit for ECON 2002 (no longer offered), ECON 2003 (no longer offered), ECON 2009, ECON 2020, and ECON 2030.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

ECON 2009 [0.5 credit]
Managerial Economics
An economic analysis of managerial decision-making. Elements of production and cost; price and output determination under perfectly and imperfectly competitive market structures; the role of information; topics in business strategy; and the impact of government intervention. Not open to students in any Economics program.
Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2020.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; MATH 1009 (or equivalent) with a grade of C- or higher.
Lectures three hours a week, tutorials one and half hours a week.

ECON 2020 [0.5 credit]
Intermediate Microeconomics I: Producers and Market Structure
Theory of the firm: elements of production and cost; input allocation, pricing, and firm behaviour under perfectly and imperfectly competitive market structures; the role of information; welfare analysis, general equilibrium theory, and the role of government.
Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2009.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 2030 [0.5 credit]
Intermediate Microeconomics II: Consumers and General Equilibrium
Theory of consumer choice and demand; applications to intertemporal choice, labour supply, and/or choice under uncertainty; welfare analysis, general equilibrium theory; externalities and the role of government.
Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), and ECON 2003 (no longer offered).
Prerequisite(s): ECON 2020 with a grade of C- or higher or ECON 2009 with a grade of C+ or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 2101 [0.5 credit]
Intermediate Macroeconomics for Non-Mathematical Majors
The main topics in macroeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their application. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.Math., or B.Sc. program.
Precludes additional credit for ECON 2102 and ECON 2103.
Prerequisite(s): ECON 1002 or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.
ECON 2102 [0.5 credit]
Intermediate Macroeconomics I
An introduction to the macroeconomic modeling of output in the short and long run, and to fixed-price models of the closed and open economy over the business cycle. Policy prescriptions in relation to the business cycle are analysed.
Prerequisites: ECON 1002 or ECON 1000 or FYSM 1003 with a grade of C- or higher, ECON 1401/MATH 1401 (with a grade of C- or higher), and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402. Lectures three hours a week, tutorials one and a half hours a week.

ECON 2103 [0.5 credit]
Intermediate Macroeconomics II
An extension of macroeconomic modeling to the dynamics of wage-price adjustment in the intermediate and long run, to the theoretical foundations of basic macroeconomic relationships, and to contemporary policy issues arising in relation to the business cycle and long-run growth.
Prerequisites: ECON 2102 with a grade of C- or higher, ECON 1001 with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher. Lectures three hours a week, tutorials one and a half hours a week.

ECON 2210 [0.5 credit]
Introductory Statistics for Economics
Basic statistical methods for the study of economics. Topics include descriptive statistics, elementary probability theory, sampling distributions, estimation and hypothesis testing for one and two population parameters.
Prerequisites: BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2200 (no longer offered), ECON 2201 (no longer offered), STAT 2507, STAT 2606, and STAT 3502. Prerequisites: ECON 1401/MATH 1401 (with a grade of C- or higher), and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402. Lectures three hours a week, tutorials one and a half hours a week.

ECON 2220 [0.5 credit]
Introductory Econometrics
Topics include correlation, simple and multiple linear regression, and an introduction to statistical computing using an econometrics package. Emphasis on understanding appropriate methods and their properties, as distinct from their formal theoretical development. Empirical applications.
Prerequisites: ECON 2200 (no longer offered), ECON 2202 (no longer offered), STAT 2509, and STAT 2607. Prerequisite(s): ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher. Lectures three hours a week, tutorials one and a half hours a week.

ECON 2708 [0.5 credit]
Applied Data Analysis
An introduction to concepts and tools for using various forms of data to study applied economic problems. Topics may include identifying relevant datasets, collecting and cleaning both research-ready and user-assembled data sets, data visualization, and summary statistics.
Includes: Experiential Learning Activity
Prerequisites: COMP 1005 with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher. Lectures three hours a week, tutorial 1.5 hours a week.

ECON 3001 [0.5 credit]
Mathematical Methods of Economics
Constrained optimization via Lagrange and Kuhn-Tucker conditions; implicit functions and implicit differentiation; comparative static methods applied to models such as utility maximization and least-cost production; homogeneous functions; concave and convex functions; compounding and exponential functions; economic models involving integration; differential equations.
Prerequisites: ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401 and ECON 1402 (or equivalent) with a grade of C- or higher in each and a combined grade point average in ECON 1401 and ECON 1402 of 6.50 or higher. Lectures three hours a week, tutorials one and a half hours a week.
ECON 3050 [0.5 credit]
Introduction to Financial Economics
The major theories and basic tools used to address modern financial economic issues. Topics may include time value of money, bond and stock valuation, investment criteria, capital budgeting, the risk-return tradeoff, options and option valuation, cost of capital, and the fundamentals of international corporate finance.
Precludes additional credit for BUSI 2503, BUSI 2504, ECON 2504 (no longer offered), BUSI 2505, and ECON 2505 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002 each with a grade of C- or higher, or ECON 1000 or FYSM 1003 with a grade of C- or higher, ECON 1402 (or equivalent) with a grade of C- or higher, and BUSI 1002 or BUSI 1005 with a grade of C- or higher.
Lectures three hours a week.

ECON 3201 [0.5 credit]
Economic Thought and Policy in Canada
An account of the interrelationship between economic theories expounded in Canada and their issue in national policy.
Precludes additional credit for ECON 3404 (no longer offered).
Prerequisite(s): an introductory course in one of the social sciences or Canadian history.
Lectures three hours a week.

ECON 3220 [0.5 credit]
Canadian Economic History
A survey of Canadian economic history from the sixteenth century to the present.
Also listed as HIST 3220.
Precludes additional credit for ECON 2305 or HIST 2305 (no longer offered), ECON 3203 (no longer offered), ECON 3202 or HIST 3203 (no longer offered), and ECON 3207 or HIST 3204 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3300 [0.5 credit]
Public Policy Toward Business
The interaction of government and business in the Canadian economy. Reasons for government involvement in selected public policy areas. Topics covered may include competition policy, regulation of firms by boards and commissions, environmental regulation, and public enterprise.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3360 [0.5 credit]
Introduction to Labour Economics
Basic principles of labour economics including market, institutional, and sociological forces. Technology and labour demand, wage systems, human capital, internal wage structure, market discrimination, female labour-force entry, wage-price spiral, household labour supply, and wage determination.
Precludes additional credit for ECON 3506 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4305 (no longer offered) or ECON 4306 (no longer offered) or ECON 4360.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3365 [0.5 credit]
Introduction to Industrial Relations
An introduction to industrial relations covering such topics as: industrial relations systems, the functioning of trade unions, collective bargaining in Canada, and Canadian public policy in industrial relations.
Precludes additional credit for BUSI 3107 (no longer offered) and ECON 3507 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4365 or ECON 4605 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3370 [0.5 credit]
The Economics of Migration
An introduction to the economic aspects of migration. Topics include, among others: the economics of migration within countries; the economics of host country integration of immigrants; the impact of immigration on outcomes in the host country; the impacts of emigration on the home country.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.
ECON 3380 [0.5 credit]
The Economics of Gender and Ethnicity
The impact of gender and ethnicity on labour-market outcomes. Topics may include: employment, work, earnings, and poverty; discrimination and policy responses; immigration; the economics of the household; gender and development; micro-credit; labour standards. Precludes additional credit for ECON 3100 (no longer offered) and ECON 3810 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3403 [0.5 credit]
Introduction to Public Economics: Expenditures
The role and nature of the government sector in the economy, the theory of public goods, the equity and efficiency effects of public expenditures, voting rules and fiscal politics, techniques of public expenditure analysis, and intergovernmental fiscal relations. Precludes additional credit for ECON 3003 (no longer offered) and ECON 3408 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4402 (no longer offered) or ECON 4403.
Prerequisite(s): ECON 1001 and ECON 1002 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3405 [0.5 credit]
Introduction to Public Economics: Taxation
The role and nature of the government sector in the economy, principles of taxation, tax equity, incidence and excess burden of taxes, structure of taxes in the economy, role of personal, corporate, sales and wealth taxes, fiscal stabilization policy, and the economics of public debt. Precludes additional credit for ECON 3003 (no longer offered) and ECON 3407 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4401 (no longer offered) or ECON 4404.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3420 [0.5 credit]
Economic Theories of Federalism
Economic dimensions of federalism, with reference to Canadian experience. Issues include: fiscal federalism; impact of federal economic policies on provincial economies; decentralization possibilities for fiscal and economic development policies; and consequences of policies such as provincial trade barriers and impediments to factor flows. Precludes additional credit for ECON 3206 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3450 [0.5 credit]
Political Economy in the Modern State
An examination of the role of government in the economy, with emphasis on alternate forms of social coordination and the advantages and disadvantages of each form in the Canadian system. Precludes additional credit for ECON 3305 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3460 [0.5 credit]
Introduction to Health Economics
Health as an economic good: demand and need; supply and cost. Public health and personal health care. Alternative health-care delivery systems: financing, performance, quality, and cost effectiveness. Preclusion: credit will not be given if taken concurrently with or after ECON 4460.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3508 [0.5 credit]
Introduction to Economic Development
A discussion of the principles of economic development. Application to the problems of the developing countries. Precludes additional credit for ECON 3603 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4507.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3509 [0.5 credit]
Development Planning and Project Evaluation
An introduction to the tools used in the planning and evaluation of development projects. Topics include the theory, application, strengths and limitations of cost-benefit analysis and competing approaches, and an examination of project evaluation techniques. Precludes additional credit for ECON 3604 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3510 [0.5 credit]
African Economic Development
Domestic and international aspects of development problems and policies in the African context. Topics may include human resource development, growth and poverty reduction, domestic resource mobilization, the implications of ethnic diversity, governance, and institutions, and issues of trade, investment, aid, migration, and health.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.
ECON 3600 [0.5 credit]
Introduction to International Economics
A discussion of theory and policy in international trade and finance. Intended for students planning to take only 0.5 credit in international economics at the 3000-level. Precludes additional credit for ECON 3601 and ECON 3602. Credit will not be given if taken concurrently with or after ECON 4601 or ECON 4602.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

ECON 3601 [0.5 credit]
Introduction to International Trade
An extension of the basic principles of economics to international trade. Topics covered include the theory of international specialization, tariffs and other barriers to trade, trade liberalization and economic integration, international movements of labour and capital, trade and development. Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4601.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3602 [0.5 credit]
International Monetary Problems
A discussion of the theory and institutions of the international monetary system, and the related balance of payments problems of nation states. Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4602.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3607 [0.5 credit]
Monetary and Financial Institutions
The behaviour of financial intermediaries and institutions such as the Bank of Canada, banks and trust companies, and regulatory bodies such as the Canada Deposit Insurance Corporation and the Superintendent of Financial Institutions. Prequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3706 [0.5 credit]
Applied Econometrics
Introduction to applied econometric methods with emphasis on the use of the regression model for empirical research. Real-world examples are used extensively to illustrate key concepts. Hands-on computer exercises are an integral part of the course. Includes: Experiential Learning Activity
Precludes additional credit for ECON 4706.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 3801 [0.5 credit]
Regional Economics
Unequal distribution of economic activity between spatially defined regions. The pattern in Canada since World War II and the outlook for the future is evaluated, considering "natural" adjustment mechanisms and policy tools. Precludes additional credit for ECON 3401 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1000, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3803 [0.5 credit]
The Economics of Natural Resources
The application of economic analysis to questions concerning natural-resource use, management and conservation, as well as market failures and environmental effects. Policy problems relating to natural resources are discussed. Precludes additional credit for ECON 3805 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3804 [0.5 credit]
Environmental Economics
Microeconomic analysis of environmental issues. Frameworks for measuring environmental costs and benefits. The efficiency of alternative pollution control policies. Applications include air and water pollution and global environmental problems such as ozone depletion and global warming. Precludes additional credit for ECON 3806 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.
ECON 3807 [0.5 credit]
European Economic Integration
A discussion of the theories of free trade areas and customs, monetary, and economic unions, and the related historical experience of Europe. Topics include: currency area and the euro, coordination of fiscal policy and the EU budget, common agricultural policy, labour mobility, and regional policy.
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3808 [0.5 credit]
The Economics of Transition
The transition from state ownership and central planning to mixed ownership structure with resource allocation by market mechanisms. "Classical socialism" is criticized and the processes of transition in countries of Central and Eastern Europe, the former Soviet Union, and Asia are compared.
Precludes additional credit for ECON 3700 (no longer offered), ECON 3701 (no longer offered), and ECON 3702 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3820 [0.5 credit]
Topics in Canadian Economic Policy
Economic analysis applied to selected policy areas, issues or institutions. One or more of the following topics may be dealt with: decision-making by bureaucratic institutions, policy problems arising from poverty, the economics of natural resources and pollution, urban economics.
Precludes additional credit for ECON 3800 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3840 [0.5 credit]
An Economic Analysis of Law
An introduction to the application of economic principles and methodology to a variety of legal problems with emphasis on the theory of property rights and the allocation of resources.
Precludes additional credit for ECON 3204 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3850 [0.5 credit]
Economics of Information and the Media
An introduction to the economics of information and the media, with a focus on the analysis of production and distribution of information, the application of theory to selected communications-media industries in Canada, and the analysis of existing Canadian policies.
Precludes additional credit for ECON 3200 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4205 (no longer offered) or ECON 4850.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3856 [0.5 credit]
Housing Economics
Examination of housing markets, housing finance, and government housing policy using the tools of microeconomics. Models of demand, supply, and market equilibrium emphasizing the special characteristics of housing, including heterogeneity, durability, and spatial fixity. Relationships to other goods and markets and the wider macroeconomy.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3860 [0.5 credit]
Agricultural Economics
An examination of the agricultural industry in the national economy and in low-income societies, with emphasis on the working out of the basic forces that determine supply and demand for the industry, and the functional distribution of income among the factors of production.
Precludes additional credit for ECON 3406 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3864 [0.5 credit]
Transportation Economics
Factors affecting demand for and supply of transportation services; demand elasticities and cost structures of various modes of transport; transportation service pricing. Topics may include transport demand forecasting, transportation investment and project appraisal, and the role of transport in economic development.
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.
ECON 3870 [0.5 credit]
Comparative Economic Systems
Analysis of the structure, institutions, and performance of alternative economic systems, including capitalism, socialism, and communism. Selected countries are studied as examples of these systems.
Precludes additional credit for ECON 4806 (no longer offered) and ECON 4807 (no longer offered).
Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.
Lectures three hours a week.

ECON 3878 [0.5 credit]
Contemporary Economic Issues
Content may vary from year to year and is announced in advance of the registration period.
Lectures and/or seminars three hours a week.

ECON 3880 [0.5 credit]
Special Studies in Economics
Content may vary from year to year and is announced in advance of the registration period.
Precludes additional credit for ECON 3402 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.
Lectures and/or seminars three hours a week.

ECON 3900 [0.5 credit]
Research Methods in Economics
The process of doing basic research in economics: development of the research proposal, finding and critically evaluating relevant literature, model development, methods for locating and collecting economic data, analytical methods, and writing mechanics. This course has a strong practical focus.
Includes: Experiential Learning Activity
Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.
Seminars three hours a week.

ECON 3920 [0.5 credit]
Professional Practice of Economics
Development of skills used by professional economists, including writing professional documents such as policy briefs and memos, data visualization, communication of economic ideas in non-technical terms, presentation skills, and team-based problem solving.
Includes: Experiential Learning Activity
Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.
Seminars three hours a week.

ECON 3999 [0.0 credit]
Co-operative Work Term
Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Honours Economics or Applied Economics Co-operative Education option, satisfactory completion of the Co-op preparation classes offered by the Co-operative Education Office, and permission of the Department.

ECON 4001 [0.5 credit]
Mathematical Analysis in Economics
Analysis and algebra: set theory, sequences and series, quadratic forms, separation and fixed-point theorems. Static optimization: the Weierstrass, Lagrange, and Kuhn-Tucker theorems; convexity and quasi-convexity; the envelope theorem. Dynamic optimization: the Maximum Principle and Bellman's equation. Applications of these tools to economic theory.
Prerequisite(s): ECON 3001 with a grade of C+ or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4002 [0.5 credit]
Statistical Analysis in Economics
Probability: including conditional probability, random variables and distributions, unconditional and conditional expectations. Distributions: including special distributions and their properties, and sampling distributions of estimators. Nonparametric methods and limit theorems; stochastic processes; simulation and bootstrap methods. Applications of these tools to economic theory.
Precludes additional credit for STAT 3500 (no longer offered), STAT 3508, and STAT 3558.
Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4004 [0.5 credit]
Operations Research I
Linear programming, duality, sensitivity analysis, transportation and network problems. Both theory and a wide range of applications are studied.
Precludes additional credit for BUSI 2300 (no longer offered), MATH 3801, and SYSC 3200.
Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4005 [0.5 credit]
Operations Research II
Dynamic programming, inventory models, queuing, simulation, and non-linear programming.
Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher, and ECON 2210 (or equivalent) or STAT 2605 or STAT 3502 with a grade of C- or higher.
Lectures three hours a week.
ECON 4020 [0.5 credit]
Advanced Microeconomic Theory
Advanced theory of individual economic behaviour in production, consumption, and general equilibrium. Elementary tools of mathematics are employed in the exposition of most topics. Precludes additional credit for ECON 4200 (no longer offered).
Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4020.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4021 [0.5 credit]
Advanced Macroeconomic Theory
An introduction to advanced macroeconomic models. Topics may include analysis of business cycles, inflation, unemployment, economic growth, fiscal and monetary policy, consumption decisions of households, and investment decisions of firms. Precludes additional credit for ECON 4201 (no longer offered).
Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4021.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4025 [0.5 credit]
Game Theory and Economics
Analysis of strategic behaviour using methods of modern game theory. Topics include extensive-form and strategic-form representation of games, and solution concepts for games of complete and incomplete information such as Nash equilibrium, subgame perfect equilibrium, and perfect Bayesian equilibrium. Economic applications will be presented.
Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher or ECON 2002 (no longer offered) and ECON 2003 (no longer offered) each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2210 (or equivalent, or STAT 2507 or STAT 2606 or STAT 3502), which may be taken concurrently with ECON 4025.
Lectures three hours a week.

ECON 4026 [0.5 credit]
Macroeconomic Dynamics
Dynamic models as applied to topics such as economic growth, business cycles, consumption, investment, inflation, and real-financial linkages. Empirical and/or policy issues may also be discussed. Prequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4026.
Lectures three hours a week.

ECON 4030 [0.5 credit]
Economics of Uncertainty and Information
Uncertainty, imperfect information, and asymmetric information in the allocation of resources and the performance of markets and alternative coordinating mechanisms. Precludes additional credit for ECON 4006 (no longer offered) and ECON 4260 (no longer offered).
Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4051 [0.5 credit]
Financial Asset Pricing
Factors that drive security prices and models that attempt to account for aspects of security returns, including the generic arbitrage pricing model, the capital asset pricing model (CAPM), the consumption CAPM, and the intertemporal CAPM.
Precludes additional credit for BUSI 3500, ECON 3500 (no longer offered), BUSI 3502, ECON 3502 (no longer offered).
Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 3505 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4052 [0.5 credit]
Corporate Financial Economics
Precludes additional credit for BUSI 3500 (or ECON 3500, no longer offered) and BUSI 3502 (or ECON 3502, no longer offered).
Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.
Lectures three hours a week.
ECON 4053 [0.5 credit]  
Financial Market Modeling  
The modeling of the evolution of prices in (near) efficient markets and the evaluation of functions of these prices such as guarantees, options, warrants, futures, and other types of derivatives. Arrow-Debreu state-contingent claims. Notions of complete and incomplete markets. Precludes additional credit for ECON 4100 (no longer offered) and ECON 4504 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 3001 with a grade of C- or higher. Lectures three hours a week.

ECON 4056 [0.5 credit]  
Insurance Economics  
The theory of insurance founded on probability and decision theory. The optimal design of insurance policies from a risk-sharing and an information economics perspective. Principal-agent problems including adverse selection, asymmetric information, and moral hazard with implications for insurance. The interaction between insurance and other markets. Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent) with a grade of C- or higher. Lectures three hours a week.

ECON 4057 [0.5 credit]  
Behavioural Financial Economics  
Market efficiency and the limits of arbitrage. Heuristics and biases identified by behavioural decision theorists and their effect on the behaviour of managers and investors. Behavioural theories of market trading volume and asset prices. Behavioural approaches to corporate financial economics problems. Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 3050 with a grade of C- or higher. Lectures three hours a week.

ECON 4108 [0.5 credit]  
Behavioural Economics  
Major factors underlying economic behaviour, including various views of the role of rationality in economic analyses of individual decision-making and institutional design and a detailed treatment of behavioural heuristics and biases and their implications for nudging techniques that aim to improve economic outcomes. Prerequisite(s): ECON 2030 with a grade of C- or higher. Lectures three hours a week.

ECON 4109 [0.5 credit]  
Experimental Economics  
An introduction to the use of and insights gained from both laboratory- and field-type experimental methods in economic research. Topics include analysis of individual rationality, performance of markets, and design of economic systems. In-class experiments are an integral part of the course. Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 with a grade of C- or higher. Lectures three hours a week.

ECON 4109 [0.5 credit]  
Selected Topics in the History of Economic Thought  
The development of economic thought through time in relation to selected economic problems. Precludes additional credit for ECON 4105 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher, and ECON 2103 with a grade of C+ or higher. Also offered at the graduate level, with different requirements, as ECON 5209, for which additional credit is precluded. Lectures and/or seminars three hours a week.

ECON 4230 [0.5 credit]  
Economic History  
The application of economic theory and quantitative techniques to selected topics in economic history, which may include historical patterns of growth and welfare, nineteenth-century globalization, technological change, the development of agriculture, industrialization, the Great Depression, and the origins of central banks. Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher. Also offered at the graduate level, with different requirements, as ECON 5230, for which additional credit is precluded. Lectures three hours a week.

ECON 4301 [0.5 credit]  
Market Structure and Firm Behaviour  
Various theoretical and empirical studies of firm and market organization with emphasis on the pricing, advertising, investment and locational behaviour of firms in imperfectly competitive markets. Precludes additional credit for ECON 4300 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.

ECON 4302 [0.5 credit]  
Competition and Regulatory Policy  
Public policies relating to competition and regulation. Topics may include: Ramsey pricing, peak-load pricing, cross-subsidization, access pricing (ECPR), multi-part pricing and price discrimination, predatory and targeted pricing, vertical restrictions, traditional regulation (including rate-of-return regulation), incentive regulation (including price caps), and the political economy of regulation. Precludes additional credit for ECON 4300 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.
ECON 4309 [0.5 credit]
Applied Industrial Economics
The empirical application of microeconomics, with special emphasis on the Canadian economy. Topics include: consumer demand, firm production and investment, and industrial and trade structure. Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher. Lectures three hours a week.

ECON 4360 [0.5 credit]
Labour Economics
The application of price theory to the labour market. Topics include models of labour supply and demand, human capital and the economics of education, and unions and their impact on the labour market. Precludes additional credit for ECON 4305 (no longer offered) and ECON 4306 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher. Lectures three hours a week.

ECON 4365 [0.5 credit]
Industrial Relations
Economic analysis of selected industrial relations and labour market policy problems. Topics include unionization, strike activity, the economics of occupational health and safety, pension policy, and the impact of new technology on the labour market. Precludes additional credit for ECON 4605 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.

ECON 4403 [0.5 credit]
Public Economics: Expenditures
A discussion of the theory of government expenditures and an examination of empirical attempts to quantify the theory. Examination of current topics such as expenditures and grants in the Canadian federation. Precludes additional credit for ECON 4402 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.

ECON 4404 [0.5 credit]
Public Economics: Taxation
A discussion of the theory of taxation and an examination of empirical attempts to quantify the theory. Some topics of current interest, such as the redistribution of income in Canada and tax reform, are examined. Precludes additional credit for ECON 4401 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.

ECON 4407 [0.5 credit]
Project Evaluation
Techniques and problems in the evaluation of public and private projects. Examination of alternative approaches to public decision-making including cost-benefit analysis, cost-effectiveness analysis, and multiple-objective frameworks. Case studies of projects in various areas such as natural resources, the environment, human resources, public services, and transportation. Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher. Lectures three hours a week.

ECON 4460 [0.5 credit]
Health Economics
Economic analysis of the organization, financing, and utilization of health-care services. Topics include supply and demand of health care, the impact of private and social health insurance on demand, and policy issues in the provision of health care in Canada. Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher. Lectures three hours a week.

ECON 4507 [0.5 credit]
The Economics of Development
An examination of some theoretical approaches to the economics of development, together with analysis of some economic policy issues of a largely internal character, such as intersectoral investment allocation, income distribution, unemployment, and investment in human development. Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher. Lectures three hours a week.

ECON 4508 [0.5 credit]
International Aspects of Economic Development
An analysis of the international economic policy problems of development in Asia, Africa and Latin America, focusing on international trade, direct foreign investment, technological transfer, regional integration, debt and development financing, and international migration. Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher. Lectures three hours a week.
ECON 4601 [0.5 credit]
International Trade Theory and Policy
International trade theory and its implications for economic policy. Topics such as determinants of trade and specialization, gains from trade and commercial policy, international factor mobility, growth and development.
Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.
Lectures three hours a week.

ECON 4602 [0.5 credit]
International Monetary Theory and Policy
International monetary theory and its implications for economic policy. Topics such as sources of disequilibrium and adjustment in the balance of payments under fixed versus flexible exchange rates, international capital movements, and international monetary reform.
Prerequisite(s): ECON 2103 with a grade of C- or higher. Lectures three hours a week.

ECON 4670 [0.5 credit]
Monetary Theory and Policy
The role of money and the monetary system in determining income, employment, and price level; techniques of monetary policy; the relationship between monetary and fiscal policy.
Precludes additional credit for ECON 4607 (no longer offered) and ECON 4608 (no longer offered).
Prerequisite(s): ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4700 [0.5 credit]
Measurement Economics
National accounting and index numbers. Topics may include: the measurement of output and income, capital and depreciation, productivity, employment and unemployment, poverty and inequality, household production, pollution and resource depletion, and the balance of payments; price indexes; standard-of-living indexes; and international comparisons.
Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4706 [0.5 credit]
Econometrics I
An introduction to econometric theory and analysis of the classical normal linear regression model. Topics include estimation methods, hypothesis testing, multicollinearity, indicator variables, heteroscedasticity, and an introduction to time-series methods.
Precludes additional credit for ECON 3706.
Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.
Lectures three hours a week, tutorials one and a half hours a week.

ECON 4707 [0.5 credit]
Econometrics II
An extension of ECON 4706. Topics include model specification, diagnostic checks, qualitative and limited dependent variables, panel data, and simultaneous equations models.
Prerequisite(s): ECON 4706 with a grade of C+ or higher, or STAT 3503 with a grade of C+ or higher.
Lectures three hours a week.

ECON 4708 [0.5 credit]
Economic Data Science - Analytics
An introduction to methods of statistical and machine learning analytics for economic analysis. Tools relevant for both small and large data sets will be covered. Topics may include approaches to classification, dimension reduction strategies, and prediction models and tools.
Includes: Experiential Learning Activity
Prerequisite(s): ECON 2708 with a grade of C+ or higher; and ECON 4706 (or equivalent) with a grade of C+ or higher.
Lectures three hours a week.

ECON 4709 [0.5 credit]
Economic Data Science - Applications
Application of data science and machine learning methods to real-world economic problems. Students will apply their data science knowledge in hands-on projects to answer topical research questions. This course has a strong practical focus.
Includes: Experiential Learning Activity
Prerequisite(s): ECON 4708 with a grade of C+ or higher. Lectures three hours a week.

ECON 4713 [0.5 credit]
Time-Series Econometrics
An introduction to the basic concepts and tools of time-series econometrics. Topics include stationary and non-stationary time series, identification, estimation and forecasting, unit root testing, cointegration analysis, error-correction models and ARCH models, together with relevant economic applications.
Precludes additional credit for ECON 4803 (no longer offered) and STAT 4603.
Prerequisite(s): ECON 4706 with a grade of C- or higher, or STAT 3503 with a grade of C- or higher.
Lectures three hours a week.

ECON 4714 [0.5 credit]
Advanced Topics in Applied Econometrics
Advanced coverage of one or more areas of current interest in applied econometrics. An empirical research project may be required.
Includes: Experiential Learning Activity
Precludes additional credit for ECON 4804 (no longer offered).
Prerequisite(s): ECON 4706 with a grade of C+ or higher; and ECON 4707, which may be taken concurrently with ECON 4714.
Lectures three hours a week.
ECON 4800 [0.5 credit]
Spatial Economics
Spatial dimensions of economic activity and organization. Theories of urban agglomeration effects, transport costs, forward and backward linkages, and associated spatial dynamics; empirical analysis of spatial economic clusters; effects of globalization and economic growth on the spatial structure of production and the associated policy response.
Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.
Lectures three hours a week.

ECON 4850 [0.5 credit]
Advanced Economics of Information and Media
The economics of information production, its distribution through broadcasting, publishing or the Internet, its exchange through telephone and e-mail networks, and its use in private and public organizations. An analysis of telecommunications, broadcasting, copyright, privacy, and Internet policy.
Precludes additional credit for ECON 4205 (no longer offered).
Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.
Lectures three hours a week.

ECON 4880 [0.5 credit]
Special Topics in Economics
Selected advanced topics of interest to upper-year Honours Economics and Applied Economics students. Topics may vary from year to year and are announced in advance of the registration period.
Includes: Experiential Learning Activity
Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher; and ECON 3706 or ECON 4706, which may be taken concurrently with ECON 4880 or may be waived by permission of the Department.
Lectures and/or seminars three hours a week.

ECON 4903 [0.5 credit]
Tutorial in Economics
An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 (no longer offered) or ECON 4901 (no longer offered) or ECON 4902 (no longer offered) or ECON 4905.
Prerequisite(s): permission of the Department.

ECON 4904 [0.5 credit]
Tutorial in Economics
An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 (no longer offered) or ECON 4901 (no longer offered) or ECON 4902 (no longer offered) or ECON 4905.
Prerequisite(s): permission of the Department.

ECON 4905 [0.5 credit]
Honours Capstone Seminar
The development of individual research projects in suitable economics topic areas with the exchange of results at each stage through in-class discussions and written and oral reports and culminating in a major research paper by each course registrant.
Includes: Experiential Learning Activity
Precludes additional credit for ECON 4890, ECON 4900 (no longer offered), ECON 4901, and ECON 4902.
Prerequisite(s): ECON 3900 with a grade of C+ or higher, ECON 3920 with a grade of C+ or higher, and registration in an Honours Economics program.
Seminars three hours a week.

ECON 4908 [1.0 credit]
Honours Essay
Students taking Honours in Economics or Applied Economics may write an Honours essay during their final year. This essay counts for one credit. Students work under an individual faculty adviser.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Department.

ECON 4990 [0.5 credit]
Research and Writing in Economics
Development of fundamental research and writing skills pertinent to the discipline of economics. Writing summary reviews of economics texts of increasing sophistication; writing up empirical and/or theoretical results of increasing complexity.
Prerequisite(s): registration in the Post-Baccalaureate Diploma in Economics program and/or permission of the Department.
Seminars three hours a week, tutorials one and a half hours a week.

Electronics (ELEC)

Electronics (ELEC) Courses

ELEC 1908 [0.5 credit]
First Year Project
A practical introduction to engineering design. Students work in small teams to specify, design and implement a system, formally managing the project progress and submitting oral and written reports. Professionalism: engineering ethics; health and safety. Technology, society and the environment.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Engineering Physics program.
Lectures and tutorials three hours a week, laboratory four hours a week.
ELEC 2501 [0.5 credit]
Circuits and Signals
Includes: Experiential Learning Activity
Precludes additional credit for ELEC 3605.
Prerequisite(s): MATH 1005 (may be taken concurrently) and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2507 [0.5 credit]
Electronics I
Qualitative semiconductor physics, leading to the diode equation. Diode applications. Operational amplifiers and their application in feedback configurations including active filters. Introduction to bipolar transistors and MOSFETs, analysis of biasing circuits. Transistor applications including small signal amplifiers.
Includes: Experiential Learning Activity
Precludes additional credit for OSS 2006, PLT 2006 (no longer offered).
Prerequisite(s): MATH 1005, ELEC 2501, and second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2602 [0.5 credit]
Electric Machines and Power
Modeling and analysis of basic electric power systems. Single-phase and three-phase circuits: real and reactive power, per-phase analysis, power factor correction. Electro-mechanical energy conversion: operation, characteristics and analysis of transformers, DC-, induction-, and synchronous electric machines. Motor and generator operation.
Includes: Experiential Learning Activity
Prerequisite(s): PHYS 1004 and ELEC 2501, and second-year status in Engineering.
Lectures 3 hours per week. Laboratory and problem analysis 3 hours per week alternate weeks.

ELEC 2607 [0.5 credit]
Switching Circuits
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2310.
Prerequisite(s): PHYS 1004 or PHYS 1002 and second-year status in Engineering.
Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 3105 [0.5 credit]
Electromagnetic Fields
Includes: Experiential Learning Activity
Prequisite(s): MATH 1005, MATH 2004, and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 3500 [0.5 credit]
Digital Electronics
Digital circuit design using verilog and logic synthesis, the electronic properties of logic gates, electrical interfacing between logic families, asynchronous to synchronous interfacing, clock distribution and timing, VLSI design options. Students implement substantial circuits with field-programmable gate arrays.
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2507 and ELEC 2607.
Lectures three hours a week, laboratory three hours a week.

ELEC 3508 [0.5 credit]
Power Electronics
Power semiconductor devices: Thyristor, GTO, IGBT, SiC, GaN. Converter circuits: controlled AC to DC rectifiers, choppers, DC to AC inverter, AC voltage controllers. Protection of conversion circuits. Applications to high-efficiency control of electric machines and electromechanical energy conversion devices.
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2507 and ELEC 2602.
Lectures three hours per week, laboratories/problem analysis three hours per week.
ELEC 3509 [0.5 credit]
Electronics II
Introduction to semiconductor devices and ICs. DC, AC and switching properties of BJTs. Linear amplifiers; bandwidth considerations; two-port analysis. Large signal amplifiers; power amplifiers; transformerless circuits. Feedback and operational amplifiers; gain, sensitivity, distortion and stability. Filter design. Oscillators.
Includes: Experiential Learning Activity
Precludes additional credit for: ELEC 3509 may not be taken for credit by students in the Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering programs.
Prerequisite(s): ELEC 2507.
Lectures three hours a week, laboratory three hours a week.

ELEC 3605 [0.5 credit]
Electrical Engineering
Precludes additional credit for ELEC 2501.
Prerequisite(s): MATH 1005 and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.
Lectures three hours a week, problem analysis 1.5 hours a week.

ELEC 3907 [0.5 credit]
Engineering Project
Student teams work on open-ended projects based on previously acquired knowledge. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, a series of project reports, and oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 2607, ELEC 2507, and ((ECOR 1051, ECOR 1052, ECOR 1053 and ECOR 1054) or (ECOR 2606)), and enrolment in the Electrical Engineering program.
Lecture two hours per week, laboratory six hours per week.

ELEC 3908 [0.5 credit]
Physical Electronics
Fundamentals of device physics and operation of the pn junction, bipolar transistor and MOSFET. Basic integrated circuit processing and application to diodes, BJTs and MOSFETs. Correlation between processing, structure, operation and modeling. Consideration of parasitic and small-geometry effects, reliability and process variation.
Includes: Experiential Learning Activity
Precludes additional credit for ELEC 4705.
Prerequisite(s): ELEC 2507.
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 3909 [0.5 credit]
Electromagnetic Waves
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 3308.
Prerequisite(s): ELEC 3105 or permission of the Department.
Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ELEC 4502 [0.5 credit]
Microwave Circuits
Introduction to microwave semiconductor devices, microwave passive components, microwave integrated circuit technology, and microwave circuit measurements. Basic network theory and scattering matrix description of circuits. Design of matching networks, filters, amplifiers and oscillators at microwave frequencies.
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 4503; may be taken concurrently.
Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4503 [0.5 credit]
Radio Frequency Lines and Antennas
Introduction to distributed circuits, travelling and standing waves, reflection coefficient, SWR, impedance transformation, Smith charts. Introduction to transmission lines; coaxial, rectangular waveguide, resonators, optical fibers. Introduction to antennas; gain, directivity, effective area. Introduction to linear arrays.
Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3909.
Lectures three hours a week, laboratory three hours alternate weeks.
ELEC 4504 [0.5 credit]  
Avionics Systems  
Prerequisite(s): fourth-year status in Engineering. Not open to students in Electrical Engineering, Computer Systems Engineering, Engineering Physics or Communications Engineering.  
Lecture three hours a week.

ELEC 4505 [0.5 credit]  
Telecommunication Circuits  
A course of study of the commonly used circuit components in modern telecommunication systems. Both analog and digital systems are included. The design of the hardware is emphasized. Examples are drawn from broadcasting, telephony and satellite systems. Includes: Experiential Learning Activity  
Prerequisite(s): ELEC 3509 and (SYSC 3501 or SYSC 3503).  
Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4506 [0.5 credit]  
Computer-Aided Design of Circuits and Systems  
Prerequisite(s): fourth-year status in Engineering.  
Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4509 [0.5 credit]  
Communication Links  
Fundamentals; decibel, intermodulation, 1dB compression, dynamic range, SNR, noise figure, noise temperature, antenna gain, EIRP, G/T. Line-of-sight links; receiver, diversity, fade margin. Satellite links; link calculations, multiple accessing, earth stations. Fiber links, fiber types, sources, detectors, systems.  
Prerequisite(s): fourth-year status in Engineering or permission of the Department.  
Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 4600 [0.5 credit]  
Radar and Navigation  
Prerequisite(s): fourth-year status in Engineering or permission of the Department.  
Lectures three hours a week, problem analysis 3 hours alternate weeks.

ELEC 4601 [0.5 credit]  
Microprocessor Systems  
Interfacing aspects in microprocessor systems. Microprocessors and bus structures, internal architecture, instruction set and pin functions. Memory interfacing, input/output, interrupts, direct memory accesses, special processors and multiprocessor systems. Includes: Experiential Learning Activity  
Precludes additional credit for COMP 3006 (no longer offered), SYSC 3320, SYSC 3601.  
Prerequisite(s): ELEC 2607 and one of SYSC 2003 or SYSC 3003 (no longer offered) or SYSC 3006 or permission of the Department.  
Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4602 [0.5 credit]  
Electrical Power Systems  
Prerequisite(s): ELEC 2602 or ELEC 3605.  
Lectures three hours a week, problem analysis two hours a week.

ELEC 4609 [0.5 credit]  
Integrated Circuit Design and Fabrication  
Introduction to nMOS IC design: static logic gates, noise margin, transmission gates, factors influencing switching speed, dynamic logic, input protection, output buffers, circuit simulation with SPICE. Laboratory work includes design and layout of a simple nMOS IC that is fabricated and returned for testing. Includes: Experiential Learning Activity  
Prerequisite(s): ELEC 3500 or ELEC 3908.  
Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.
The Academic Year (Graduate and Undergraduate Studies)

ELEC 4700 [0.5 credit]
The Physics and Modeling of Advanced Devices and Technologies
Fabrication, operation and modeling of advanced devices for information technology. Topics: physics of materials, quantum mechanics of solids, optical transitions, physical analysis and models for state-of-the-art electronic/optical technologies and materials. Technologies: MOS and III-V based transistors, solid-state optical devices, MEMS and nano-technology based devices. Prerequisite(s): ELEC 3908. Lectures three hours a week, problem analysis two hours alternate weeks.

ELEC 4702 [0.5 credit]
Fiber Optic Communications
Fundamentals of optoelectronics with application to fiber optic communications. Optical fibre: modes, losses, dispersion, splices, coupling to sources. Optical sources: LEDs, laser diodes. Optical detectors: photoconductor, pin and avalanche photodiodes. Optical receiver design. Fiber optic communications systems: intensity modulation/direct detection; coherent homodyne or heterodyne detection. Includes: Experiential Learning Activity. Prerequisite(s): ELEC 3908 and ELEC 3909. Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4703 [0.5 credit]
Solar Cells
Semiconductor band structure, photogeneration, the solar spectrum. Detailed analysis of monocrystalline silicon solar cells. Solar cells based on thin film materials: amorphous silicon, III-V materials, organics, titania-dye cells. Cells for concentrator systems. Photovoltaic power systems. Solar cells for building envelopes. Includes: Experiential Learning Activity. Prerequisite(s): ELEC 2501 and ELEC 2507 and fourth-year status in Sustainable and Renewable Energy Engineering, or ELEC 2501 and ELEC 2507 and fourth-year status in Engineering with permission of the instructor. Lectures three hours per week, laboratories/problem analysis three hours alternate weeks.

ELEC 4704 [0.5 credit]
Nanoscale Technology and Devices

ELEC 4705 [0.5 credit]
Electronic Materials, Devices and Transmission Media
Review of solid-state theory, conductors, semiconductors, superconductors, insulators, and optical and magnetic properties. Devices used in modern high-speed electronic and communication systems: transistors, lasers, photodiodes, fiber optics, Josephson junctions. Implications of material properties on fabrication and operation of devices and circuits. Precludes additional credit for ELEC 3908. Prerequisite(s): fourth-year status in Engineering. Not available for credit to students in Electrical Engineering or Engineering Physics. Lectures three hours a week.

ELEC 4706 [0.5 credit]
High-Speed Electronics: Circuits and Systems
Challenges faced in designing high-speed electronic circuits and systems. Fundamentals of high-speed Tx/Rx architectures including: timing and HDL, PLL/DLL, Tx drivers, interface to photonic components, channel modelling, Rx channel, choice of modulation, equalization, clock and data recovery. VHDL hardware and CAD software laboratories. Includes: Experiential Learning Activity. Prerequisite(s): ELEC 3500. Lectures three hours a week, laboratory three hours a week.

ELEC 4707 [0.5 credit]
Analog Integrated Electronics
Emphasis on integration of analog signal processing techniques in monolithic IC technology. Continuous active filter design. MOS IC technology. OP amp design. Basic sampled data concepts; Z-transform analysis, switched capacitor filters. Noise aspects. Bipolar technology: radio frequency IC design. Includes: Experiential Learning Activity. Prerequisite(s): ELEC 3509. Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4708 [0.5 credit]
Advanced Digital Integrated Circuit Design
Advanced Verilog, test benches. VLSI design based on CMOS technology, characteristics of CMOS logic circuits, cell libraries, building blocks, structured design, testing, Computer-Aided Design tools. Laboratory emphasis on design synthesis from Verilog. Includes: Experiential Learning Activity. Prerequisite(s): fourth-year status in Engineering and ELEC 3500 or permission of the Department. Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.
ELEC 4709 [0.5 credit]
Integrated Sensors
Overview of sensor technologies with emphasis on devices suitable for integration with silicon integrated circuits. Sensor design and fabrication principles including signal conditioning; discussion of automotive, biomedical, and other instrumentation applications. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Engineering. Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4906 [0.5 credit]
Special Topics
At the discretion of the Engineering Faculty Board, a course dealing with selected advanced topics of interest to students in Biomedical and Electrical, Communications, Computer Systems, Electrical and Software Engineering and Engineering Physics may be offered. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Engineering. Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4907 [1.0 credit]
Engineering Project
Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required. Includes: Experiential Learning Activity
Prerequisite(s): ELEC 3907, ECOR 3800, ECOR 4995 (may be taken concurrently) and fourth-year status in Engineering. Lecture one hour a week, laboratory seven hours a week.

ELEC 4908 [1.0 credit]
Engineering Physics Project
Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project approved for Engineering Physics. Lectures devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and comprehensive final report are required. Includes: Experiential Learning Activity
Prerequisite(s): ECOR 3800, fourth-year status in Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites or corequisites. Lecture one hour a week, laboratory seven hours a week.

Engineering Core (ECOR)

ECOR 1010 [0.5 credit]
Introduction to Engineering
Technology, society and the environment. Graphical design communication: sketching, graphical projections; CAD. Managing data: statistical methods; spreadsheets. Design analysis: matrix programming software; symbolic computer algebra systems. Design process: proposals; reports; presentations; reporting software. Includes: Experiential Learning Activity
Prerequisite(s): ECOR 1000 (no longer offered), ECOR 1047, ECOR 1054. Lectures four hours per week, laboratories two hours per week.

ECOR 1041 [0.25 credit]
Computation and Programming
Software development as an engineering discipline, using a modern programming language. Language syntax and semantics. Tracing and visualizing program execution. Program style and documentation. Testing and debugging tools and techniques. Precludes additional credit for COMP 1005, COMP 1405, ECOR 1051, ECOR 1606, SYSC 1005. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1042 [0.25 credit]
Data Management
Introduction to designing and implementing numerical algorithms. Container data types: sequences, sets, maps. Modules. Data files. Incremental, iterative development of programs. Number systems: binary, decimal. Digital representation of integers and floating point numbers. Precludes additional credit for COMP 1005, COMP 1405, ECOR 1051, ECOR 1606, SYSC 1005. Prerequisite(s): ECOR 1041 with a minimum grade of C- and MATH 1004 (may be taken concurrently). This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1043 [0.25 credit]
Circuits
Electrical Quantities (Voltage, Charge, Current, Power). Conservation of charge and energy. Mathematical models of simple devices. Elementary circuit theory for passive elements. Thévenin’s and superposition theorem. Signal filtering and amplification. Time and frequency domain. Circuit design and simulation. Precludes additional credit for ECOR 1052. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.
ECOR 1044 [0.25 credit]
Mechatronics
Mechatronics applications. Analog to digital signal conversion. Control systems and PID controllers. Input devices, including sensors. Data collection and processing. Output devices, including displays, actuators, and motors. Project design and economics. Environmental Impact of mechatronics engineering. System failures and failsafe design. Precludes additional credit for ECOR 1052. Prerequisite(s): ECOR 1041 with a minimum grade of C- and ECOR 1043 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1045 [0.25 credit]
Statics
Cartesian vector representation of forces. Components of forces. Particle equilibrium and free body diagrams. Moments and cross product. Centre of gravity and centroids. Rigid body equilibrium. Precludes additional credit for ECOR 1053, ECOR 1101. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1046 [0.25 credit]
Mechanics
2D truss analysis (method of joints/sections). Normal stress/strain and shear stress/strain. 2D frames and machines. Internal loads - normal, shear and moment at a point. Shear and moment diagrams. Precludes additional credit for ECOR 1053. Prerequisite(s): ECOR 1045 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1047 [0.25 credit]
Visual Communication
Graphs and sketches, flow charts, block diagrams. Visual presentation, projection and perspectives of objects. 3D sketching. Free hand drawing. Reading engineering drawings and schematics. Introduction to scaling, dimensioning and tolerancing. Introduction to CAD. Precludes additional credit for ECOR 1054, ECOR 1010. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1048 [0.25 credit]
Dynamics
Kinematics and kinetics of a particle. Principle of work and energy. Conservation of energy, conservative forces, potential energy. Principles of impulse and momentum, conservation of momentum for a system of particles. Precludes additional credit for ECOR 1054, ECOR 1101. Prerequisite(s): ECOR 1045 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1051 [0.5 credit]
Fundamentals of Engineering I
Software development as an engineering discipline, using a modern programming language. Tracing and visualization of program execution. Testing and debugging. Data management: digital representation of numbers; numerical algorithms; storing data in files; container data types: sequences, sets, maps. Includes: Experiential Learning Activity Precludes additional credit for COMP 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1606, SYSC 1005. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1052 [0.5 credit]
Fundamentals of Engineering II

ECOR 1053 [0.5 credit]
Fundamentals of Engineering III
Components of forces. Particle equilibrium and free body diagrams. Moments and cross product. Centre of gravity and centroids. Rigid body equilibrium. 2D Truss analysis (method of joints/sections). Normal stress/strain and Shear stress/strain. 2D frames and machines. Includes: Experiential Learning Activity Precludes additional credit for ECOR 1045, ECOR 1046, ECOR 1101. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.
ECOR 1054 [0.5 credit]
Fundamentals of Engineering IV
Precludes additional credit for ECOR 1010, ECOR 1047, ECOR 1048.
Prerequisite(s): ECOR 1053 (may be taken concurrently). Lectures three hours per week, laboratories three hours per week.

ECOR 1055 [0.0 credit]
Introduction to Engineering Disciplines I
Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.
Lectures 1.5 hours per week.

ECOR 1056 [0.0 credit]
Introduction to Engineering Disciplines II
Selected lectures designed to provide students with exposure to the breadth of Engineering disciplines. Online course.

ECOR 1057 [0.0 credit]
Engineering Profession
Online course

ECOR 1101 [0.5 credit]
Mechanics I
Includes: Experiential Learning Activity
Precludes additional credit for ECOR 1045, ECOR 1048, ECOR 1053.
Prerequisite(s): MATH 1004 and MATH 1104.
Lectures three hours a week, tutorials and problem analysis three hours a week.

ECOR 1606 [0.5 credit]
Problem Solving and Computers
Introduction to engineering problem solving. Defining and modeling problems, designing algorithmic solutions, using procedural programming, selection and iteration constructs, functions, arrays, converting algorithms to a program, testing and debugging. Program style, documentation, reliability. Applications to engineering problems; may include numerical methods, sorting and searching.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 1005, SYSC 1100 (no longer offered), SYSC 1102 (no longer offered), COMP 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051.
Lectures three hours a week, laboratory three hours a week.

ECOR 2050 [0.5 credit]
Design and Analysis of Engineering Experiments
Includes: Experiential Learning Activity
Prerequisite(s): 2nd Year Status in Engineering.
Lectures three hours a week, problem analysis and laboratory three hours a week.

ECOR 2606 [0.5 credit]
Numerical Methods
Numerical algorithms and tools for engineering and problem solving. Sources of error and error propagation, solution of systems of linear equations, curve fitting, polynomial interpolation and splines, numerical differentiation and integration, root finding, solution of differential equations. Software tools.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2606 (no longer offered).
Prerequisite(s): MATH 1005 and (ECOR 1606 or SYSC 1005) and (ECOR 1010 or ELEC 1908).
Lectures three hours a week, laboratory one hour a week.

ECOR 2995 [0.0 credit]
Engineering Portfolio
Students will be asked to reflect on their skills, strengths and weaknesses as preparation for the professional practice course. Engineering students must submit samples of their writing and communications (including, for example, laboratory reports and professional memos).
Online
ECOR 3800 [0.5 credit]
Engineering Economics
Introduction to engineering economics; cash flow calculations; methods of comparison of alternatives; structural analysis; replacement analysis; public projects; depreciation and income tax; effects of inflation; sensitivity analysis; break-even analysis; decision making under risk and uncertainty.
Prerequisite(s): third-year status in Engineering or (ECOR 1051, ECOR 1052, ECOR 1053 and ECOR 1054). Lectures three hours a week.

ECOR 4995 [0.5 credit]
Professional Practice
Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and responsibilities, practice within the discipline and its relationship with other disciplines and to society, health and safety, environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized.
Prerequisites additional credit for MAAE 4905, CIVE 4905, SYSC 3905 or ELEC 3905 (all no longer offered). Prerequisite(s): ECOR 2995 and fourth-year status in Engineering. Lectures three hours a week.

English (ENGL)

English (ENGL) Courses
ENGL 1002 [0.5 credit]
Writing and Language I
The first half of an introduction to the principles, styles, and structures of effective writing, including essay writing. Course offered only in Nunavut as part of Certificate in Nunavut Public Service Studies Program. Includes: Experiential Learning Activity
Precludes additional credit for ENGL 1005 (no longer offered). Lectures and workshop three hours a week.

ENGL 1003 [0.5 credit]
Writing and Language II
The second half of an introduction to the principles, styles, and structures of effective writing, including essay writing. Course offered only in Nunavut as part of Certificate in Nunavut Public Service Studies Program. Includes: Experiential Learning Activity
Precludes additional credit for ENGL 1005 (no longer offered). Prerequisite(s): ENGL 1002. Lectures and workshop three hours a week.

ENGL 1008 [0.5 credit]
English Grammar: Fundamentals
A practical and intensive overview of English grammar designed for students who want to improve their understanding of grammar for their own writing and reading. This is not an ESL course. Lectures three hours a week.

ENGL 1009 [0.5 credit]
Literature in Global Context
Introduction to the study of literature from a global perspective. Students will be exposed to writers from various locations and to methods for studying literature across national boundaries. Lecture three hours a week.

ENGL 1010 [0.5 credit]
Writing Essays about Literature
An intensive writing course focusing on the formulation and construction of a literary essay. Precludes additional credit for ENGL 1020. Lectures three hours a week.

ENGL 1020 [0.5 credit]
Effective Writing
The rhetorical principles, skills, and structures necessary for the kind of writing done at the university level. Clear and effective composition as a mode of research, discovery, analysis, and persuasion. Students pursuing the English major or minor should take ENGL 1010 instead of ENGL 1020. Precludes additional credit for ENGL 1010. Lectures three hours a week.

ENGL 1100 [0.5 credit]
Literature, Law, and Criminality
An introductory course whose readings focus on the intersections between literature, law, and criminality. Topics will vary. Consult the English Department website for the current topic. Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004. Lecture three hours a week.

ENGL 1200 [0.5 credit]
Literature, Science, and Technology
An introductory course whose readings focus on the intersections between literature, science, and technology. Topics will vary. Consult the English Department website for the current topic. Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1300, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004. Lectures three hours a week.

ENGL 1300 [0.5 credit]
Literature, Psychology, and the Mind
An introductory course whose readings focus on the intersections between literature, psychology, and the mind. Topics will vary. Consult the English Department website for the current topic. Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004. Lectures three hours a week.
ENGL 1400 [0.5 credit]
Literature, Art, and Culture
An introductory course whose readings focus on the intersections between literature, art, and culture. Topics will vary. Consult the English Department website for the current topic.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1600, ENGL 1700, FYSM 1004.
Lectures three hours a week.

ENGL 1500 [0.5 credit]
Introduction to Creative Writing
An introduction to the practice of creative writing, focusing on poetry, the short story, creative non-fiction, and drama. Emphasis is also placed on contextualizing creative writing as an academic discipline, a mode of self-expression, and a professional industry.
Includes: Experiential Learning Activity
Lectures and workshops three hours a week.

ENGL 1600 [0.5 credit]
Literature and Magic
An introductory course whose readings focus on the intersections between literature and magic. Topics will vary. Consult the English Department website for the current topic.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1700, FYSM 1004.
Lecture three hours a week.

ENGL 1609 [0.5 credit]
Introduction to Drama Studies
An introduction to drama studies, combining attention to theatre history, conventions, and devices, with attention to theatrical practice, and interpretation of selected dramatic texts. Students will develop a vocabulary for speaking and writing with confidence about theatrical productions, theatre practice, and dramatic texts.
Lecture three hours a week.

ENGL 1700 [0.5 credit]
Climate Change and the Humanities
An introduction to literature and culture in the context of the environmental humanities and climate change.
Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, FYSM 1004.
Seminar or lecture three hours a week.

ENGL 2005 [0.5 credit]
Theory and Criticism
An introduction to theories and methods of literary analysis. Through the study of literature, theory, and criticism, students will explore disciplinary history, critical terms, textual analysis, and research methods.
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2008 [1.0 credit]
Myth and Symbol
A literary study of myths and symbols from oral traditions to contemporary forms through selected interdisciplinary and theoretical approaches.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2100 [0.5 credit]
Topics in Popular Culture
Study of a selected topic related to popular culture.
Precludes additional credit for ENGL 2101 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2103 [0.5 credit]
Introduction to the Novel
A historical and critical study of the novel.
Precludes additional credit for ENGL 2003 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2104 [0.5 credit]
Drama Workshop
A course dealing with the rudiments of theatrical performance: voice, movement, improvisation, interpretation. Exercises are based upon examples drawn from classical and contemporary repertoires.
Includes: Experiential Learning Activity
Precludes additional credit for ENGL 2000 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Workshop three hours a week.
ENGL 2105 [0.5 credit]
History of the English Language
A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions. Also listed as LING 2802.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2106 [0.5 credit]
Topics in Popular Fiction
An introduction to the critical study of popular fiction. Topics will vary but may include popular narrative forms such as fantasy, horror, mystery, romance, Young Adult (YA) fiction, etc.
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2107 [0.5 credit]
Science Fiction
A study of the history and traditions of science fiction, speculative fiction, fantasy, and utopia, covering various periods, nationalities, genres, and/or media.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2108 [0.5 credit]
Women and Literature
Representations of women and the construction of femininity in selected literary texts, the position of women as readers and authors, and the impact of feminist criticism on literary analysis.
Precludes additional credit for ENGL 2902 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2109 [0.5 credit]
Gender, Sexuality and Literature
How literature represents, reproduces, and resists cultural notions of gender and sexuality. Topics may include: gender and sexuality in relation to literary history, production, and reception; literature by/about “deviant” or subcultural sexualities and genders.
Precludes additional credit for ENGL 2902 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2200 [0.5 credit]
Creativity, Imagination, and Writing
Creativity, Imagination, and Writing
This course not only surveys theories about the imagination and creativity but also teaches various rhetorical exercises and strategies for sparking inventive thinking and new ideas to fire the writing process. Consult the English Department's website for detailed information.
Prerequisite(s): second-year standing or permission of the department. Students in English may take this course only as a free elective.
Lectures three hours a week.

ENGL 2201 [0.5 credit]
The Pleasures of Reading
This course introduces majors and non-majors to a selection of known and unknown "masterpieces." Texts may be grouped to explore specific themes. Requirements include a variety of assignments but no formal essay.
Consult the English Department's website for detailed information.
Prerequisite(s): second-year standing or permission of the department. Students in English may take this course only as a free elective.
Lectures three hours a week.

ENGL 2202 [0.5 credit]
Weird Fiction
Introduction to a sub-category of speculative fiction that spans from traditional ghost stories and tales of the macabre to the “New Weird”: contemporary writing that overthrows the clichés, conventions, and expectations of fantasy, horror, and science fiction.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2301 [0.5 credit]
Literatures and Cultures 500-1500
A study of the period between 500 and 1500, with attention to cultural, historical, geographical, and literary contexts.
Precludes additional credit for ENGL 2300 (no longer offered).
Prerequisite(s): Second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2302 [0.5 credit]
Literatures and Cultures 1500-1700
A study of the period between 1500 and 1700, with attention to cultural, historical, geographical, and literary contexts.
Precludes additional credit for ENGL 2300 (no longer offered).
Prerequisite(s): Second-year standing or permission of the department.
Lectures three hours a week.
ENGL 2400 [0.5 credit]
Introduction to Digital Humanities
An introduction to the principal debates in and approaches to the Digital Humanities. Also listed as DIGH 2001.
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.

ENGL 2401 [0.5 credit]
Digital Humanities: Theory and Method
A multidisciplinary survey of core theories, methodologies and tools within the Digital Humanities. Assignments will include collaborative work and applied projects. Includes: Experiential Learning Activity Also listed as DIGH 2002.
Prerequisite(s): second-year standing or permission of the department.
Lecture and workshop three hours a week.

ENGL 2500 [0.5 credit]
Classical Mythology
A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth. Also listed as CLCV 2500.
Precludes additional credit for ENGL 2007/CLCV 2000 (no longer offered).
Prerequisite(s): second-year standing or permission of the unit.
Lectures three hours a week.

ENGL 2600 [0.5 credit]
History of World Cinema I
Historical survey of world cinema primarily from 1895 to 1945, examining the forms, structures and stylistic conventions of various periods and nations. Also listed as FILM 2606.
Precludes additional credit for ENGL 2608 (no longer offered) and FILM 2608 (no longer offered).
Prerequisite(s): FILM 1101 or FILM 1120 or a 1000-level English course, and second-year standing, or permission of the discipline.
Lecture and screening three hours a week, lecture one hour a week.

ENGL 2601 [0.5 credit]
History of World Cinema II
Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations. Also listed as FILM 2607.
Precludes additional credit for ENGL 2608 (no longer offered) and FILM 2608 (no longer offered).
Prerequisite(s): ENGL 2600 or FILM 2606 or permission of the department.
Lecture and screening three hours a week, lecture one hour a week.

ENGL 2605 [0.5 credit]
Greek and Roman Drama
An examination of the genres of tragedy and comedy in Greco-Roman antiquity. Also listed as CLCV 2100.
Precludes additional credit for CLCV 2009, ENGL 2009.
Prerequisite(s): second-year standing or permission of the unit.
Lecture three hours a week.

ENGL 2609 [0.5 credit]
Drama: Modes and Movements
A study of dramatic texts and traditions, offering attention to major dramatic modes and movements such as Ritual, Dance, Naturalism, Expressionism, Absurdism, Political Theatre, Feminist Theatre, and Global/Intercultural Theatre. Each will be investigated in the context of performance videos, live performances, and/or written text.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2700 [0.5 credit]
American Literatures I
Introduction to the traditions of American literature through 1865.
Precludes additional credit for ENGL 2702 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2701 [0.5 credit]
American Literatures II
Introduction to the traditions of American literature after 1865.
Precludes additional credit for ENGL 2702 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2709 [0.5 credit]
Indigenous Drama
A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors, and other practitioners.
Also listed as INDG 2709.
Prerequisite(s): second-year standing, or permission of the Department.
Lectures three hours a week.

ENGL 2730 [0.5 credit]
Culture and Climate Change
Selected topics related to climate change and cultural studies.
Prerequisite(s): second-year standing or permission of the department.
Lecture three hours a week.
ENGL 2802 [1.0 credit]
Indigenous and Canadian Literatures
A survey of Canadian literary cultures in English from their beginnings to the present that frames them in the wider context of Indigenous writing and storytelling. This course is writing-attentive.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2900 [0.5 credit]
Literature of the Self
A study of developments in the literary representation of the self. The course considers a wide range of major texts from the Middle Ages to the present.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2901 [0.5 credit]
Writing Poetry
A workshop involving regular assignments in writing poetry and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.
Workshop three hours a week.

ENGL 2903 [0.5 credit]
Writing Fiction
A workshop involving regular assignments in writing prose fiction and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.
Workshop three hours a week.

ENGL 2906 [0.5 credit]
Culture and Society
A study of literature in relation to its social and political contexts. Topics and periods vary.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2908 [0.5 credit]
Celtic Literatures
The literatures of Ireland, Scotland, and/or Wales. Topics will vary in national and historical scope and may be organized by theme, author, and/or genre.
Precludes additional credit for ENGL 2602 and ENGL 2606 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2910 [0.5 credit]
Book Arts Workshop
This experiential learning course immerses students in the practical arts and histories of book production.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing or permission of the department.
Workshop three hours a week.

ENGL 2915 [0.5 credit]
Writing Creative Nonfiction
A workshop involving regular assignments in reading and writing creative nonfiction and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.
Workshop three hours a week.

ENGL 2920 [0.5 credit]
Topics in Decolonization and Migration I
An introduction to the study of literature and culture in the context of topics such as empire and decolonization, diaspora, migration and globalization, race, and ethnicity. Themes, authors, and geographical and temporal focus will vary.
Prerequisite(s): Second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2926 [0.5 credit]
African Literatures I
An introductory survey of modern African literatures, discourses, and cultural production in the first half of the 20th century.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2927 [0.5 credit]
African Literatures II
A survey of modern African literatures, discourses, and cultural production from the era of political independence from colonialism (the 1960s) to the present.
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.

ENGL 2936 [0.5 credit]
South Asian Literatures I
An introductory historical survey of the literatures of South Asia to the early colonial era, starting with the Indian epics and concluding with literary traditions of 18th-century India.
Precludes additional credit for ENGL 2502 (no longer offered).
Prerequisite(s): second-year standing or permission of the department.
Lectures three hours a week.
ENGL 2937 [0.5 credit]  
South Asian Literatures II  
An introductory survey of literatures of South Asia from the colonial and postcolonial eras. Topics include the nationalist movement, neo-colonialism, and post-colonialism. Precludes additional credit for ENGL 2502 (no longer offered). Prerequisite(s): second-year standing or permission of the department. Lectures three hours a week.

ENGL 2956 [0.5 credit]  
Literatures of the Americas I  
Introduction to comparative and transnational approaches to the literatures and oratures of the Caribbean, and North and South America, with emphasis on the pre-colonial and colonial eras. Precludes additional credit for ENGL 2909 (no longer offered). Prerequisite(s): second-year standing or permission of the department. Lectures three hours a week.

ENGL 2957 [0.5 credit]  
Literatures of the Americas II  
Introduction to comparative and transnational approaches to 20th- and 21st-century writing from the Caribbean, and North and South America. Precludes additional credit for ENGL 2909 (no longer offered). Prerequisite(s): second-year standing or permission of the department. Lectures three hours a week.

ENGL 3003 [0.5 credit]  
Literatures in Translation  
A study of non-English literatures in translation with a special focus on cultural and historical contexts. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

ENGL 3007 [0.5 credit]  
Reading Poetry  
This course is designed to enable students to develop skills in reading and writing about poetry. Readings will be chosen from a variety of authors, periods, and/or genres. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

ENGL 3008 [0.5 credit]  
Studies in Greek Literature  
A study of an author or topic in Greek literature. Contents of this course vary from year to year. Also listed as CLCV 3701. Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course. Lecture three hours a week.

ENGL 3009 [0.5 credit]  
Studies in Roman Literature  
A study of an author or topic in Roman literature. Also listed as CLCV 3702. Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course. Lecture three hours a week.

ENGL 3010 [0.5 credit]  
The Secret Lives of Poems  
This course is designed to enable students to develop skills in reading and writing about great works of poetry. Course requirements will feature a combination of creative and critical exercises, but no formal essay. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

ENGL 3011 [0.5 credit]  
Comics and Graphic Novels  
An introduction to the critical study of comic books and graphic narrative. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

ENGL 3105 [0.5 credit]  
History of Literary Theory  
Introduction to ideas about literature, aesthetics, authorship, and readership as these have circulated in periods before the twentieth century. Precludes additional credit for ENGL 3000 (no longer offered), and ENGL 3001 (no longer offered). Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

ENGL 3106 [1.0 credit]  
Theories and Critical Practices  
This course offers students an interdisciplinary foundation in cultural, critical, and literary theories and practices. This course is writing attentive. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

ENGL 3200 [0.5 credit]  
Medieval Literature  
A study of selected topics and texts from medieval literature. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit Hours</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisite(s)</th>
<th>Offered by</th>
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<tbody>
<tr>
<td>ENGL 3201</td>
<td>1.0</td>
<td>European Literature</td>
<td>Major movements and works from Dante's Divine Comedy through Voltaire's Candide. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project. Also listed as HUMS 3200.</td>
<td>HUMS 2000 and third-year standing in the Bachelor of Humanities program for Humanities Students. English students should have third year standing with a CGPA of 8.0 or higher.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3202</td>
<td>0.5</td>
<td>Chaucer</td>
<td>A study of Chaucer's works including some attention to the Middle English language in which he wrote.</td>
<td>Third-year standing or permission of the department.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3204</td>
<td>0.5</td>
<td>Literary Representations of Childhood and Youth</td>
<td>An examination of the ways in which childhood, children, and youth have been represented in creative literature (fiction, poetry, drama, and/or creative nonfiction). Also listed as CHST 3204.</td>
<td>Third-year standing.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3305</td>
<td>0.5</td>
<td>Shakespeare and the Stage</td>
<td>Introduction to the study of early modern play-texts written by Shakespeare and/or his contemporaries. Precludes additional credit for ENGL 3304 (no longer offered).</td>
<td>Third-year standing or permission of the department.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3306</td>
<td>0.5</td>
<td>Shakespeare and Film</td>
<td>A study of film adaptations of selected plays by Shakespeare.</td>
<td>Third-year standing or permission of the department.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3401</td>
<td>0.5</td>
<td>The Book in the Digital Age</td>
<td>A multidisciplinary course focused on the social, economic and political dimensions of the book in its manuscript, print and digital forms. Also listed as DIGH 3001.</td>
<td>Third-year standing, or permission of the English Department.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3402</td>
<td>0.5</td>
<td>18th-Century Literature</td>
<td>A detailed study of authors and movements of the period 1660 to 1780.</td>
<td>Third-year standing or permission of the department.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3414</td>
<td>0.5</td>
<td>Introduction to Professional Writing and Editing</td>
<td>The fundamental skills of professional writing and editing, including writing for specific audiences, document design, revision strategies, copyediting. Also listed as ALDS 3414.</td>
<td>Third-year standing or permission of the instructor.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3500</td>
<td>0.5</td>
<td>Literatures and Cultures 1700-1900</td>
<td>A study of the period between 1700 and 1900, with attention to cultural, historical, geographical, and literary contexts. Precludes additional credit for ENGL 3502 (no longer offered).</td>
<td>Third-year standing or permission of the department.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3501</td>
<td>0.5</td>
<td>Literatures and Cultures 1900-Now</td>
<td>A study of the period between 1900 and the present, with attention to cultural, historical, geographical, and literary contexts. Precludes additional credit for ENGL 3502 (no longer offered).</td>
<td>Third-year standing or permission of the department.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3553</td>
<td>0.5</td>
<td>The 19th-Century Novel</td>
<td>A study of the English novel in the 19th century.</td>
<td>Third-year standing or permission of the department.</td>
<td>English Department</td>
</tr>
<tr>
<td>ENGL 3601</td>
<td>0.5</td>
<td>20th- and 21st-Century Poetry</td>
<td>A study of 20th and 21st-century poetry in English. Topics and authors may vary.</td>
<td>Third-year standing or permission of the department.</td>
<td>English Department</td>
</tr>
</tbody>
</table>
ENGL 3603 [0.5 credit]
20th- and 21st-century Fiction
A study of 20th- and 21st-century fiction in English. Topics and authors may vary.
Prerequisite(s): Third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3605 [0.5 credit]
Modern and Contemporary Literary Theory
Introduction to contemporary approaches to literary texts, such as formalist, structuralist, deconstructive, psychoanalytic, Marxist, historicist, and feminist. Topics may include: the nature and role of literature, of author and reader, of canons, ideology, gender, sexuality, and race. Precludes additional credit for ENGL 3002 (no longer offered).
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3608 [0.5 credit]
Topics in Theatre Management
A workshop taught by practitioners in the community that provides students with the knowledge and skills necessary to create, manage, and sustain theatre projects. Topics will vary but may include the development of children's theatre or the operation of a festival or touring company. Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the department.
Workshop three hours a week.

ENGL 3609 [0.5 credit]
Drama: Contemporary Criticism
A study of dramatic texts and performance practices in contemporary professional theatre. Topics vary according to the season programs of professional theatre in Ottawa. Students will attend a number of productions, determined by the instructor. Field trip fees will apply.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3702 [0.5 credit]
American Culture
A study of American writing in its cultural and historical contexts. Precludes additional credit for ENGL 3703 (no longer offered).
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3801 [0.5 credit]
Canadian Poetry
A study of Canadian poetry in its social and political contexts.
Prerequisite(s): third-year standing or permission of the department.
Lecture three hours a week.

ENGL 3803 [0.5 credit]
Canadian Fiction
A study of Canadian fiction in its social and political contexts.
Prerequisite(s): third-year standing or permission of the department.
Lecture three hours a week.

ENGL 3804 [0.5 credit]
Literature and Culture in Europe
A survey of the literature and cultural texts that have defined Europe. Examination of fiction and non-fiction texts that have contributed to and reflected the development of European culture and society. Also listed as EURR 3001.
Prerequisite(s): second year standing.
Lecture and discussion three hours a week.

ENGL 3805 [0.5 credit]
Literature and Culture in Russia and Eurasia
A survey of the literature and cultural texts that have defined Russian and neighbouring Slavic countries. Examination of fiction and non-fiction texts that have contributed to and reflected the development of Russian and Slavic culture and society. Also listed as EURR 3002.
Prerequisite(s): second-year standing.
Lecture and discussion three hours a week.

ENGL 3902 [0.5 credit]
Writing Screenplays
An intermediate workshop involving regular assignments in writing for film. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.
Includes: Experiential Learning Activity
Also listed as FILM 3902.
Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.
Workshops three hours a week.

ENGL 3903 [0.5 credit]
Writing Fiction (Intermediate)
An intermediate workshop involving regular assignments in writing prose fiction and practical criticism. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.
Workshop three hours a week.
ENGL 3904 [0.5 credit]
Intermediate Drama Workshop
A course dealing with techniques of characterization, principles of ensemble performance, scene analysis for actors and directors, styles of performance.
Includes: Experiential Learning Activity
Precludes additional credit for ENGL 2001 (no longer offered).
Prerequisite(s): ENGL 2104 or permission of the Department.
Workshop three hours a week.

ENGL 3905 [0.5 credit]
Topics in Performance
A study of selected elements of performance. Topics will vary but may include such areas as the theory and practice of comic timing on stage or movement on stage space.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the department.
Lecture and workshop three hours a week.

ENGL 3906 [0.5 credit]
Writing Popular Fiction
An intermediate workshop in creative writing that focuses on the development of writing skills specific to the crafting of narratives in such genres as Speculative Fiction, Young Adult Fiction, and Historical Fiction. Permission to register requires the student to submit a writing sample.
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.
Workshop three hours a week.

ENGL 3908 [0.5 credit]
Research and Theory in Academic Writing
Study of contemporary research and theory (1970s to present) on academic writing in elementary, secondary and post-secondary school, with emphasis on writing in university. Consideration of what academic writing entails, how writing fosters learning, and how instruction can help students develop their writing abilities.
Includes: Experiential Learning Activity
Also listed as ALDS 3401.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ENGL 3909 [0.5 credit]
Research and Theory in Workplace Writing
Study of contemporary research and theory (1980s to present) in writing in workplace settings. Consideration of how writing is used in accomplishing work, how novices learn to write effectively, and what the implications are for pedagogy.
Includes: Experiential Learning Activity
Also listed as ALDS 3402.
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ENGL 3910 [0.5 credit]
From Degree to Career
This experiential-learning course prepares students in English for their transition into the workplace. Project-based activities (including readings and research) and guest speakers will teach students to identify, develop, and apply the skills and knowledge gained from a degree in English studies.
Includes: Experiential Learning Activity
Prerequisite(s): Third-year standing or permission of the department.
Lectures and workshops three hours a week.

ENGL 3911 [0.5 credit]
Cultural Studies
This course explores cultural expression across diverse media, theorizing culture as a form of struggle that shapes material conditions, fuels knowledge production, and informs lived experience.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3915 [0.5 credit]
Special Topics in Writing
An intermediate workshop that involves regular creative writing assignments and practical criticism based on this work. Topics will vary. Permission to register requires the student to submit a writing sample. Submission instructions and yearly special topics can be found at carleton.ca/english/.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing, a 2000-level creative writing workshop, and permission of the instructor.
Workshop three hours a week.

ENGL 3916 [0.5 credit]
Spoken Word Poetry Workshop
This intermediate-level workshop-based course explores traditions of spoken word poetry while requiring students to create and perform their own spoken word poems.
Includes: Experiential Learning Activity
Also listed as AFRI 3916.
Prerequisite(s): third-year standing or a 2000-level writing workshop and permission of the instructor.
Workshops three hours a week.

ENGL 3920 [0.5 credit]
Literary Ecological Fieldwork
This interdisciplinary, experiential fieldwork course brings together literature, culture, and ecology studies. At least 50% of class periods will be devoted to short field work excursions in the Ottawa region. These excursions will be complemented by classroom discussion time. Field trip fees will apply.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or permission of the department.
Field work and lectures three hours a week.
ENGL 3930 [0.5 credit]
Topics in Decolonization and Migration II
An intermediate study of literature, culture, and research in the context of topics such as empire and decolonization, diaspora, migration and globalization, race, and ethnicity. Themes, authors, and geographical and temporal focus will vary.
Prerequisite(s): Third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3940 [0.5 credit]
Studies in Diaspora Lit.
A study of diaspora literatures and cultures.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3960 [0.5 credit]
Studies in Indigenous Literature
A study of Indigenous literatures and cultures.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3965 [0.5 credit]
Intro to Postcolonial Theory
A survey of major concepts and key figures in postcolonial theory.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3972 [0.5 credit]
Studies in Postcolonial Literature
A study of postcolonial literatures and cultures. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ENGL 4001 [0.5 credit]
Studies in Poetry
A study of a selected topic in poetry.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4003 [0.5 credit]
Studies in the Novel
A study of a selected topic in the novel.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4004 [0.5 credit]
Writing and Knowledge-Making in the Professions
The role of writing in constructing knowledge in the professions, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different professions shape their writing in distinctive ways and what implications this holds for theory, research, and practice.
Includes: Experiential Learning Activity
Also listed as ALDS 4404.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week.

ENGL 4005 [0.5 credit]
Studies in Literary Theory
Study of a selected topic in literary theory and criticism.
Precludes additional credit for ENGL 4000 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4105 [0.5 credit]
Old English
Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.
Also listed as LING 4805.
Precludes additional credit for ENGL 3102 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4115 [0.5 credit]
Culture and the Text
Topics will vary from year to year.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4125 [0.5 credit]
Digital Culture and the Text I
A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.
Also listed as DIGH 4002.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the Department.
Seminar or lecture three hours a week.

ENGL 4135 [0.5 credit]
Studies in Publishing
Topics will vary from year to year.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.
ENGL 4145 [0.5 credit]
Digital Culture and the Text II
A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.
Also listed as DIGH 4003.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the Department.
Seminar or lecture three hours a week.

ENGL 4155 [0.5 credit]
Studies in Digital Humanities
A study of current issues and debates in the Digital Humanities.
Also listed as DIGH 4001.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.
Seminar or lecture three hours a week.

ENGL 4208 [0.5 credit]
Studies in Medieval Literature
A study of a selected topic in Medieval literature; requires previous experience reading medieval English.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4301 [0.5 credit]
Studies in Renaissance Literature
A study of a selected topic in Renaissance literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4401 [0.5 credit]
Studies in 18th-Century Literature
A study of a selected topic in Restoration or 18th-century literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4404 [0.5 credit]
Digital Humanities Workshop
This workshop will provide students with the opportunity to complete an individual or collaborative capstone project in the Digital Humanities.
Includes: Experiential Learning Activity
Also listed as DIGH 4004.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.
Workshop three hours a week.

ENGL 4405 [0.5 credit]
Digital Humanities Practicum
Practical experience gained by working on projects under the supervision of the staff of a participating public- or private-sector institution or organization, including a final written assignment or equivalent project. A maximum of 1.0 practicum credit may be applied towards degree requirements.
Includes: Experiential Learning Activity
Also listed as DIGH 4005.
Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.
Practicum.

ENGL 4414 [0.5 credit]
Professional Writing I
The role of writing in government and NGOs. Consideration of various genres, practices and styles of government and NGO writing, including grant proposals, administrative reports, press releases, briefing notes, recommendation reports.
Includes: Experiential Learning Activity
Also listed as ALDS 4414.
Prerequisite(s): third-year standing or permission of the instructor.
Seminar three hours a week. May include a work placement.

ENGL 4415 [0.5 credit]
Professional Writing II
The role of writing in science-related fields and in the health professions. Consideration of various genres, practices and styles of scientific and health-related writing, including research reports, grant proposals, case reports, popularizations of science, press releases.
Includes: Experiential Learning Activity
Also listed as ALDS 4415.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week. May include a work placement.

ENGL 4500 [0.5 credit]
Studies in Romanticism
A study of a selected topic, 1770-1830.
Precludes additional credit for ENGL 4407 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.
ENGL 4515 [0.5 credit]
Teaching Writing in School and the Workplace
Introduction to approaches for teaching writing in elementary and secondary school, in university, and in the workplace, with a focus on socio-cultural theories of language and learning. Discussion of applications of these approaches to classroom and workplace teaching.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing, or permission of the instructor.
Seminar three hours a week.

ENGL 4550 [0.5 credit]
Studies in Victorian Literature
A study of a selected topic in 19th-century British literature, 1830-1900.
Precludes additional credit for ENGL 4501 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4600 [0.5 credit]
The Great Russian Novel
A study of masterpieces of the Russian tradition, to be selected from among works by writers such as Tolstoy, Dostoevsky, Gogol, Turgenev, Bely, Bulgakov, and Nabokov. All novels will be read in English translation.
Also listed as EURR 4103.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4601 [0.5 credit]
Studies in Contemporary Poetry
A comparative and transnational approach to 20th- and 21st-century poetry.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4605 [0.5 credit]
Theatre Production Seminar
This course offers students advanced engagement with the theory and application of theatrical crafts and includes participation in a writing, acting, or technical capacity on a class production.
Includes: Experiential Learning Activity
Prerequisite(s): ENGL 3904 or permission of the department.
Seminar three hours a week.

ENGL 4607 [0.5 credit]
Studies in 20th- and 21st-century Literature
A study of a selected topic in literature of the 20th and 21st century.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4609 [0.5 credit]
Global Stages and Theories
An advanced study of dramatic texts from transnational, postcolonial, or European contexts. This course will offer sustained attention to specific theatre traditions, theatrical practice, and interpretation of texts. Topics and points of emphasis vary from year to year.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4708 [0.5 credit]
Studies in American Literature I
A study of a selected topic in American literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4709 [0.5 credit]
Studies in American Literature II
A study of a selected topic in American literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4802 [0.5 credit]
Race, Ethnicity and Canadian Lit.
A study of Canadian literature that engages with notions of race and ethnicity.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4806 [0.5 credit]
Studies in Canadian Literature I
A study of a selected topic in Canadian literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4807 [0.5 credit]
Studies in Canadian Literature II
A study of a selected topic in Canadian literature.
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.

ENGL 4908 [1.0 credit]
Independent Study
Independent research and writing, under the supervision of English faculty, requiring an essay of approximately 10,000 words. A written proposal outlining the project must be submitted to the undergraduate supervisor by July 31. Not available to students in a Combined Honours program.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in English with a CGPA of 10.0 in English courses, and permission of the undergraduate supervisor.
ENGL 4909 [0.5 credit]
Writing and Knowledge-Making in the Disciplines
The role of writing in constructing knowledge in academic disciplines, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different disciplines shape their writing in distinctive ways and what implications this holds for pedagogy.
Includes: Experiential Learning Activity
Also listed as ALDS 4403.
Precludes additional credit for LALS 5406 (no longer offered) or ALDS 5602 (no longer offered) or LALS 5602 (no longer offered).
Prerequisite(s): third-year standing or permission of the instructor.
Lectures three hours a week.

ENGL 4910 [0.5 credit]
Independent Creative Writing Project
Independent creative writing, under the supervision of Departmental faculty, requiring the production of a poetry manuscript (10-15 poems), a one-act play, a 10,000-word novella, or two short stories. A written proposal outlining the project must be submitted to the faculty supervisor by July 31.
Includes: Experiential Learning Activity
Prerequisite(s): completion of required credits for the Creative Writing Concentration, fourth-year Honours standing in English with a CGPA OF 10.0 in English courses, and permission of the Undergraduate Supervisor in conjunction with the faculty supervisor.

ENGL 4915 [0.5 credit]
Advanced Writing Workshop
An advanced workshop involving regular assignments in creative writing and practical criticism based on this work. Topics will vary.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in English, a 3000-level creative writing workshop, or permission of the instructor. Permission to register in this course requires the student to submit a writing sample. Instructions on this process and on yearly special topics can be found at carleton.ca/english.
Workshop three hours a week.

ENGL 4947 [0.5 credit]
Issues in Diaspora Literature
A study of a selected topic in diaspora literature and culture.
Precludes additional credit for ENGL 4907 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminar or lecture three hours a week.
English as a Second Language (ESLA)

ESLA 1300 [1.0 credit]
Introductory English as a Second Language for Academic Purposes
For students with little or no experience with academic English. Introduction to integrated language strategies, critical thinking, and basic research techniques for success at university. Attendance and participation are compulsory.
Includes: Experiential Learning Activity
Prerequisite(s): placement by an approved English language proficiency test, as determined by the School.
Not open to native speakers of English.
Six hours a week (one term), plus a two-hour weekly lab.

ESLA 1500 [1.0 credit]
Intermediate English as a Second Language for Academic Purposes
For students with moderate experience with academic English. Development and application of academic language conventions, critical thinking and research strategies for success at university. Attendance and participation are compulsory.
Prerequisite(s): grade of C or higher in ESLA 1300 or placement by an approved English language proficiency test, as determined by the School.
Not open to native speakers of English.
Six hours a week (one term).

ESLA 1900 [1.0 credit]
Advanced English as a Second Language for Academic Purposes
For students needing further refinement of academic English. Analysis and synthesis of academic texts and consolidation of academic language and research practices. Attendance and participation are compulsory.
Prerequisite(s): grade of C+ or higher in ESLA 1300 or placement by an approved English language proficiency test, as determined by the School.
Not open to native speakers of English.
Six hours a week (one term).

ESLA 1905 [1.0 credit]
Advanced English as a Second Language for Engineering Students
ESP (English for Specific Purposes) for students in Engineering and Industrial Design needing further refinement of academic English. Development of technical communication skills: reports, design projects, schematics, and oral presentations appropriate to academic and professional needs. Attendance and participation are compulsory.
Prerequisite(s): grade of C+ or higher in ESLA 1500 or placement by an approved English language proficiency test, as determined by the School.
Not open to native speakers of English.
Three hours a week (two terms) or six hours a week (one term).

ESLA 1906 [0.5 credit]
Advanced ESL Writing for Specific Disciplines
Strategies for writing academic papers in specific disciplines. Individual sections limited to students from a specified discipline. Not open to native speakers of English.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the academic unit housing the specified discipline.
Three hours a week plus tutorials one hour a week (one term).

ESLA 2000 [0.5 credit]
English Language Development for Specific Purposes I
For students in designated programs. Designed primarily for students whose first language is not English. Topics to be determined.
Prerequisite(s): permission of the School.
Three hours a week.

ESLA 3000 [0.5 credit]
English Language Development for Specific Purposes II
For students in designated programs. Designed primarily for students whose first language is not English. Topics to be determined.
Prerequisite(s): permission of the School.
Three hours a week.

Environmental Engineering (ENVE)

Environmental Engineering (ENVE) Courses

ENVE 1001 [0.5 credit]
Architecture and the Environment
Impacts of the environment on architecture; deterioration, freeze/thaw, solar heat, air pollution, moisture; Impacts of architecture on the environment; ecologic footprint, energy consumption, air quality, waste generation; designing with the environment; renewable energy, effective siting and landscape, passive solar energy, natural lighting, energy efficiency.
Lectures three hours a week, problem analysis one and a half hours a week.

ENVE 2001 [0.5 credit]
Process Analysis for Environmental Engineering
Material and energy balances for reacting and non-reacting systems. Applications in mining, metallurgy, pulp and paper, power generation, energy utilization. Emissions to the environment per unit product or service generated. Introduction to life cycle analysis, comparative products and processes.
Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent, and MAAE 2400 (may be taken concurrently), and second-year status in Engineering.
Lectures two hours a week, problem analysis three hours a week.
ENVE 2002 [0.5 credit]
Microbiology
The biology of the Bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.
Also listed as BIOL 2303.
Prerequisite(s): BIOL 1103 or CHEM 1002 or CHEM 1101 or equivalent.
Lectures three hours a week.

ENVE 3001 [0.5 credit]
Water Treatment Principles and Design
Theoretical aspects of unit operations for water treatment with design applications. Topics include water characteristics and contaminants, coagulation, flocculation, sedimentation, filtration, adsorption, ion exchange, membrane processes, disinfection and disinfection by-products, and management of water treatment residuals. Laboratory procedures: settling operations, filtration, aeration, and adsorption.
Includes: Experiential Learning Activity
Prerequisite(s): ENVE 3002.
Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3002 [0.5 credit]
Environmental Engineering Systems Modeling
Engineered systems for pollution abatement; chemical reaction engineering; reaction kinetics and rate data analysis; design and modeling of reactors; single and multiple reactions; ideal and nonideal reactors; single and multi-parameter models; biochemical reaction engineering; process control. Laboratory procedures: reactor systems performance: Batch, CSTR and PFR.
Includes: Experiential Learning Activity
Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent and MATH 2004, and second-year status in Engineering. Additional recommended background: ENVE 2001.
Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3003 [0.5 credit]
Water Resources Engineering
A quantitative analysis of natural water systems and the development of these systems as a resource. Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Hydraulic properties and availability of groundwater. Storm water management. Also listed as GEOG 4103.
Prerequisite(s): third-year status in Engineering.
Lectures three hours a week, problem analysis one hour a week.

ENVE 3004 [0.5 credit]
Contaminant and Pollutant Transport in the Environment
Physical phenomenon governing the transport of contaminants in the environment: diffusion, advection, dispersion, sorption, interphase transfer. Derivation and application of transport equations in air, surface and groundwater pollution; analytical and numerical solutions. Equilibrium partitioning of contaminants among air, water, sediment, and biota.
Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent; ENVE 3002.
Lectures three hours a week, problem analysis one hour a week.

ENVE 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ENVE 4002 [0.5 credit]
Environmental Geotechnical Engineering
Landfill design; hydrogeologic principles, water budget, landfill liners, geosynthetics, landfill covers, quality control/quality assurance, clay leachate interaction, composite liner design and leak detection. Landfill operation, maintenance and monitoring. Case studies of landfill design and performance. Geotechnical design of environmental control and containment systems.
Prerequisite(s): ENVE 3004, CIVE 3208.
Also offered at the graduate level, with different requirements, as ENVE 5201/EVG 7201, for which additional credit is precluded.
Lectures three hours a week, problem analysis one hour a week.

ENVE 4003 [0.5 credit]
Air Pollution and Emissions Control
Air pollutants, classification, sources, and effects. Ambient air quality objectives and monitoring. Pollutant formation mechanisms in combustion. Major pollutant categories and control methods. Indoor air quality. Laboratory procedures: emissions from boilers and IC engines, particulate size distribution and control, IAQ parameters.
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2400 and fourth-year status in Engineering or permission of the department. Also offered at the graduate level, with different requirements, as ENVE 5101/EVG 7101, for which additional credit is precluded.
Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.
ENVE 4005 [0.5 credit]
Wastewater Treatment Principles and Design
Theoretical aspects of unit operations and processes for wastewater treatment with design applications. Topics include wastewater characteristics, flow rates, primary treatment, chemical unit processes, biological treatment processes, advanced wastewater treatment, disinfection, biosolids treatment and disposal. Laboratory procedures: activated sludge, anaerobic growth, chemical precipitation, disinfection.
Includes: Experiential Learning Activity
Prerequisite(s): ENVE 3001, ENVE 3002.
Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 4006 [0.5 credit]
Contaminant Hydrogeology
Prerequisite(s): ENVE 3004 and MAAE 2300. Additional recommended background: ENVE 3003.
Also offered at the graduate level, with different requirements, as ENVE 5301/EVG 7301, for which additional credit is precluded.
Lectures three hours a week, problem analysis one and a half hours a week.

ENVE 4101 [0.5 credit]
Waste Management
Municipal, hazardous, and mine waste management. Waste composition and potential impacts, collection and transport, recycling and reuse, biological and thermal treatments, isolation. Integrated waste management planning.
Prerequisite(s): ENVE 3001, ENVE 3002 and ENVE 3004.
Also offered at the graduate level, with different requirements, as ENVE 5203/EVG 5203, for which additional credit is precluded.
Lectures three hours a week, problem analysis one hour a week.

ENVE 4104 [0.5 credit]
Environmental Planning and Impact Assessment
Includes: Experiential Learning Activity
Prerequisite(s): ENVE 3004 and fourth-year status in Engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

ENVE 4105 [0.5 credit]
Green Building Design
Concepts, calculations, modeling; design of green buildings and their components; sustainable sites and landscaping; passive design; building envelope; building materials; daylighting; heating, cooling, and ventilation; building-integrated renewable energy systems; indoor environmental quality; overview of building standards and codes.
Prerequisite(s): fourth-year status in B.Eng. Architectural Conservation and Sustainability Engineering, Environmental Engineering or Civil Engineering or fourth-year standing in B.A.S. concentration in Conservation and Sustainability.
Lectures three hours a week, problem analysis one and a half hours per week.

ENVE 4106 [0.5 credit]
Indoor Environmental Quality
Indoor environmental quality (air quality, thermal, visual, and acoustic comfort); physical and chemical parameters for characterization. Types and sources of indoor air pollution and discomfort; measurement techniques. Heating, ventilation, air conditioning, lighting practices and issues. Modelling of and design for indoor environmental quality.
Prerequisite(s): fourth year status in B.Eng. Architectural Conservation and Sustainability Engineering or B.Eng. Environmental Engineering or fourth year standing in B.A.S. concentration in Conservation and Sustainability. Also offered at the graduate level, with different requirements, as ENVE 5104, for which additional credit is precluded.
Lectures three hours a week, problem analysis and laboratory three hours alternate weeks.

ENVE 4107 [0.5 credit]
Building Services Engineering
This course provides details on how buildings are designed and operated. The materials provide foundational knowledge to understand building services: mechanical, electrical, plumbing systems with associated controls.
Prerequisite(s): CIVE 3209, ENVE 4105 (may be taken concurrently).
Lecture three hours per week, problem analysis three hours every other week.
ENVE 4200 [0.5 credit]
Climate Change and Engineering
Survey of the physical science of climate change, impacts on the built environment, and climate adaptation in engineering. Greenhouse gases, global warming, paleoclimatology, and Earth system responses. Climate change impacts on structural, water, transportation, and energy systems. Climate vulnerability assessment, examples of design adaptation.
Prerequisite(s): Fourth-year status in Engineering.
Also offered at the graduate level, with different requirements, as ENVE 5200, for which additional credit is precluded.
Lecture three hours per week, problem analysis three hours every other week.

ENVE 4907 [1.0 credit]
Engineering Research Project
A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies.
Includes: Experiential Learning Activity
Precludes additional credit for ENVE 4917.
Prerequisite(s): fourth-year status in Engineering and permission of the department.

ENVE 4917 [0.5 credit]
Undergraduate Directed Study
Student carries out a study, analysis, and solution of an engineering problem which results in a written final report. Carried out under close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.
Includes: Experiential Learning Activity
Precludes additional credit for ENVE 4907.
Prerequisite(s): permission of the Department and completion of, or concurrent registration in, ENVE 4918.
Self study.

ENVE 4918 [1.0 credit]
Design Project
Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.
Includes: Experiential Learning Activity
Prerequisite(s): ECOR 3800 and fourth-year Status in Engineering. Certain projects may have additional requirements.
Lectures two hours alternate weeks, problem analysis three hours a week.

Environmental Science (ENSC)

ENSC 1500 [0.5 credit]
Environmental Science Seminar
The purpose and nature of the program; society's view on the natural and human-modified environment; major environmental issues and their scientific aspects; preparation and presentation of paper and seminars.
Includes: Experiential Learning Activity
Prerequisite(s): enrolment in the Environmental Science program.
Lectures, seminars and workshops four hours a week.

ENSC 2000 [0.5 credit]
Environmental Science Field Methods
A field-based course introducing students to practical methods in environmental science. Topics will include earth sciences, geography, biology, and chemistry related aspects of environmental sciences and will focus on quantitative techniques to assess environmental impacts and management. A supplementary fee will apply.
Includes: Experiential Learning Activity
Prerequisite(s): ERTH 1006 and BIOL 1004 or BIOL 1104, CHEM 1001 and CHEM 1002 and permission of the Institute.
Field trips, lectures and workshops, seven hours per week (delivered on a single day and on up to two mandatory weekend trips).

ENSC 2001 [0.5 credit]
Earth Resources and Natural Hazards: Environmental Impacts
Environmental impact of mineral, energy and water resource exploitation and impact of hazardous Earth processes such as volcanic eruptions, earthquakes and others: their prediction and mitigation.
Lectures three hours per week.

ENSC 2002 [0.5 credit]
Methods and Analysis in Environmental Science
Study and application of qualitative and quantitative techniques in environmental science, including study design, data collection and assembly, database manipulation, data analysis, and critically evaluating scientific information.
Includes: Experiential Learning Activity
Prerequisite(s): STAT 2507 or permission from the Institute.
Lectures and seminars three hours a week.
ENSC 3000 [0.5 credit]
Environmental Science and Management: Theory and Practice
Theoretical and practical perspectives related to environmental science and management; Emphasis on real-world problems associated with human activities and development of solutions in natural and built environments; Hands-on experience with environmental monitoring and restoration. A supplementary fee will apply. Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Environmental Science or permission of the Institute.
Field trips, lectures and workshops, 7 hours per week (delivered on a single day).

ENSC 3106 [0.5 credit]
Aquatic Science and Management
Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation. Includes: Experiential Learning Activity
Also listed as GEOG 3106.
Prerequisite(s): third-year standing and a second year science or engineering course.
Workshop four hours per week.

ENSC 3509 [0.5 credit]
Group Research in Environmental Science
Major project relating to an issue involving environmental science; effective methods of team research and presentation of group work. May include field work during class time or on weekends.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the Honours Environmental Science program or permission of the Institute.
Lectures, seminars and workshops three hours a week.

ENSC 3700 [0.5 credit]
Topics in Environmental Science
Specific topics of current interest. Topics may vary from year to year.
Prerequisite(s): Third year standing in the Environmental Science program or permission of the Institute.

ENSC 3906 [0.5 credit]
Project Planning for Environmental Research
Independent or group study on the fundamentals of scientific investigation, which may include use of literature, learning of research techniques, and development of a research proposal, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Includes: Experiential Learning Activity
Prerequisite(s): Good standing in third year Environmental Science and permission of the Institute.

ENSC 3999 [0.0 credit]
Co-operative Work Term
Practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Environmental Science Co-operative Option and permission of the Institute. Four-month work term.

ENSC 4001 [0.5 credit]
Environmental Science Practicum
Experience working in the environmental science sector, applying academic training to practical environmental issues. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Environmental Science program.
practicum

ENSC 4002 [0.5 credit]
Environmental Decisions
The regulatory and scientific aspects of environmental management decisions, including risk analysis and mitigation, managing chronic and acute environmental impacts, and conservation of species and landscapes. Students will use real-world case studies to learn traditional and cutting-edge decision-making tools.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in any B.Sc. program or permission of the Institute.
Workshops three hours per week.

ENSC 4003 [0.5 credit]
Food Systems and the Environment
This course explores issues of food systems and their sustainability. We will discuss aspects of food systems, including production, distribution, consumption, waste management, and their impact on communities and the environment.
Includes: Experiential Learning Activity
Prerequisite(s): third year standing in B.Sc. or B.HSc. program or permission of the Institute.
Lecture three hours per week.

ENSC 4700 [0.5 credit]
Topics in Environmental Science
Prerequisite(s): third-year standing in the Environmental Science program or permission of the Institute.
Lectures and discussion three hours a week.
ENSC 4901 [0.5 credit]
Directed Projects
Independent or group study, for fourth-year students to explore a particular project, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Institute. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

ENSC 4906 [1.0 credit]
Honours Research Project
An independent investigation into an aspect of environmental science supervised by a member of the faculty. Approval of the topic and the research schedule must be obtained from the project supervisor and the course coordinator before the last date for registration.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Honours Environmental Science program, a major CGPA 8.0 and permission of the Institute.

Environmental Studies (ENST) Courses

ENST 1000 [0.5 credit]
Introduction to Environmental Studies
A critical introduction to the scholarly field of environmental studies, with an emphasis on society-environment entanglements. It is designed to engage with environmental issues. Possible themes include population, scarcity, institutions, commons, risks, hazards, markets, political economy, and the social construction of nature.
Precludes additional credit for FYSM 1100 and ENST 1001 (no longer offered).
Lecture two hours and workshops/tutorials one hour weekly.

ENST 1020 [0.5 credit]
People, Places and Environments
Introduction to human geography. Examination of relationships between people, communities, society and the natural environment at local to global scales. Population change, cultural patterns, and historical, economic, political and environmental forces that shape human activity and experiences from place to place.
Includes: Experiential Learning Activity
Also listed as GEOG 1020.
Lectures two hours a week and tutorials one hour a week.

ENST 2000 [0.5 credit]
Environmental Justice
Contemporary and foundational theories, practice and praxis of environmental justice in Canadian and comparative settings. Combine and communicate about aspects of the physical, built and social environments to understand how uneven conditions develop. Strategies and ideas to move towards greater equity and good environmental relationships.
Prerequisite(s): second-year standing in the Environmental Studies program or permission of the Department.
Lecture two hours a week, discussion one hour a week.

ENST 2001 [0.5 credit]
Sustainable Futures: Environmental Challenges and Solutions
Individual and collective responses to pressing environmental problems. Innovative ways in which the environment can be protected and restored, taking into consideration socioeconomic, political and cultural factors. Topics include environmental lifestyles, sustainable communities, food systems, environmental design, and political activism.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the Environmental Studies program or permission of the Department.
Lectures, seminars and field work three hours a week.

ENST 2005 [0.5 credit]
Introduction to Qualitative Research
Introduction to the research process, from generating questions through to reporting results. Topics include intensive and extensive research approaches; the use of surveys, interviews and other data collection methods; the analysis of qualitative information; and the ethical dimensions of doing research with people and communities.
Includes: Experiential Learning Activity
Also listed as GEOG 2005.
Prerequisite(s): 1.0 credit in GEOG or ENST at the 1000-level and second-year standing, or permission of the Department.
Lectures two hours a week, workshop two hours a week.

ENST 2006 [0.5 credit]
Introduction to Quantitative Research
Introduction to solving problems using descriptive and inferential statistical methods. Graphical and numerical tools to describe distributions. Probability, sampling and estimates, and hypothesis testing. Fundamentals of spatial statistics and analysis.
Includes: Experiential Learning Activity
Also listed as GEOG 2006.
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), NEUR 2002, PSCI 2702, STAT 2507, STAT 2606.
Lectures two hours a week, laboratory two hours a week.
ENST 2500 [0.5 credit]
Climate Change: Social Science Perspectives
An introduction to climate change as a political, economic and socio-cultural phenomenon, including the political-economic and world-historical causes of anthropogenic greenhouse gas emissions; variations in impact and vulnerability; climate justice and other political movements; global mitigation and adaptation strategies; and proposals for radical systemic change.
Includes: Experiential Learning Activity
Also listed as GEOG 2500.
Prerequisite(s): second-year standing or permission of the department.
Lectures two hours a week, discussion groups one hour a week.

ENST 3000 [0.5 credit]
Nature, Environment and Society
Overview of social science perspectives analyzing the relationship of society and the environment. Examination of environmental problems, solutions, conditions, and interventions through the study of concepts, theories, and research drawn from a range of scholarly approaches to questions of nature.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Environmental Studies or permission of the department.
Lecture and discussion three hours a week.

ENST 3022 [0.5 credit]
Environmental and Natural Resources
Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources.
Includes: Experiential Learning Activity
Also listed as GEOG 3022.
Prerequisite(s): third-year standing in Geography or Environmental Studies or BGLnS Specialization/Stream in Globalization and Environment or permission of the Department.
Lecture three hours a week.

ENST 3900 [0.5 credit]
Honours Field Course
Field research, with a focus on data collection methods, analysis and presentation of findings. Design and conduct research that links the human and biophysical environment. Topics may change from year to year.
Includes: Experiential Learning Activity
Also listed as GEOG 3000.
Precludes additional credit for ENST 2900 (no longer offered).
Prerequisite(s): GEOG 2005/ ENST 2005 and GEOG 2006/ ENST 2006, third-year Honours standing in Environmental Studies, Geomatics, or Geography, or permission of the Department.
Normally consists of a multi-day field excursion in the Ottawa region. A supplementary charge may apply.
Consult the department regarding course details.

ENST 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ENST 4000 [0.5 credit]
Environmental Studies Seminar
An advanced seminar designed to provide a capstone experience that builds upon and applies the analytical skills and interdisciplinary knowledge acquired in the Environmental Studies program. Topics vary year to year and by course section (see departmental website).
Includes: Experiential Learning Activity
Prerequisite(s): Registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program.
Seminar three hours per week.

ENST 4001 [0.5 credit]
Environmental Studies Practicum I
External agency setting provides the basis for translating academic training into practical involvement with environmental issues. Observation and involvement in issues and research methods used by professional environmental practitioners.
Includes: Experiential Learning Activity
Prerequisite(s): registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4002 [0.5 credit]
Environmental Studies Practicum II
External agency setting provides the basis for translating academic training into practical involvement with environmental issues. Observation and involvement in issues and research methods used by environmental practitioners.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the fourth year of the Environmental Studies Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4004 [0.5 credit]
Environmental Impact Assessment
Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies.
Includes: Experiential Learning Activity
Also listed as GEOG 4004.
Prerequisite(s): GEOG 3022 or ENST 3022, and fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.
Lectures and seminars three hours per week.
ENST 4005 [0.5 credit]
Directed Studies in Environmental Studies
Students pursue their interest in a selected theme in environmental studies on a tutorial basis with a faculty member.
Prerequisite(s): permission of the Department.

ENST 4006 [0.5 credit]
Environmental Policy Analysis
Critical examination of the creation, implementation and effectiveness of government policies related to environmental issues. Emphasis on perspectives, actors, institutions and social and economic relationships affecting policy responses to these issues, and on tools for analyzing the implications of specific policy choices.
Prerequisite(s): fourth-year Honours standing in Environmental Studies, Geography, or permission of the Department.
Seminar three hours per week.

ENST 4007 [0.5 credit]
Special Topics in Geography and Environmental Studies
Selected topics in geography and/or environmental studies.
Also listed as GEOG 4007.
Precludes additional credit for GEOG 4006 (no longer offered).
Prerequisite(s): fourth-year Honours standing in the Department or permission of the Department.
Seminar three hours per week.

ENST 4022 [0.5 credit]
Seminar in People, Resources, and Environmental Change
A selected topic or field of inquiry concerning natural resource use and environmental change.
Also listed as GEOG 4022.
Prerequisite(s): GEOG 3022 or ENST 3022 and fourth-year Honours standing in Geography or Environmental Studies or BGlnS Specialization in Globalization and Environment, or permission of the Department.
Seminar three hours per week.

ENST 4050 [0.5 credit]
Environmental and Geographic Education
Selected theoretical and applied issues concerning environmental and geographic education.
Also listed as GEOG 4050.
Prerequisite(s): Third-year honours standing in Geography or Environmental Studies, or permission of the Department.
Seminar three hours per week.

ENST 4400 [0.5 credit]
Field Studies
Field observation and methodology in a selected region, special topic or contemporary problem; on an individual or group basis.
Includes: Experiential Learning Activity
Also listed as GEOG 4000.
Prerequisite(s): third-year Honours standing and permission of the Department.
Hours to be arranged.

ENST 4450 [0.5 credit]
Community-Engaged Research
Working in partnership with local organizations, students apply their geographical knowledge to conduct community-engaged research. Student projects will generate outputs for community partners. Research topics vary year to year.
Includes: Experiential Learning Activity
Also listed as GEOG 4450.
Prerequisite(s): fourth-year standing, or permission of the department.
Lectures, discussion and project work three hours a week.

ENST 4906 [1.0 credit]
Honours Research Project
An independent investigation into a select aspect of environmental studies, supervised by a faculty member. Possible outcomes might include: workshops, audio-visual productions, lay publications, and field projects accompanied by an essay demonstrating the student's capacity to critically reflect on the research project.
Includes: Experiential Learning Activity
Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4909, GEOM 4909, GEOG 4906, GEOM 4906, and ENST 4907.
Prerequisite(s): fourth-year Honours standing in Environmental Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.
Hours to be arranged with faculty adviser.

ENST 4907 [1.0 credit]
Honours Research Essay
Interdisciplinary research essay on an environmental issue, carried out in consultation with a faculty supervisor. The student must consult with the undergraduate student advisor in selecting a project and a supervisor.
Includes: Experiential Learning Activity
Precludes additional credit for ENST 4906, GEOG 4909, GEOM 4909, GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906 and GEOM 4906.
Prerequisite(s): fourth-year Honours standing in Environmental Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.
Hours to be arranged with faculty adviser.
### European, Russian and Eurasian Studies (EURR)

#### European and Russian Studies (EURR) Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
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| EURR 1001  | 0.5    | Introduction to European and Russian Studies | | Includes: Experiential Learning Activity
Lectures/groups three hours a week. |
| EURR 2001  | 0.5    | Current Issues in European Politics and Society | | An interdisciplinary examination of social, political, and economic issues facing Europe, including the countries of the European Union, Eastern Europe, and Russia. |
| EURR 2002  | 0.5    | Europe and Russia in the World | | The position of Europe, the European Union, and the Russian Federation in a global context, including geopolitical, economic, security, and human dimensions. |
| EURR 3001  | 0.5    | Literature and Culture in Europe | | A survey of the literature and cultural texts that have defined Europe. |
| EURR 3002  | 0.5    | Literature and Culture in Russia and Eurasia | | A survey of the literature and cultural texts that have defined Russian and neighboring Slavic countries. |
| EURR 3999  | 0.0    | Co-operative Work Term | | Includes: Experiential Learning Activity
Prerequisite(s): registration in the B.A. European and Russian Studies (Honours) Co-operative option, completion of the Co-op preparation classes offered by the Co-op Office and permission of the Institute. |
| EURR 4002  | 0.5    | Post-Soviet States and Societies | | The relationship between social forces and state structures at both the national and local levels in the USSR and the post-Soviet states. Also listed as PSCI 4502. Prerequisite(s): fourth-year Honours standing or permission of the Institute. Also offered at the graduate level, with different requirements, as EURR 5002, PSCI 5110, for which additional credit is precluded. |
| EURR 4003  | 0.5    | Social and Political Perspectives in Europe | | Social issues and policies in the European Union including European identity, democratic legitimacy, nationalist and extremist political movements, Euroscepticism, migration and immigration, social inclusion/exclusion and social models, gender and family policy, regional differentiation. Precludes additional credit for EURR 4000. Prerequisite(s): fourth-year Honours standing or permission of the Institute. Also offered at the graduate level, with different requirements, as EURR 5003, for which additional credit is precluded. |
| EURR 4008  | 0.5    | Nationalism and Ethnic Conflict in Eastern and Central Europe | | Ethnic basis of nationalism in the region. Ethnic politics and trends. Prerequisite(s): fourth-year Honours standing or permission of the Institute. |
| EURR 4100  | 0.5    | Nation-Building in Central and Eastern Europe | | Processes of nation building in the region examined in terms of a particular country, or set of countries. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Institute. Also offered at the graduate level, with different requirements, as EURR 5100, for which additional credit is precluded. |
| EURR 4101  | 0.5    | The Balkans in Transition – 1918 to 1989 | | The seminar uses the concept of transition to understand the Balkan encounter with modernity and Europe. Key periods to be examined include the interwar era and the period of communist rule, with an emphasis on political, social and economic themes. Also listed as HIST 4605. Prerequisite(s): fourth-year Honours standing or permission of the Institute. |
EURR 4102 [0.5 credit]
The Balkans since 1989
Selected topics in Balkan politics and society since the collapse of communism in 1989, focusing on the democratic transition and the EU accession process. The legacies of communist rule, democratization and the many national questions that still exist in the region.
Also listed as PSCI 4507.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4103 [0.5 credit]
The Great Russian Novel
A study of masterpieces of prose fiction from the Golden Age of Russian literature. Readings will be chosen from writers such as Turgenev, Tolstoy, Dostoevsky, Gogol, and/or others. All texts will be studied in English translation.
Also listed as ENGL 4600.
Prerequisite(s): Third-year standing.
Lecture three hours a week.

EURR 4104 [0.5 credit]
European Integration and European Security
Issues related to the formation of supra-national decision-making structures in Europe.
Includes: Experiential Learning Activity
Also listed as PSCI 4608.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5104, for which additional credit is precluded.
Seminar three hours a week.

EURR 4106 [0.5 credit]
Selected Topics in European Integration Studies
Selected topics related to European integration in the post-World War II period.
Also listed as PSCI 4609.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4107 [0.5 credit]
Russia’s Regional and Global Ambitions
Domestic conditions in Russia from 2000 to the present and the framing of Russia’s foreign policy and strategic objectives towards the former Soviet republics and other key global actors, including the United States, the European Union, NATO and China.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5107, for which additional credit is precluded.
Seminar three hours a week.

EURR 4201 [0.5 credit]
Special Topics in European Studies
A seminar focusing on selected topics related to Europe.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4202 [0.5 credit]
Special Topics in Russian and Eurasian Studies
A seminar focusing on selected topics related to Russia and neighbouring countries.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5202, for which additional credit is precluded.
Seminar three hours a week.

EURR 4204 [0.5 credit]
Central Europe, Past and Present
Evolution and current status of Central Europe from periods of foreign control in the late nineteenth and twentieth centuries to independent statehood, with emphasis on national accommodations and conflicts.
Also listed as HIST 4604.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5204, for which additional credit is precluded.
Seminar three hours a week.

EURR 4205 [0.5 credit]
Politics of Identity in Europe and the Russian Area
The relationships between political transformation, identity-building, ethnicity, and gender politics in post-communist states, considered in comparison with select countries in Central and/or Western Europe.
Includes: Experiential Learning Activity
Also listed as PSCI 4501.
Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2500, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.
Seminar three hours a week.
EURR 4206 [0.5 credit]
Internship and Applied Policy Skills
A seminar accompanying an unpaid internship placement to develop workplace and applied policy skills. Relating applied experience to academic literature. Writing skills for an applied policy setting. Internship placement: 12 days over 12 weeks.
Includes: Experiential Learning Activity
Prerequisite(s): open only to fourth-year EURUS B.A. Honours students with a minimum B+ average and placement in an internship position in the same semester or in the previous semester (based on a competitive application process).
Also offered at the graduate level, with different requirements, as EURR 5301, for which additional credit is precluded.
Seminar: six three-hour seminar sessions.

EURR 4207 [0.5 credit]
Politics of Central Eurasia
Examination of the Caucasus and Central Asia, from Chechnya to former Soviet republics of the region, Afghanistan and Chinese Turkestan. Interests of Russia, China, and the United States. Emphasis on underdevelopment, oil and gas, terrorism, Islam.
Includes: Experiential Learning Activity
Also listed as PSCI 4503.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4208 [0.5 credit]
Foreign Policies of Soviet Successor States
The foreign policies of the USSR and of Russia and selected other successor states, with special emphasis on the search for a new security order.
Also listed as PSCI 4601.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4209 [0.5 credit]
Politics of the Caucasus and Caspian Basin
Examination of the South Caucasus (Azerbaijan, Georgia, Armenia), the Russian-held North Caucasus, including Chechnya, and relations with Iran. Emphasis on state and society, oil and gas, transregional communications, interests of western powers, ethnic relations.
Includes: Experiential Learning Activity
Also listed as PSCI 4504.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Seminar three hours a week.

EURR 4302 [0.5 credit]
EU Summer Study Abroad
This course is open only to students in approved summer study options in Europe, particularly the EU Study Tour.
Includes: Experiential Learning Activity
Prerequisite(s): approval of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5302, for which additional credit is precluded.

EURR 4303 [0.5 credit]
Contemporary Europe: From Postwar to the European Union
History of contemporary Europe from 1945 to present covering both eastern and western halves of the continent and including social, cultural, political, and economic dimensions.
Includes: Experiential Learning Activity
Also listed as HIST 4606.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5303, for which additional credit is precluded.
Seminar three hours a week.

EURR 4304 [0.5 credit]
Europe and International Migration
Europe's role in international migration. Topics to be discussed may include migration and mobility as both assets and challenges for sending, transit, and destination countries, changing geographies of migration, inclusion and exclusion, political mobilization, and responses of European states and other actors.
Includes: Experiential Learning Activity
Also listed as HIST 4607.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5304, for which additional credit is precluded.
Seminar three hours a week.

EURR 4305 [0.5 credit]
Imperial Russia and the Russian Revolution
Examination of the expansion and downfall of tsarist Russia from the eighteenth century to the revolutionary era and the establishment of Bolshevik rule. Topics include the relationship between the monarchy and subject peoples, social and economic change, and daily life.
Includes: Experiential Learning Activity
Also listed as HIST 4607.
Precludes additional credit for EURR 4203.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5305, for which additional credit is precluded.
Seminar three hours a week.
EURR 4306 [0.5 credit]
The Soviet Union: Power and Culture
Examination of the rise of the Soviet Union to a global power and subsequent tensions that promoted its collapse. The course will analyze Stalinism, the Second World War, the Thaw, and Brezhnev and Gorbachev eras through the lens of the USSR’s citizens.
Includes: Experiential Learning Activity
Also listed as HIST 4608.
Precludes additional credit for EURR 4203.
Prerequisite(s): fourth-year Honours standing or permission of the Institute.
Also offered at the graduate level, with different requirements, as EURR 5306, for which additional credit is precluded.
Seminar three hours a week.

EURR 4704 [0.5 credit]
The Business Environment in Europe
The economic, political, legal, and cultural environment for doing business in the European Union and other regions in Europe. Patterns of foreign trade and investment, market characteristics, science and technology, regulation and European integration, and business culture.
Also listed as BUSI 4704.
Precludes additional credit for EURR 4006 (no longer offered), BUSI 4604 (no longer offered).
Prerequisite(s): third-year standing.
Seminar three hours a week.

EURR 4900 [1.0 credit]
Tutorial in European and Russian Studies
Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.
Prerequisite(s): permission of the Institute.

EURR 4901 [0.5 credit]
Tutorial in European and Russian Studies
Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.
Prerequisite(s): permission of the Institute.

EURR 4902 [0.5 credit]
Tutorial in European and Russian Studies
Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.
Prerequisite(s): permission of the Institute.

EURR 4908 [1.0 credit]
Honours Essay
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by the supervisor and a second reader. Students should consult with the Supervisor of Undergraduate Studies regarding the topic and supervisor. Institute’s Honours Essay guidelines apply.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing, a CGPA of 9.00 or higher in courses qualifying for credit in European and Russian Studies, and permission of the Institute.

Film Studies (FILM)

Film Studies (FILM) Courses

FILM 1101 [0.5 credit]
Introduction to Film Studies
Introduction to the study of film that emphasizes problems and methods of film analysis through the study of various types of films. Topics relating to the filmmaker, film genre, and film history are covered through a focus on questions of style and technique.
Precludes additional credit for FILM 1120, FILM 1000 (no longer offered), and FYSM 1510.
Lecture and screening three hours a week, discussion one hour a week.

FILM 1120 [0.5 credit]
Seminar in Film Studies
A seminar in the study of film that emphasizes problems and methods of film analysis through the study of a variety of types of films.
Precludes additional credit for FILM 1101, FILM 1000 (no longer offered) and FYSM 1510.
Prerequisite(s): enrolment in a Film Studies major.
Lecture and screening three hours a week, discussion one hour a week.

FILM 2001 [0.5 credit]
Film Theory and Analysis I
Introduction to major film theories and analytical practices. The objective of this course is to familiarize students with the main theories and methods of analysis that have been developed for the study of film.
Precludes additional credit for FILM 2000 (no longer offered).
Prerequisite(s): FILM 1101 or FILM 1120 and second-year standing; or permission of the Discipline.
Lecture and screening three hours a week, seminar one hour a week.
FILM 2002 [0.5 credit]
Film Theory and Analysis II
Building on the skills acquired in FILM 2001, this course considers specific debates in film theory, and provides students with advanced methods for film analysis. Precludes additional credit for FILM 2000 (no longer offered).
Prerequisite(s): FILM 1101 or FILM 1120, and FILM 2001, and second-year standing; or permission of the Discipline. Lecture and screening three hours a week, seminar one hour a week.

FILM 2101 [0.5 credit]
The Film Industry
The organization of the production, distribution and exhibition practices of various film industries. May include an examination of the relationship between a national film industry and its television industry.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2106 [0.5 credit]
The Documentary
An examination of the work of individual filmmakers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered. Also listed as JOUR 2106.
Precludes additional credit for FILM 2105 (no longer offered), JOUR 2105 (no longer offered).
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2201 [0.5 credit]
National Cinema
This course examines the film production of specific countries in order to determine the themes, the styles, and the character of a national cinema.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2202 [0.5 credit]
Japanese Cinema
Various practices and movements in the history of Japanese cinema, ranging from the silent era to the current digital age.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2203 [0.5 credit]
Scandinavian Cinema
The development of cinema culture and film production in the Scandinavian countries, from the golden age of Scandinavian silent cinema to contemporary Nordic noir. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2204 [0.5 credit]
Indigenous Cinema and Media
A critical examination of films and other audiovisual media created by Indigenous artists, such as independent films, genre films, documentaries, web series, installations, and video games.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Department. Lecture and screening three hours a week, lecture one hour a week.

FILM 2206 [0.5 credit]
Canadian Cinema
A critical examination of Canadian cinema and media and how it relates to other aspects of Canadian culture. Precludes additional credit for FILM 2207 (no longer offered), FILM 2208 (no longer offered), FILM 2209 (no longer offered).
Prerequisite(s): FILM 1101 or FILM 1120 or second-year standing; or permission of the Discipline. Lecture and screening three hours a week, seminar one hour a week.

FILM 2401 [0.5 credit]
Authorship in Film and Media
A detailed study of the themes, the characteristic style, development and influence of one or more directors.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2601 [0.5 credit]
Film Genres
This course examines questions of generic form, drawing examples from world cinema.
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.
FILM 2606 [0.5 credit]  
History of World Cinema I  
Historical survey of world cinema primarily from 1895 to 1945, examining the forms, structures and stylistic conventions of various periods and nations.  
Also listed as ENGL 2600.  
Precludes additional credit for FILM 2608 and ENGL 2608 (no longer offered).  
Prerequisite(s): FILM 1101 or FILM 1120, and second-year standing, or permission of the discipline.  
Lecture and screening three hours a week, lecture one hour a week.

FILM 2607 [0.5 credit]  
History of World Cinema II  
Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations.  
Also listed as ENGL 2601.  
Precludes additional credit for FILM 2608 and ENGL 2608 (no longer offered).  
Prerequisite(s): FILM 2606 or ENGL 2600 or permission of the discipline.  
Lecture and screening three hours a week, lecture one hour a week.

FILM 2801 [0.5 credit]  
Film and Media Practice I  
Introduction to the basic principles of film and media practice. Emphasis may change from year to year, focusing alternately on narrative, experimental, animation or documentary techniques. This course is intended for Film Studies majors only.  
Includes: Experiential Learning Activity  
Prerequisite(s): FILM 1101 or FILM 1120.  
Lecture/workshops four hours a week.

FILM 2809 [0.5 credit]  
The Video Game  
Introduction to the video game as a popular media form, an emerging aesthetic, and a social and cultural practice. Topics include: history of video games; game form; game industry; narrative; art and design; interactivity; theories of play.  
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, lecture one hour a week.

FILM 3105 [0.5 credit]  
Questions of Documentary Practice  
Theoretical implications of documentary film and documentary television practice.  
Also listed as JOUR 3105.  
Prerequisite(s): 1.0 credit in FILM at the 2000-level and third-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, lecture one hour a week.

FILM 3206 [0.5 credit]  
Topics in American Cinema  
Studies in various aspects of American cinema with emphasis on historical and critical issues.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, lecture one hour a week.

FILM 3209 [0.5 credit]  
Topics in Canadian Cinema  
Studies in various aspects of Canadian cinema. Topics may vary from year to year.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, lecture one hour a week.

FILM 3301 [0.5 credit]  
Topics in Cinema, Gender, and Sexuality  
A study of selected topics in gender and cinema with emphasis on critical and historical questions.  
Prerequisite(s): 1.0 credit in FILM at the 2000-level and third-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, lecture one hour a week.

FILM 3402 [0.5 credit]  
Film Music  
The use of music in film, from the silent era to the present day. Techniques, styles and theory of film music through the examination of selected scenes.  
Also listed as MUSI 3402.  
Lectures three hours a week, screening two hours a week.

FILM 3506 [0.5 credit]  
Topics in Film Theory  
Building on the skills acquired in FILM 2000, this course provides a critical study of advanced film theories. Topics may include aesthetics, ideological criticism, film and philosophy, and theories of technology and historiography.  
Precludes additional credit for FILM 3505 (no longer offered).  
Prerequisite(s): FILM 2001 and FILM 2002 and third-year standing; or permission of the Discipline.  
Lecture and screening three hours a week, lecture one hour a week.

FILM 3608 [0.5 credit]  
Topics in Film History  
Studies of aspects of the history of world cinema. Topics will vary from year to year and may include the examination of film movements, styles and genres, and/or comparative study of national, regional and/or world-wide trends.  
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, lecture one hour a week.
FILM 3609 [0.5 credit]  
African Cinema  
Major figures and movements in African cinema around such categories as the colonial, the anti-colonial, the postcolonial, the diasporic, the continental, race, Afro-futurism, and world cinema, interrogating in the process the very category of “African cinema”. Also listed as AFRI 3609. Prerequisite(s): 1.0 credit in FILM and third year standing or permission of instructor. Lecture and screening three hours a week, lecture one hour a week.

FILM 3701 [0.5 credit]  
Topics in Animation, Video, and Experimental Film  
A study of selected topics in animation, video or experimental film. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3800 [0.5 credit]  
Film/Video Archival or Curatorial Practice  
Consideration of topics in film/video archival or curatorial practice, including questions related to cultural policy, exhibition, conservation, and interrelationship of media. Students are expected to bear all travel and other costs arising from required visits to local facilities. Includes: Experiential Learning Activity. Precludes additional credit for FILM 4800 (no longer offered). Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3801 [0.5 credit]  
Film and Media Practice II  
Practical and conceptual approaches to film studies from the point of view of film and media practice. Emphasis may change from year to year, focusing alternately on narrative, experimental, animation or documentary techniques. Includes: Experiential Learning Activity Prerequisite(s): FILM 2001 and FILM 2801. Lecture/workshops four hours a week.

FILM 3808 [0.5 credit]  
Cinema and Technology  
The technological development of cinema. Topics may include advances in sound and colour processes, digital effects, exhibition technologies and new media. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3809 [0.5 credit]  
Analyzing Digital Media  
History, aesthetics, and theories of digital media and culture. Key concepts in digital media studies, including: digital cinema, interactive documentaries, viral videos, web series, emerging immersive platforms. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3810 [0.5 credit]  
Sound in Film and Media  
Questions related to sound in film and media such as: how is sound used to create narratives and emotions? How does sound affect our experience of actual and fictional worlds? Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3901 [0.5 credit]  
Topics in Film Studies  
Selected topics and issues not ordinarily treated in the third-year course program. Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3902 [0.5 credit]  
Screenwriting Workshop  
An intermediate workshop involving regular assignments in writing for film. Includes: Experiential Learning Activity Also listed as ENGL 3902. Prerequisite(s): a 2000-level creative writing workshop or permission of the instructor. Permission to register in this course requires the student to submit a portfolio. Instructions can be found at Carleton.ca/English. Workshop three hours a week.

FILM 4001 [0.5 credit]  
Research and Critical Methodologies  
Study of various methodologies for critical, theoretical and historical research in film studies. Precludes additional credit for FILM 4000 (no longer offered). Prerequisite(s): FILM 2002, 1.0 credit in FILM at the 3000-level, and fourth-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture two hours a week.
FILM 4002 [0.5 credit]
Topics in Moving Image Culture
Selected aspects of the audio-visual cultures of the late nineteenth and twentieth centuries.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.
Seminar three hours a week.

FILM 4201 [0.5 credit]
Selected Topics in National Cinemas
A study of a selected topic in national cinema.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.
Lecture and screening three hours a week, seminar two hours a week.

FILM 4203 [0.5 credit]
Film Festivals and World Cinema
Theoretical and critical study of the film festival as a phenomenon shaping our understanding of film culture, institutions, history and forms. Issues examined may include festivals as sites of cultural legitimation; as spectacle; their political economy; curation/programming; case studies of film festivals around the world.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.
Lecture and screening three hours a week, seminar two hours a week.

FILM 4301 [0.5 credit]
Topics in Film and Philosophy
Selected topics in philosophical approaches to the study of film, and an examination of the relations between film theory and philosophical aesthetics.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.
Also offered at the graduate level, with different requirements, as FILM 5109, for which additional credit is precluded.
Lecture and screening three hours a week, seminar two hours a week.

FILM 4401 [0.5 credit]
Selected Topics in Film Authorship
A study of questions of authorship in the cinema, concentrating on one or more filmmakers.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.
Lecture and screening three hours a week, seminar two hours a week.

FILM 4501 [0.5 credit]
Selected Topics in Film Theory
A study of a selected topic in film theory.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.
Lecture and screening three hours a week, seminar two hours a week.

FILM 4805 [0.5 credit]
Practicum in Film and Film Studies
Practical experience through working on specific projects under the supervision of staff at a museum, gallery, archive, or production company in the Ottawa area. A maximum of 0.5 credit Film Studies practica courses may be offered in fulfilment of Film Studies requirements. Graded SAT/UNS.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Film Studies, a CGPA of 9.00 or higher in Film Studies, and permission of the Discipline.

FILM 4901 [0.5 credit]
Special Topic
Selected topics in film studies not ordinarily available in the regular course program. The choice of topic or topics will vary at least every two years and will be announced well in advance of the registration period.
Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.
Screening three hours a week, seminar two hours a week.

FILM 4904 [0.5 credit]
Independent Study
For students who wish to study a specific topic. Proposed projects must be approved by the Program Committee. Written request outlining the project must be submitted by the first day of the term. An essay is the usual assignment. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Film Studies and a CGPA of 10.00 or higher in Film Studies.
Unscheduled.
First Year Seminar (FYSM) Courses

FYSM 1003 [1.0 credit]
Introduction to Economics
An introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation and international economic problems.
Precludes additional credit for ECON 1000, ECON 1001, and ECON 1002.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Econ. or B.G.In.S. program. This course is an intensive version of ECON 1000 geared to students seeking a more in-depth and interactive introduction to economics. Seminars three hours a week, tutorials one hour a week.

FYSM 1004 [1.0 credit]
Reading Literatures and Cultures
Introduction to active literary reading skills, focusing on at least three literary genres including poetry, prose, and drama, with attention to literary, social, historical, and political contexts. This course is writing attentive. Strongly recommended for English majors. Consult English Department website for annual topics. Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, and ENGL 1700.
Prerequisite(s): Normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1101 [1.0 credit]
Location is Everything
Where we live affects who we are. The role of geographic location and environment on human perception, behaviour, and well-being, viewed at scales ranging from local to global; methods of collecting and interpreting information about location.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1104 [1.0 credit]
Human Rights: Issues and Investigations
Arguments that have been used to defend differing positions on rights issues, past and present. The validity of contending arguments; social factors influencing widespread acceptance of popular views.
Includes: Experiential Learning Activity
Precludes additional credit for HUMR 1001.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar and discussion groups three hours a week.

FYSM 1105 [1.0 credit]
Reading the Web
Academic writing and study skills through examination of the literacy and social interaction required for various media. Reading and writing on and for the Web and other forms of computer-mediated communications and cooperative work compared with writing for academic purposes.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours a week.

FYSM 1106 [1.0 credit]
Issues in Classics
An investigation of important issues relating to the Greek and Roman worlds. Themes will be drawn from literature, history, art, religion and social life. All texts are in English. Precludes additional credit for CLCV 1000 (no longer offered).
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1107 [1.0 credit]
Social Justice and the City
Struggles over social and economic inequality in the city, and their relationship to processes of urbanization and global change. Theories and case studies explaining how urban lives and form are shaped by social movements and urban politics. Broad introduction to critical urban geography.
Includes: Experiential Learning Activity
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1108 [0.5 credit]
Sustainable Environments
The causes and consequences of environmental change; emphasis on the interactions of nature and human behaviour. Ways in which the environment can be protected and restored. Environmental issues that affect our own communities.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1204 [1.0 credit]
Language and Identity
The creation and expression of social identities through language: gender, age, ethnic and social background.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Lectures three hours a week.
FYSM 1205 [1.0 credit]
Language and Power
The role of language in maintaining and contesting power relations in domains such as the media, education, advertising, and politics. How meanings are made and exchanged through language in different situations. Precludes additional credit for ALDS 2705.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Lectures three hours a week.

FYSM 1210 [0.5 credit]
Special Topics in Philosophy
Selected topics in the study of philosophy. Topics offered may vary from year to year and will be announced in advance of the registration period by the Department of Philosophy.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B. Econ., or B.G.In.S. program.
Seminars three hours per week.

FYSM 1211 [0.5 credit]
Looking at Philosophy
An examination of the following: What is logical thinking? Does God exist? Are values relative? Do we have responsibilities? What is a just society? Do we have free will? What is the mind? What is the nature of reality? Precludes additional credit for FYSM 1208 (no longer offered), PHIL 1000 and PHIL 1100.
Seminars three hours per week.

FYSM 1212 [0.5 credit]
Contemporary Moral, Social, and Religious Issues
Philosophical problems associated with such topical issues as feminist, critical race and disability theories; atheism vs. theism; the meaning of life; moral relativism vs. moral objectivism; egoistic vs. non-egoistic ethics; euthanasia, abortion, capital punishment and environmental ethics; legal paternalism; freedom of the will. Precludes additional credit for FYSM 1209 (no longer offered), PHIL 1500 and PHIL 1150.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours per week.

FYSM 1217 [0.5 credit]
Selected Topics in Communication and Media Studies
Introductory communication and media studies seminar. Topics offered may vary from year to year and will be announced in advance of the registration period by the Communication and Media Studies program.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. (This course is not the equivalent of COMS 1000).
Seminar three hours a week.

FYSM 1300 [1.0 credit]
History of Philosophy
The major figures and developments in philosophy from the early Greeks to the present. A primarily descriptive and comparative approach, through critical reasoning is included for comprehending philosophic development. Provides a background from which to understand the philosophical aspects of other disciplines. Precludes additional credit for PHIL 1600.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours a week.

FYSM 1306 [1.0 credit]
Diversity in Psychological World Views
Theories, research and applications of psychology from the perspective of different cultures and sub-cultures. The validity of psychology across society; how it defines and changes people, and how it reflects and engineers particular social values and norms. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.
Seminars three hours a week.

FYSM 1307 [1.0 credit]
Psychology and Criminal Justice
Theories, research, and practical applications of psychology to the criminal justice system. Topics may include eyewitness testimony, prediction of violence, classification and rehabilitation of offenders, victim studies, and judicial decision making.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.
Seminars three hours a week.

FYSM 1308 [1.0 credit]
Motivating Humans
The psychology of human motivation. Everyday concepts such as laziness in relation to diverse theories and explanations of motivation such as drive-reduction, sociobiology, personal goals, self-actualization and spiritual awareness.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.
Seminars three hours a week.

FYSM 1310 [1.0 credit]
Selected Topics in Psychology
Psychology is the scientific study of our thoughts, feelings and behavior. Course examines a selected topic in psychology. The specific topic will vary from year to year and will be announced in advance of the registration period.
Prerequisite(s): normally restricted to students entering the first year of a B.A, B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.
Seminars three hours a week.
FYSM 1400 [1.0 credit]
Cognition: A Scientific Exploration of the Mind
Theories, research, and applications of Cognitive Psychology. Research projects will familiarize students with the scientific method used to study pattern recognition, attention, memory, language and thinking. Prerequisite(s): normally restricted to students entering the first year of a B.A, B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1401 [1.0 credit]
Multiculturalism in Canada
Issues relating to the development of and interaction among cultural communities, with major emphasis on the realities of "doing multiculturalism in Canada." Research teams: organized seminars with volunteers from Canadian cultural and community groups. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1402 [1.0 credit]
Issues in Women's and Gender Studies
Emphasis on the development of writing, research and analytical skills through the intensive examination of selected topics in women's studies (e.g. popular culture, media, representation and identity, communications, women's writing, motherhood, sexuality, health, technology, law, politics). Specific themes will vary from year to year. Precludes additional credit for WGST 1808. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1405 [1.0 credit]
Selected Topics in History
Examination of a selected historical topic in a small-class setting. The development of writing, research, analytical, and oral communication skills necessary for success in upper-level university courses is emphasized. Topics will vary from year to year. (Field will depend on topic). Prerequisite(s): normally restricted to students entering the first year of a B.A, B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1406 [1.0 credit]
How Ottawa Works: Exploring National Institutions
The fundamental political, judicial and administrative institutions that made Canada a unique nation. Students will learn how government institutions are dealing with preservation and maintenance of Canadian cultural and social values. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1408 [1.0 credit]
French on the World Stage
An introduction to the diversity of the French language and of French-language literatures and cultures throughout the francophone world, including Europe, Canada, the Caribbean, Africa and the Middle East. The course is conducted in French. For French majors and students who have completed the placement. Prerequisite(s): normally restricted to students entering the first year of B.A, B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1409 [1.0 credit]
Social Change in Canada
Interdisciplinary analysis of social change and how people change Canada, through an examination of movements like environmentalism, feminism, peace, and antiracism. Examination of broader efforts to reshape Canadian society, including culture-jamming and change through popular culture. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1501 [1.0 credit]
The Study of Religions
Inquiries into the nature of religion and its interpretation, or a specific religious theme or a period of religious history. Specific topics will vary from year to year. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1502 [1.0 credit]
Selected Topics in Legal Studies
Selected topics in legal studies. Course offerings for the current year are listed at: carleton.ca/first-year-seminars. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1503 [1.0 credit]
Contemporary Culture in Everyday Life
The role of contemporary cultural forms in everyday life. Focus on the culture/power relationship with attention to the ways that popular forms such as television, film, music, and tourism facilitate or work against the cultural and economic interests of different societal groups. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.
FYSM 1504 [1.0 credit]
Society and the Designed Environment
Inquiry into the relation between human societies and the material environment which they inhabit and use. Focus is on the ways in which groups create the environments in which they live and the ways in which those environments influence and reproduce the groups.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours a week.

FYSM 1505 [1.0 credit]
Introduction to Applied Sociology
Survey of the historic and contemporary contributions of Sociology to various applied fields, which may include official statistics, policy studies, consumer research, and workplace management. Focus on the philosophical, professional, and ethical distinctions between scholarly and applied sociology.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours a week.

FYSM 1506 [1.0 credit]
Topics in the Study of Societies
Introductory seminar emphasizing the development of writing, research and analytical skills through the intensive examination of selected topics in the study of historic and contemporary societies.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminar three hours a week.

FYSM 1508 [1.0 credit]
Stress, Coping and Well-being
How do you cope with stress? We live in a stressful world, and how we cope has implications for our happiness and well-being. We will examine theory and research on how stress affects our lives, how people cope, and what it means to be well-adjusted.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.
Seminars three hours a week.

FYSM 1509 [1.0 credit]
Special Studies in Art History, Film Studies and/or Music
Topics and focus to be determined on a yearly basis. Includes: Experiential Learning Activity
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours a week.

FYSM 1510 [1.0 credit]
Moving Image and Sound
Introduction to the discipline of film studies through an examination of mise-en-scène, editing, cinematography, and sound in a selection of important films. Emphasis on the critical vocabulary needed for analysis of motion pictures and other audiovisual media.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Lecture and screening three hours a week.

FYSM 1511 [0.5 credit]
Special Studies in Art History, Film Studies and/or Music
Topics and focus to be determined on a yearly basis. Includes: Experiential Learning Activity
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminar three hours a week.

FYSM 1600 [1.0 credit]
Contemporary Controversies in Canadian Society
An interdisciplinary exploration of key debates that currently affect Canadian society and culture. Topics may include: nationalism, race, language and ethnicity, sexuality, gender, Aboriginal governance, globalization, the environment, and human rights.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminar three hours a week.

FYSM 1602 [1.0 credit]
Selected Topics in Political Science
Selected topics in politics and governance. Topics offered may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.
Seminar three hours a week.

FYSM 1603 [1.0 credit]
Full-Year Seminar in European and Russian Studies
Topics offered may vary from year to year and will be announced in advance of the registration period by the Institute of European, Russian, and Eurasian Studies.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminar three hours a week.
FYSM 1607 [1.0 credit]
Cognitive Science: Thinking and Knowing
Interdisciplinary examination of discoveries in linguistics, psychology, philosophy, and computer science concerning the question “What is cognition”? Issues may include the mind-brain controversy, the role of language in thought, and artificial versus natural intelligence.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Classes and seminars three hours a week.

FYSM 1608 [1.0 credit]
Selected Topics in Economics
Content of this course may vary from year to year and will be announced in advance of the registration period by the Department of Economics.
Prerequisite(s): normally restricted to students entering the first year of a B.Econ., B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours a week.

FYSM 1609 [1.0 credit]
Integrated Studies in Public Affairs and Management
An integrated multidisciplinary exploration of a topic of interest to disciplines within the Faculty of Public Affairs offering Bachelor of Arts programs.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Lecture one and a half hours a week, seminar two hours a week.

FYSM 1610 [1.0 credit]
Understanding Environmental Discourse
An examination of how language and other symbol systems are used to portray and make arguments about ecology and the global environment, with a particular focus on climate change.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours a week.

FYSM 1611 [0.5 credit]
One-Term Seminar in Political Science
One-term seminar on selected topics in politics and governance. Topics offered may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.
Precludes additional credit for FYSM 1602.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminar three hours a week.

FYSM 1614 [0.5 credit]
One-Term Seminar in European and Russian Studies
Topics offered may vary from year to year and will be announced in advance of the registration period by the Institute of European, Russian, and Eurasian Studies.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminar three hours a week.

FYSM 1700 [0.5 credit]
Connecting Academics to Careers in Public Affairs
An introduction to public affairs work and working life, and the development of skills and opportunities for students to plan their university courses and programs of study to connect to a career in public affairs.
Seminar three hours a week.

FYSM 1900 [1.0 credit]
Selected Topics In the Study of Academic Discourses
Introductory seminar emphasizing the development of academic writing, research and analytical skills through the intensive examination of a selected topic in the instructor’s field of expertise. Specific topics vary from section to section each year.
Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1605.
Prerequisite(s): enrolment in the Enriched Support Program.
Seminar three hours a week.

FYSM 1901 [1.0 credit]
Selected Topics in African Studies
Selected topics in the study of Africa. Topics offered may vary from year to year and will be announced in advance of the registration period by the Institute of African Studies.
Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminar three hours a week.

FYSM 1908 [0.5 credit]
One-Term Seminar in Economics
Content of this course may vary from year to year and will be announced in advance of the registration period by the Department of Economics.
Prerequisite(s): normally restricted to students entering the first year of a B.Econ., B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.
Seminars three hours a week.

Food Science (FOOD)

Food Science (FOOD) Courses

FOOD 1001 [0.5 credit]
Introduction to Food Science
Overview of the food industry. Production, processing, product development, packaging, chemistry, analysis, microbiology. Elements risk assessment, policy making and regulation.
Lectures three hours a week.
FOOD 2001 [0.5 credit]
Principles of Nutrition
Roles of nutrients, lipids, proteins, carbohydrates, fluids and electrolytes. Digestion, absorption, transport, energy metabolism. Disorders including diabetes, cardiovascular disease and osteoporosis. Nutrition through the life cycle. Prerequisite(s): CHEM 1002, BIOL 1103.
Lectures three hours a week.

FOOD 2002 [0.5 credit]
Food Processing
Principles of major techniques used in food processing and preservation. Processing of specific food groups including cereals, oilseeds, dairy, beverages and frozen foods. Effects of processing on physico-chemical, rheological, and sensory characteristics. Role of research and development in food industry. Prerequisite(s): FOOD 1001.
Lectures three hours a week.

FOOD 2003 [0.5 credit]
Regulation of the Canadian Food Industry
Regulation of the Canadian food industry including regulators, regulatory powers, the process of enacting laws/regulation and food safety requirements. Food composition, standardization, advertising, labeling, packaging, ingredients, additives, and fortification requirements. Inspection, enforcement and compliance powers and policies. Prerequisite(s): Second year standing. Lectures three hours per week.

FOOD 2004 [0.5 credit]
Scientific Communication in Food Science
Principles of effective scientific communication for scientific and non-scientific audiences. Applicable to laboratory reports, literature reviews, posters, presentations, and briefing notes. Includes: Experiential Learning Activity Prerequisite(s): FOOD 1001 and second-year standing in Food Science or Chemistry. Workshop four hours a week.

FOOD 3001 [0.5 credit]
Food Chemistry
Chemistry of the major components of foods such as proteins, lipids, carbohydrates and of the minor components such as enzymes, vitamins and various additives and their relationships to food stability and degradation. Includes: Experiential Learning Activity Prerequisite(s): FOOD 1001, FOOD 2001, CHEM 2204, BIOC 2200.
Lectures three hours a week and laboratory three hours a week.

FOOD 3002 [0.5 credit]
Food Analysis
In-depth principles and practices of food proximate analysis. Introductory concepts of food adulteration and detection. Major techniques such as chromatography, colorimetry, spectroscopy, rheology. Includes: Experiential Learning Activity Prerequisite(s): FOOD 1001, FOOD 2001, FOOD 3001.
Lectures three hours a week, laboratory three hours a week.

FOOD 3003 [0.5 credit]
Food Packaging and Shelf Life
An introduction to the materials used for food packaging, including their chemical and physical characteristics. Interactions of these materials with food products, and their effects on shelf life of food. Prerequisite(s): FOOD 2002.
Lectures three hours a week.

FOOD 3004 [0.5 credit]
Food Engineering
Principles of food engineering. Unit operation in food processing, heat and mass transfer, material balances, fluid mechanics. Prerequisite(s): FOOD 2002 and MATH 1007.
Lectures three hours a week.

FOOD 3005 [0.5 credit]
Food Microbiology
Foodborne diseases, microbial growth and survival, food spoilage, food fermentation. Techniques for detecting and quantifying microorganisms in foods. Includes: Experiential Learning Activity Prerequisite(s): FOOD 1001, FOOD 2001, BIOL 2303.
Lectures three hours a week, laboratory three hours a week.

FOOD 3999 [0.0 credit]
Co-operative Work Term
Provides practical experience for students enrolled in the Co-operative option. Students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns. Includes: Experiential Learning Activity Prerequisite(s): Registration in the Food Science Co-operative Education option and permission of the Department.
Work term.
FOOD 4001 [0.5 credit]  
**Food Quality Control**  
Factors affecting quality in manufacturing and processing of foods and principles of quality control and quality assurance. Sampling plans and statistical methods. Applications of physical, chemical, biological and microbiological tests in quality control. Quality systems and standards.  
Prerequisite(s): FOOD 2002, FOOD 2003, and third or fourth year standing.  
Also offered at the graduate level, with different requirements, as FOOD 5104, for which additional credit is precluded.  
Lectures three hours a week.

FOOD 4002 [0.5 credit]  
**Analysis of Food Contaminants**  
Official methods to identify food contaminants and adulterated foods. Includes agricultural chemicals, veterinary drugs, toxins, metals, and allergens. Interpretation of results in the context of current Canadian and international food safety regulations.  
Includes: Experiential Learning Activity  
Prerequisite(s): BIOC 3101 or CHEM 3205 or CHEM 3305, and third or fourth year standing.  
Laboratory four hours per week, tutorial one hour a week.

FOOD 4102 [0.5 credit]  
**Current Issues in Canadian Food Governance, Regulation and Policy**  
Focus on the ever-changing and evolving issues in Canadian food governance, regulation and policy. Topical food safety, governance, policies, enforcement, trade and import/export issues and developments.  
Prerequisite(s): FOOD 2003, and third or fourth year standing.  
Lectures three hours a week.

FOOD 4103 [0.5 credit]  
**Food Safety Risk Assessment**  
The role of risk management in providing science-based approaches to solving food safety problems. Risk management models and practical applications in critical risk management. An examination of actual risk assessments. Risk communication is addressed.  
Prerequisite(s): BIOC 3101, and third or fourth-year standing.  
Lectures three hours a week.

FOOD 4201 [0.5 credit]  
**Advanced Nutrition and Metabolism**  
Metabolism of macronutrients in the human body. Detailed catabolic and anabolic reactions of carbohydrates, lipids and proteins. Regulatory control points in healthy and diseased states. Discussion of the literature pertaining to nutrition, metabolism and chronic disease.  
Prerequisite(s): FOOD 2001, BIOC 3101 and fourth year standing.  
Also offered at the graduate level, with different requirements, as FOOD 5101, for which additional credit is precluded.  
Lectures three hours a week.

FOOD 4202 [0.5 credit]  
**Micronutrients and Health**  
Animal and plant-based sources of micronutrients. Metabolism of vitamins and minerals in the human body and associated diseases throughout the life cycle. Micronutrient supplementation to promote human health.  
Prerequisite(s): BIOC 2200 or BIOL 2200 and third or fourth year standing.  
Lectures three hours a week.

FOOD 4203 [0.5 credit]  
**Functional Foods and Natural Health Products**  
Study of the bioactive components of functional foods and natural health products, for the improvement of health and nutrition. Sources and chemistry of bioactives, mechanisms of actions, process technology, efficacy and safety. Role of research and development in industry in commercialization of new products.  
Prerequisite(s): BIOC 2200 or BIOL 2200 or BIOL 2201, and third or fourth year standing.  
Also offered at the graduate level, with different requirements, as FOOD 5105, for which additional credit is precluded.  
Lectures three hours a week.

FOOD 4301 [0.5 credit]  
**Food Toxicology**  
Principles of toxicology as they apply to endogenous plant toxicants, endogenous animal poisons, mycotoxins, pesticide residues, veterinary drugs, food additives, heavy metals, and toxicants produced as a result of processing.  
Prerequisite(s): BIOC 3101, FOOD 3001 and fourth-year standing in Food Science.  
Lectures three hours a week.

FOOD 4905 [1.0 credit]  
**Food Science Honours Workshop**  
Active learning in areas that include information literacy, critical evaluation of scientific literature, written and oral communication, evaluation and interpretation of results, statistics and data management. Emphasizes transferable skills that are most appropriate for non-research career paths.  
Includes: Experiential Learning Activity  
Precludes additional credit for FOOD 4907, FOOD 4908.  
Prerequisite(s): Fourth-year standing in Food Science and a minimum of 1.5 credits in FOOD at the 3000 level.  
Workshop three hours a week.
FOOD 4907 [1.0 credit]
Food Science Honours Essay and Research Proposal
Students conduct an independent research study using library resources, and prepare a critical review and study proposal on a topic approved by a faculty supervisor. A written report and an oral poster presentation of the work are required before a grade can be assigned.
Includes: Experiential Learning Activity
Precludes additional credit for FOOD 4905, FOOD 4908, CHEM 4907 and CHEM 4908.
Prerequisite(s): Fourth-year standing in the Food Science program, a minimum of 1.5 credits in FOOD at the 3000 level, minimum Major CGPA of 8.0, and permission of the department.

FOOD 4908 [1.0 credit]
Food Science Research Project
Students in Food Science carry out a research project under the direction of a faculty member. A written report and an oral presentation of the work are required before a grade can be assigned.
Includes: Experiential Learning Activity
Precludes additional credit for FOOD 4905, FOOD 4907, CHEM 4907 and CHEM 4908.
Prerequisite(s): Fourth-year standing in the Food Science program, a minimum of 1.5 credits in FOOD at the 3000 level, minimum Major CGPA of 8.0, and permission of the department.
Laboratory and associated work equivalent to at least eight hours per week for two terms.

French (FREN)

French (FREN) Courses

French Placement for Language Students
Students who have not previously taken a course in the French Department must complete the Placement Test on Carleton Central before registering, as per instructions received through their Carleton e-mail account. Students should note that they cannot go backward in a sequence of levels in language courses.

Students desiring a French credit to satisfy the language requirement of their department or school should consult that department or school.

FREN 1001 [1.0 credit]
French 1
This course is designed for absolute beginners in the language. Classes use audio-visual methods, and emphasis is given to the spoken language. Introduction to reading and writing. Compulsory attendance. Limited enrolment. No auditors. Oral interaction required.
Prerequisite(s): placement test on Carleton Central before registering.
Lecture three hours a week.

FREN 1002 [1.0 credit]
French 2
Taught in French for students who have had exposure to French but who have difficulty using it in day-to-day communication. Emphasis on oral expression and comprehension; development of reading and writing skills. Oral practice, presentations, interviews, cultural activities, grammar. Compulsory attendance, participation. Oral interaction required.
Prerequisite(s): Grade of C or higher in FREN 1001 or placement test on Carleton Central before registering.
Lecture three hours a week.

FREN 1100 [1.0 credit]
French 3
Taught in French. Emphasis on speaking, listening, reading and writing skills. Oral presentations, discussions, interviews, reading of novels and magazine articles, listening activities, grammar exercises, compositions. Attendance and participation are compulsory. Limited enrolment. No auditors. Oral interaction required.
Precludes additional credit for FREN 1110.
Prerequisite(s): Grade of C or higher in FREN 1002 or placement test on Carleton Central before registering.
Lecture three hours a week.

FREN 1110 [1.0 credit]
French 3: Writing
Taught in French. For students with low intermediate writing skills in French. Improvement of spelling, grammar, sentence-structure and vocabulary. Study of the processes involved in the production of a variety of texts. Introduction to the use of references. Self-correction. Attendance, participation compulsory. Oral interaction required.
Precludes additional credit for FREN 1100.
Prerequisite(s): Grade of C or higher in FREN 1002 or placement test on Carleton Central before registering.
Lecture three hours a week.

FREN 2100 [1.0 credit]
French 4
Taught in French. For non-francophone students. Advanced speaking, listening, reading and writing skills. Advanced level reading from various sources, including literary texts. Grammar exercises, essays, oral presentations. Attendance and participation are compulsory. Limited enrolment. No auditors. Oral interaction required.
Precludes additional credit for FREN 2110.
Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering.
Cours trois heures par semaine.
FREN 2110 [1.0 credit]
French 4: Writing
Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering. First week: compulsory placement. Limited enrolment. No auditors.
Cours trois heures par semaine.

FREN 2202 [0.5 credit]
Introduction aux études littéraires 1
Survol historique des littératures d'expression française : principaux auteurs, grands mouvements, évolution des genres. Initiation aux méthodes et notions d'analyse littéraire.
Precludes additional credit for FREN 2201.
Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.
Cours trois heures par semaine.

FREN 2203 [0.5 credit]
Introduction aux études littéraires 2
Survol historique des littératures d'expression française au Québec et au Canada : principaux auteurs, grands mouvements, évolution des genres. Initiation aux méthodes et notions d'analyse littéraire.
Precludes additional credit for FREN 2201.
Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.
Cours trois heures par semaine.

FREN 2401 [1.0 credit]
Introduction à la linguistique française
Étude de la structure et du fonctionnement du système linguistique à travers l'analyse de données du français (de France et du Canada). La construction du sens, des sons au discours; code oral et écrit.
Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.
Cours trois heures par semaine.

FREN 2701 [0.5 credit]
Travaux pratiques en français oral
Travaux pratiques pour développer l’aisance et la fluidité dans l’expression orale. This course is not suitable for francophones.
Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering.
Cours trois heures par semaine.

FREN 3050 [0.5 credit]
Compétences critiques
Initiation aux techniques et pratiques de la réflexion universitaire : documentation (bibliothèque, bases de données, bibliographies critiques), lecture (analyse, synthèse et évaluation critique de textes de savoir) et réflexion (cadre théorique, méthode d’analyse, pratique du discours raisonné).
Prerequisite(s): FREN 2202, FREN 2203 and FREN 2401, or permission of the Department.
Cours trois heures par semaine.

FREN 3060 [0.5 credit]
Perfectionnement de la grammaire par la pratique
Analyse et pratique réfléchie des formes de la grammaire dans le discours: Structures des phrases, marques d’accord, concordance des temps, prépositions et compléments, homonymie et homographie, faux amis et anglicismes. Développement des techniques efficaces d’autocorrection et maîtrise d’outils informatisés.
Prerequisite(s): FREN 2202 and FREN 2203 or FREN 2401, or permission of the Department.
Cours trois heures par semaine.

FREN 3212 [0.5 credit]
Des manuscrits aux belles-lettres : de la littérature médiévale à l’humanisme
Étude d’une sélection de textes, tirés de divers genres, permettant d’explorer les origines de la littérature française : oralité et écriture; chansons de geste; courtoisie; récits de voyages; littérature de la cour; humanisme. Différentes approches théoriques du texte littéraire.
Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.
Cours trois heures par semaine.

FREN 3213 [0.5 credit]
Du Baroque aux Lumières
Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.
Cours trois heures par semaine.

FREN 3214 [0.5 credit]
Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950
Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.
Cours trois heures par semaine.
FREN 3215 [0.5 credit]
Les ères du soupçon : contemporanéités de la littérature
Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.
Cours trois heures par semaine.

FREN 3216 [0.5 credit]
Problématique littéraire
Étude approfondie d’une problématique dans le champ des études littéraires. Lectures critiques, réflexion théorique et études d’œuvres littéraires. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.
Cours trois heures par semaine.

FREN 3217 [0.5 credit]
Œuvre et auteur-e(s)
Étude approfondie d’un(e) auteur(e) ou groupe d’auteur(e)s et de leur œuvre. Lectures critiques, théoriques et littéraires. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.
Cours trois heures par semaine.

FREN 3218 [0.5 credit]
Genre et mouvement
Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.
Cours trois heures par semaine.

FREN 3251 [0.5 credit]
Introduction aux méthodes d’analyse littéraire
Présentation et application de diverses approches théoriques du texte littéraire ou étude approfondie d’une approche théorique particulière (analyses structurelles, méthodes d’interprétation, contextualisation sociohistorique, poétique, etc.).
Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.
Cours trois heures par semaine.

FREN 3411 [0.5 credit]
Phonétique et phonologie du français
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3412 [0.5 credit]
Morphologie du français
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3413 [0.5 credit]
Syntaxe du français
Études de la structure et des composantes de la phrase: mots et syntagmes. Analyse syntaxique de la phrase simple et complexe. Modèle hiérarchique de l’organisation de la phrase.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3414 [0.5 credit]
Sociolinguistique du français
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3415 [0.5 credit]
Histoire du français
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.
FREN 3416 [0.5 credit]
Le français dans le monde
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3417 [0.5 credit]
Le français au Canada
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3451 [0.5 credit]
Thème en linguistique
Étude d’un thème particulier en linguistique française. Le contenu varie selon l’année. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3511 [0.5 credit]
Expression écrite et traduction
Perfectionnement de l’expression écrite au moyen d’un apprentissage appliqué de la traduction. Analyses des principales interférences syntaxiques, sémantiques et discursives entre le français et l’anglais. Approfondissement des pratiques de textualisation: cohérence et cohésion, idiomatisation, registres, paraphrase, considérations stylistiques, etc. Approche privilégiant le texte pragmatique.
Prerequisite(s): one FREN course at the 2000-level, or permission of the Department.
Cours trois heures par semaine.

FREN 3701 [0.5 credit]
Français oral
Techniques avancées d’expression orale. This course is not suitable for francophones.
Prerequisite(s): one FREN course at the 2000 level, or permission of the Department.
Cours trois heures par semaine.

FREN 3702 [0.5 credit]
Français écrit
Techniques avancées d’expression écrite.
Prerequisite(s): one FREN course at the 2000-level, or permission of the Department.
Cours trois heures par semaine.
FREN 4214 [0.5 credit]
Genre et mouvement
Étude approfondie d'un thème, d'un mouvement, d'un genre dans le champ littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5214, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4215 [0.5 credit]
Problématiques contemporaines
Étude de questions contemporaines dans le domaine littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5215, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4300 [0.5 credit]
Experiential learning in French and Francophone studies
Topics in French language, literature or linguistics. Application of language skills in a francophone context. Topic and location may vary; consult Departmental website. Includes: Experiential Learning Activity Also offered at the graduate level, with different requirements, as FREN 5501, for which additional credit is precluded.

FREN 4412 [0.5 credit]
Diversité du français
Études des variétés du français, dans ses dimensions spatiales. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Also listed as LING 4412. Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4413 [0.5 credit]
Diachronie du français
Étude du français, dans ses dimensions historiques. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Also listed as LING 4413. Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4414 [0.5 credit]
Analyse du français
Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Also listed as LING 4414. Prerequisite(s): FREN 2401 and FREN 3050, or permission of the department. Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4415 [0.5 credit]
Variation du français
Étude des variations internes de la langue, dans ses dimensions orales et écrites. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Also listed as LING 4415. Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4511 [0.5 credit]
Traduction : méthodologie et pratique
Initiation à différents principes et approches méthodologiques de la traduction. Analyse de texte appliquée à la traduction, repérage raisonné des difficultés, typologie des fautes de traduction, étude de divers procédés, documentation, terminologie et révision. Approche privilégiant une typologie textuelle variée. Prerequisite(s): FREN 3511 or permission of the Department. Cours trois heures par semaine.

FREN 4801 [1.0 credit]
Tutorial A
Special topics in an aspect of French studies under the supervision of a faculty member. Prerequisite(s): fourth-year standing or permission of the Department. Hours to be determined.
FREN 4802 [0.5 credit]
Tutorial B
Special topics in an aspect of French studies under the supervision of a faculty member.
Prerequisite(s): fourth-year standing or permission of the Department.
Hours to be determined.

FREN 4900 [0.5 credit]
Thème choisi en apprentissage et enseignement du français langue seconde
Prerequisite(s): fourth-year standing or permission of the Department.
Cours trois heures par semaine.

French Interdisciplinary Studies (FINS)

French Interdisciplinary Studies (FINS) Courses
These courses are intended to meet the needs of a broad range of students who are interested in expanding their knowledge of the French-language presence in other disciplines, or in improving their passive knowledge of written and spoken French (reading and listening) with a view to applying this knowledge in other disciplines.

Some FINS courses are offered with English as the language of instruction.

French Placement for Language Students
Students who have not previously taken a course in the French Department must complete the Placement Test on Carleton Central before registering as per instructions received through their Carleton e-mail account. Students should note that they cannot go backward in a sequence of levels in language courses. Students desiring a French credit to satisfy the language requirement of their department or school should consult that department or school.

FINS 2105 [0.5 credit]
French Reading I
Development of reading skills, especially relating to academic texts. Basic French grammar and vocabulary. Given in English. Open to beginners. No auditors.
Precludes additional credit for FREN 1006.
Prerequisite(s): permission of the Department.
Offered online. Equivalent to a weekly three-hour course, available all week.

FINS 2205 [0.5 credit]
Oral Comprehension I
Training in basic comprehension of spoken French, through the study of selected and edited video and audio material. Oral documents in French; analyses, discussion, reporting and testing in English. No auditors.
Prerequisite(s): permission of the Department.

FINS 2510 [0.5 credit]
Introduction to Québec Society (English version)
This course surveys geographical, historical, demographic, cultural, political and social developments in Québec, relations with English Canada and debates on identity and nationalism. This course is also offered in French as CDNS 2511/FINS 2511.
Also listed as CDNS 2510.
Precludes additional credit for CDNS 2511/FINS 2511.
Prerequisite(s): second-year standing or permission of the Department.
Lectures/groups three hours a week.

FINS 2511 [0.5 credit]
Introduction à la société et à la culture québécoises (version française)
Ce cours exclusivement en ligne permettra de découvrir et d’analyser des référents dominants de la trame historique du Québec de même que les débats entourant l’identité et le nationalisme et les relations avec le Canada anglais. Also listed as CDNS 2510/FINS 2510 (in English), CDNS 2511.
Precludes additional credit for CDNS 2510 and FINS 2510.
Prerequisite(s): niveau de deuxième année ou permission de L’École d’études canadiennes.
Exclusivement en ligne. Équivalent d’un cours de trois heures par semaine, accessible toute la semaine.

FINS 3105 [0.5 credit]
French Reading II
Reading knowledge for academic purposes. Advanced reading strategies. Individual reading in the student's specialization. Given in English. No auditors.
Precludes additional credit for FREN 1006.
Prerequisite(s): FINS 2105 or permission of the Department.
Offered online. Equivalent to a weekly three-hour course, available all week.

FINS 3205 [0.5 credit]
Oral Comprehension II
Advanced training and practice in the comprehension of authentic oral materials in French. Individual assignments in the student's specialization. Oral documents in French; analysis, discussion, reporting and testing in English and French. No auditors.
Prerequisite(s): FINS 2205 or permission of the Department.
FINS 3405 [0.5 credit]
French for Special or Professional Purposes I
Topics may vary from year to year. Consult the Web site.
Prerequisite(s): permission of the Department.

FINS 3406 [0.5 credit]
French for Special or Professional Purposes II
Topics may vary from year to year. Consult the Web site.
Prerequisite(s): permission of the Department.

FINS 3407 [0.5 credit]
French for Special or Professional Purposes III
Topics may vary from year to year. Consult the Web site.
Prerequisite(s): permission of the Department.

FINS 3550 [0.5 credit]
Interfaces between English and French Canadian Cultures
Exploration of intercultural encounters between French and English Canadians in political, popular and “official” cultures, through an examination of media, art, music, literature, cinema and the built environment.
Also listed as CDNS 3550.
Precludes additional credit for FINS 2500 and CDNS 2500.
Prerequisite(s): third-year standing or permission of the Department.
Seminar three hours a week.

FINS 3801 [0.5 credit]
Selected Topics in French A
Students may take a third-year course offered in the Department of French while submitting course work in English. This course does not count towards any degree program in French.
Prerequisite(s): third-year standing and permission of the Department.
Hours to be determined.

FINS 4510 [0.5 credit]
Québec Studies
Advanced seminar focusing on selected aspects of Québec history, society, culture and/or politics.
Also listed as CDNS 4510.
Precludes additional credit for CDNS 3510 or FINS 3510.
Prerequisite(s): fourth-year standing and CDNS 3500, FINS 3500 or permission of the Department.
Seminar three hours a week.

FINS 4801 [0.5 credit]
Selected Topics in French A
Students may take a fourth- or fifth-year special topic seminar offered in the Department of French while submitting written work in English. This course does not count towards credit in any degree program in French.
Prerequisite(s): fourth-year standing or permission of the Department.
Hours to be determined.

FINS 4802 [0.5 credit]
Selected Topics in French B
Students may take a fourth- or fifth-year special topic seminar offered in the Department of French while submitting written work in English. This course does not count towards credit in any degree program in French.
Prerequisite(s): fourth-year standing or permission of the Department.
Hours to be determined.

Geography (GEOG)

Geography (GEOG) Courses
4000-level courses are normally restricted to students with fourth-year Honours standing. However, students with third-year standing may take 4000-level courses provided they have the necessary prerequisites, a Geography CGPA of 6.50 or better, and permission of the Department.

GEOG 1010 [0.5 credit]
Global Environmental Systems
Principles, processes and interactions in the Earth’s environment emphasizing the flow of energy and matter within global systems. Atmospheric and oceanic processes, earth surface processes and biogeochemical cycling. Case studies on the interaction between human activity and the natural environment.
Includes: Experiential Learning Activity
Lectures three hours a week, laboratory two hours a week.

GEOG 1020 [0.5 credit]
People, Places and Environments
Introduction to human geography. Examination of relationships between people, communities, society and the natural environment at local to global scales. Population change, cultural patterns, and historical, economic, political and environmental forces that shape human activity and experiences from place to place.
Includes: Experiential Learning Activity
Also listed as ENST 1020.
Lectures two hours a week and tutorial one hour a week.

GEOG 1023 [0.5 credit]
Introduction to Cities and Urbanization
Introduction to the study of cities, urbanization and suburbanization. Geography of urban experience, development and change across an urbanizing planet. Urbanization processes, patterns and issues in different cities and regions; the relationships among urban areas.
Includes: Experiential Learning Activity
Precludes additional credit for GEOG 2400 (no longer offered).
Lectures two hours per week and tutorials one hour per week.
GEOG 2005 [0.5 credit]
Introduction to Qualitative Research
Introduction to the research process, from generating questions to reporting results. Topics include intensive and extensive research approaches; the use of surveys, interviews and other data collection methods; the analysis of qualitative information; and the ethical dimensions of doing research with people and communities.
Includes: Experiential Learning Activity
Also listed as ENST 2005.
Prerequisite(s): 1.0 credit in GEOG or ENST at the 1000-level and second-year standing, or permission of the Department.
Lectures two hours a week, workshop two hours a week.

GEOG 2006 [0.5 credit]
Introduction to Quantitative Research
Introduction to solving problems using descriptive and inferential statistical methods. Graphical and numerical tools to describe distributions. Probability, sampling and estimates, and hypothesis testing. Fundamentals of spatial statistics and analysis.
Includes: Experiential Learning Activity
Also listed as ENST 2006.
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), NEUR 2002, PSCI 2702, STAT 2507, STAT 2606.
Lectures two hours a week, laboratory two hours a week.

GEOG 2013 [0.5 credit]
Weather and Water
Introduction to climate, weather and the hydrological cycle. Physical properties of the atmosphere, radiation and energy balances, global circulation, atmospheric moisture and precipitation, weather systems and forecasting, mechanisms of climate change.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 1010 or ERTH 1006 or ERTH 1010 or ISCI 1001.
Lectures three hours a week, laboratory three hours a week.

GEOG 2020 [0.5 credit]
Ecosystems of Canada
Introduction to world biomes and in-depth analysis of the distribution and development of Canada's major ecosystems including the boreal forest, temperate forest, tundra, grasslands, wetlands, and aquatic environments; Current issues in ecosystem science and conservation such as agricultural management, forestry and urban ecology.
Prerequisite(s): GEOG 1010 or ERTH 1006 or ERTH 1010 or ISCI 1001.
Lectures three hours a week.

GEOG 2023 [0.5 credit]
Cities, Inequality and Urban Change
Geographical perspectives on the uneven power relationships and politics that shape urban lives and urban space. Key topics may include housing and segregation, planning for sustainable cities, urban social movements, urban inequality and changing livelihoods.
Includes: Experiential Learning Activity
Precludes additional credit for GEOG 2400 (no longer offered).
Prerequisite(s): GEOG 1023, or second-year standing, or permission of the department.
Lectures two hours per week and tutorials one hour per week.

GEOG 2200 [0.5 credit]
Global Connections
Globalization and global environmental change as linked processes. Geographical analysis of economic, cultural and political transformations acting at global, national and local scales. Choices and constraints underlying economic, social and environmental sustainability.
Prerequisite(s): second-year standing or permission of the Department.
Lectures three hours a week.

GEOG 2300 [0.5 credit]
Space, Place and Culture
Introduction to social and cultural geography, including how theories of space, place, landscape, power, and knowledge can be used to understand the geographic dimensions of social and cultural life. Topics include culture and identity, migration and transnationalism, nature, gender, sexuality, race, colonialism, consumption, and work.
Prequisite(s): second-year standing or permission of the Department.
Lectures two hours a week, discussion one hour a week.
GEOG 2500 [0.5 credit]
Climate Change: Social Science Perspectives
An introduction to climate change as a political, economic and socio-cultural phenomenon, including the political-economic and world-historical causes of anthropogenic greenhouse gas emissions; variations in impact and vulnerability; climate justice and other political movements; global mitigation and adaptation strategies; and proposals for radical systemic change.
Includes: Experiential Learning Activity
Also listed as ENST 2500.
Prerequisite(s): second-year standing or permission of the Department.
Lectures two hours a week, discussion groups one hour a week.

GEOG 2600 [0.5 credit]
Geography Behind the Headlines
Exploration of the geographical backgrounds to selected issues of current public interest, through geography's perspective of integrating human and physical environments. Issues selected will be structured from the global through the national/regional to the local, identifying the interdependencies among the scales.
Lecture three hours a week.

GEOG 3000 [0.5 credit]
Honours Field Course
Field research, with a focus on data collection methods, analysis and presentation of findings. Design and conduct research that links the human and biophysical environment. Topics may change from year to year.
Includes: Experiential Learning Activity
Also listed as ENST 3900.
Precludes additional credit for ENST 2900 (no longer offered).
Prerequisite(s): GEOG 2005/ENST 2005 and GEOG 2006/ENST 2006, third-year Honours standing in Geography, Geomatics or Environmental Studies, or permission of the Department.
Normally consists of a multi-day field excursion in the Ottawa region. A supplementary charge may apply.
Consult the department regarding course details.

GEOG 3001 [0.5 credit]
Doing Qualitative Research
Theory and methods used in qualitative approaches to research in human geography; hands-on experience and discussion of beliefs and claims underlying scholarly work. Ethical and practical dilemmas confronting researchers. Gathering and interpreting qualitative information; representing knowledge.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2005 or ENST 2005.
Lecture and discussion three hours per week.

GEOG 3003 [0.5 credit]
Quantitative Geography
Quantitative methods used in geographical research: multiple correlation and regression, principal component/factor analysis, spatial statistics, cluster analysis, and a review of other selected techniques. Computer-based analysis.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2006 or ENST 2006 or STAT 2507 or permission of the Department.
Lecture two hours a week, laboratory two hours a week.

GEOG 3009 [0.5 credit]
Special Topics in Human Geography
Selected topics concerning human geography not usually included in regular course offerings. Topic varies from year to year. Students should check with the Department for more information.
Precludes additional credit for GEOG 2505 (no longer offered).
Prerequisite(s): GEOG 1020 or ENST 1020 and third-year standing, or permission of the Department.
Lecture three hours per week.

GEOG 3010 [0.5 credit]
Field Methods in Physical Geography
Field and laboratory approaches, methodologies and techniques in physical geography. Field projects will be undertaken to collect data for analysis, evaluation and presentation.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2006 or ENST 2006 or STAT 2507 and GEOG 2013 or GEOG 2014 or permission of the Department.
Normally consists of a multi-day field camp, including lodging, during Fall or Winter Break, and regular classroom meetings. A supplementary charge will apply.

GEOG 3021 [0.5 credit]
Geographies of Culture and Identity
Examination of culture, identity and place over time. Colonial and other historical processes that have shaped societies from place to place; relationships between cultural groups and their natural surroundings; gender, ethnicity, nationality and other dimensions of identity; impacts of globalization.
Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2300 and third-year standing, or permission of the Department.
Lecture three hours a week.
GEOG 3022 [0.5 credit]  
Environmental and Natural Resources  
Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources.  
Includes: Experiential Learning Activity  
Also listed as ENST 3022.  
Prerequisite(s): third-year standing in Geography or Environmental Studies or BGInS Specialization/Stream in Globalization and Environment or permission of the Department.  
Lecture three hours a week.  

GEOG 3023 [0.5 credit]  
Cities in a Global World  
Introduces the study of cities as "systems of cities", the political economy of linkages between urban places located unevenly in space, and "cities as systems". Case studies of socio-cultural, political and economic relations within biophysical and built environments.  
Includes: Experiential Learning Activity  
Prerequisite(s): GEOG 2023 and third-year standing, or permission of the department.  
Lecture and discussion three hours a week.  

GEOG 3024 [0.5 credit]  
Understanding Globalization  
Geographical analysis of processes of globalization: theoretical frameworks, historical context and contemporary challenges.  
Prerequisite(s): GEOG 2200 and third-year standing, or permission of the Department.  
Lecture three hours a week.  

GEOG 3025 [0.5 credit]  
Geographies of Selected Regions  
Geographical analysis of key questions facing a selected region of the world. Attention will focus on selected topics within one or more regions and their related global context.  
Prerequisite(s): third-year standing in a B.A. program or BGInS Specialization/Stream in Globalization and Environment or permission of the Department.  
Lecture three hours a week.  

GEOG 3026 [0.5 credit]  
Topics in the Geography of Canada  
Selected topic concerning the geography of Canada. Topic varies from year to year.  
Precludes additional credit for GEOG 2505 [no longer offered].  
Prerequisite(s): GEOG 1020 or ENST 1020 and second-year standing, or permission of the Department.  
Lecture three hours a week.  

GEOG 3030 [0.5 credit]  
Regional Field Excursion  
Guided and independent geographic field research, with a focus on data collection methods, and analysis and presentation of findings. Consists of an excursion outside of the Ottawa region. A supplementary charge may apply.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year Honours standing in Geography or BGInS Specialization in Globalization and Environment or permission of the Department.  
A seven- to ten-day field excursion.  

GEOG 3102 [0.5 credit]  
Geomorphology  
Geomorphological agents of landscape change at the Earth's surface, emphasizing the role of water, ice and wind in erosion and deposition; use of geomorphic indicators in studies of environmental change. A supplementary charge may apply.  
Includes: Experiential Learning Activity  
Prerequisite(s): GEOG 2014 and third-year standing, or permission of the Department.  
Lectures two hours a week, laboratory two hours a week, one field excursion.  

GEOG 3103 [0.5 credit]  
Watershed Hydrology  
Principles of hydrology at local and watershed scales, emphasizing: soil moisture regimes; field data collection and analysis of surface water or snow and ice conditions; hydrologic processes in cold environments; and regional runoff regimes in Canada.  
Includes: Experiential Learning Activity  
Prerequisite(s): GEOG 2013 or permission of the Department.  
Lectures three hours a week, laboratory two hours a week.  

GEOG 3104 [0.5 credit]  
Principles of Biogeography  
Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.  
Includes: Experiential Learning Activity  
Also listed as BIOL 3608.  
Prerequisite(s): GEOG 1010 or BIOL 2600, or permission of the Department.  
Lectures, laboratory, and fieldwork five hours a week.  

GEOG 3105 [0.5 credit]  
Climate and Atmospheric Change  
The global climate system, with emphasis on global change variability over the historical and modern periods; the changing composition of the atmosphere and its impact on climate; analysis and interpretation of climatic and atmospheric data; modeling of climate systems.  
Includes: Experiential Learning Activity  
Prerequisite(s): GEOG 2013 or permission of the Department.  
Lecture two hours a week, laboratory two hours a week.
GEOG 3106 [0.5 credit]
Aquatic Science and Management
Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation. Includes: Experiential Learning Activity
Also listed as ENSC 3106.
Prerequisite(s): third-year standing and a second-year science or engineering course.
Workshop four hours per week.

GEOG 3108 [0.5 credit]
Soil Properties
The physical and chemical properties of soils; soil-water relationships, weathering processes, soil mineralogy, cation exchange, soil pH. A plant-oriented perspective predominates. Includes: Experiential Learning Activity
Prerequisite(s): GEOG 2013 or GEOG 2014 or permission of the Department.
Lectures and laboratory five hours a week.

GEOG 3206 [0.5 credit]
Health, Environment, and Society
Factors influencing human health in an ecological framework involving population structure, habitat, and behaviour. Changes in the distribution of communicable and degenerative diseases are portrayed as being related to historical and contemporary development and globalization processes. Sources, types and characteristics of geographically referenced health information.
Prerequisite(s): third-year standing.
Lectures three hours a week.

GEOG 3209 [0.5 credit]
Sustainability and Environment in the South
Analysis of the relationships between people and environment in selected regions in the South (Africa, Asia, Latin America). Emphasis on sustainable livelihoods and local action in relation to broader socio-economic and political processes. Regions selected vary from year to year.
Prerequisite(s): third-year standing and ENST 2000 or ENST 2001 or GEOG 2200 or GEOG 2300 or permission of the Department.
Lecture and discussion three hours a week.

GEOG 3404 [0.5 credit]
Geographies of Economic Development
Geographical approaches to economic development and difference at local, regional and global scales. Critical historical, cultural, social and political economic perspectives on 'development', including theories of the state, colonial power, and development institutions. Spatial dynamics and environmental impacts of economic activity.
Prerequisite(s): GEOG 2200 or permission of the Department.
Lectures three hours a week.

GEOG 3501 [0.5 credit]
Geographies of the Canadian North
The physical characteristics, historical geography, economic resources, settlement patterns and problems and the future development of Arctic and Subarctic lands, focusing primarily on Canada.
Prerequisite(s): third-year standing or permission of the Department.
Lectures three hours a week.

GEOG 3700 [0.5 credit]
Population Geography
The distributional aspects of population attributes; areal patterns of population characteristics and their spatial variations associated with differences in the nature of places; migratory movements within the framework of spatial models of interactions between locations.
Prerequisite(s): GEOG 2200 or GEOG 2300, or permission of the Department.
Lectures three hours a week.

GEOG 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

GEOG 4000 [0.5 credit]
Field Studies
Field observation and methodology in a selected region; individual or group basis.
Includes: Experiential Learning Activity
Also listed as ENST 4400.
Prerequisite(s): third-year Honours standing and permission of the Department.
Hours to be arranged.

GEOG 4004 [0.5 credit]
Environmental Impact Assessment
Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies.
Includes: Experiential Learning Activity
Also listed as ENST 4004.
Prerequisite(s): GEOG 3022 or ENST 3022, and fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.
Lectures and seminars three hours a week.

GEOG 4005 [0.5 credit]
Directed Studies in Geography
Students pursue their interest in a selected theme in geography on a tutorial basis with a member of the Department.
Prerequisite(s): permission of the Department.
GEOG 4007 [0.5 credit]
Special Topics in Geography and Environmental Studies
Selected topics in geography and/or environmental studies.
Also listed as ENST 4007.
Precludes additional credit for GEOG 4006.
Prerequisite(s): fourth-year Honours standing in the Department of permission of the Department.
Seminar three hours per week.

GEOG 4013 [0.5 credit]
Cold Region Hydrology
An examination of cold region hydrologic processes via experimental and observational studies; analysis of hydrologic data and application of hydrologic models.
Prerequisite(s): GEOG 3103.
Lecture three hours a week.

GEOG 4017 [0.5 credit]
Global Biogeochemical Cycles
Processes that control the fluxes and reservoirs of biologically active chemical constituents on land, in the atmosphere, and in the oceans. Interactions between biogeochemical cycles and the Earth’s climate; impact of land use and fossil fuel emissions on biogeochemical cycles and global change.
Prerequisite(s): GEOG 3108 or permission of the Department.
Lectures three hours per week.

GEOG 4021 [0.5 credit]
Seminar in Culture, Identity and Place
Selected topic or field of inquiry concerning the geographic dimensions of culture, identity and place.
Prerequisite(s): GEOG 3021 and fourth-year Honours standing in Geography or permission of the Department.
Seminar three hours a week.

GEOG 4022 [0.5 credit]
Seminar in People, Resources and Environmental Change
A selected topic or field of inquiry concerning natural resource use and environmental change.
Also listed as ENST 4022.
Prerequisite(s): GEOG 3022 or ENST 3022 and fourth-year Honours standing in Geography or Environmental Studies or BGInS Specialization in Globalization and Environment or permission of the Department.
Seminar three hours a week.

GEOG 4023 [0.5 credit]
Seminar in Special Topics on the City
A selected topic or field of inquiry concerning urban geography.
Prerequisite(s): GEOG 3023 and fourth-year Honours standing in Geography or Environmental Studies or BGInS Specialization in Globalization and Environment or permission of the Department.
Seminar three hours per week.

GEOG 4024 [0.5 credit]
Seminar in Globalization
A selected issue or topic related to globalization.
Prerequisite(s): GEOG 3024 and fourth-year Honours standing in Geography or BGInS Specialization in Globalization and Environment or permission of the Department.
Seminar three hours per week.

GEOG 4040 [0.5 credit]
Geographic Thought
Major intellectual issues and debates in the development of contemporary human geography, including history of geographic thought, geographic responses to social and political movements and debates, and geographic engagement with contemporary critical theory.
Prerequisite(s): fourth-year Honours standing in Geography or permission of the Department.
Seminar three hours per week.

GEOG 4101 [0.5 credit]
Two Million Years of Environmental Change
Multidisciplinary scientific study of the changes in the physical environment of the Earth during the last two million years and methods of studying recent Earth history, with focus on current research.
Includes: Experiential Learning Activity.
Prerequisite(s): third year standing in a B.Sc. program, or a third year Science Geography Elective or a third year ERTH course, or permission of the Department. Note: GEOG 3105 is recommended.
Lectures three hours a week.

GEOG 4103 [0.5 credit]
Water Resources Engineering
A quantitative analysis of natural water systems and the development of these systems as a resource. Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Availability of groundwater. Storm water management.
Also listed as ENVE 3003.
Prerequisite(s): permission of the Department.
Recommended background: MAAE 2300.
Lectures three hours a week, problem analysis one hour a week.
GEOG 4104 [0.5 credit]
Microclimatology
The formation of microclimates near the Earth’s surface; energy and water flows; the interaction of atmospheric processes with the physical properties of surfaces. Prerequisite(s): GEOG 2013 or permission of the Department. Lectures three hours a week.

GEOG 4108 [0.5 credit]
Permafrost
Distribution, development, and degradation of permafrost in Canada; thermal and hydrologic regime of permafrost terrain; development of landforms in permafrost regions; geotechnical consideration in northern construction. Prerequisite(s): GEOG 3108 or permission of the Department. Lectures three hours a week.

GEOG 4304 [0.5 credit]
Transportation Engineering and Planning
Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion; human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods. Also listed as CIVE 3304. Prerequisite(s): third-year standing, or permission of the Department. Lectures three hours a week, problem analysis three hours alternate weeks.

GEOG 4323 [0.5 credit]
Urban and Regional Planning
History, theories, and practice of urban planning, as well as the policies, plans, and programs developed and implemented in diverse communities. Course topics may include the integration of community development and social planning, urban design, transportation and infrastructure, and environmental management. Includes: Experiential Learning Activity Prerequisite(s): GEOG 3023 and fourth-year standing in Geography or Environmental Studies, or permission of the department. Lectures three hours per week.

GEOG 4406 [0.5 credit]
Practicum I
Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4408. Includes: Experiential Learning Activity Also listed as GEOM 4406. Prerequisite(s): fourth-year Honours standing in Geography or Geomatics and permission of the Department. Field placement one day a week.

GEOG 4408 [0.5 credit]
Practicum II
Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4406. Includes: Experiential Learning Activity Also listed as GEOM 4408. Prerequisite(s): fourth-year Honours standing in Geography or Geomatics and permission of the Department. Field placement of one day a week.

GEOG 4450 [0.5 credit]
Community-Engaged Research
Working in partnership with local organizations, students apply their geographical knowledge to conduct community-engaged research. Student projects will generate outputs for community partners. Research topics vary year to year. Includes: Experiential Learning Activity Also listed as ENST 4450. Prerequisite(s): fourth-year standing, or permission of the department. Lectures, discussion and project work three hours a week.

GEOG 4906 [1.0 credit]
Honours Research Project
A research project based on a modeling, laboratory or field problem. The project is supervised by a member of the department and a written thesis and poster must be submitted. Includes: Experiential Learning Activity Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOM 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907. Prerequisite(s): fourth-year Honours standing in B.Sc. Geography, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

GEOG 4909 [1.0 credit]
Honours Research Thesis
Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor. Includes: Experiential Learning Activity Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906, GEOM 4906, GEOM 4909, ENST 4906, and ENST 4907. Prerequisite(s): fourth-year Honours standing in B.A. Geography or B.Globaliztion and International Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser. Hours to be arranged with faculty adviser.
Geomatics (GEOM)

Geomatics (GEOM) Courses

GEOM 1004 [0.5 credit]
Maps, Satellites and the Geospatial Revolution
Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing).
Includes: Experiential Learning Activity
Also listed as ERTH 2004.
Precludes additional credit for GEOM 2004 (no longer offered).
Lectures and laboratory, four hours a week.

GEOM 2005 [0.5 credit]
Introduction to Geospatial Programming
Computer programming for geomatics students focusing on storage, manipulation, management, visualization and analysis of geospatial data; Essential coding concepts and best practices including variables, loops, and conditional statements; programmatic handling of raster and vector data structures; batch geoprocessing and map production; GIS tool customization.
Includes: Experiential Learning Activity
Lectures and laboratory, four hours per week.

GEOM 2007 [0.5 credit]
Points, Lines and Polygons
Storage, visualization, manipulation and analysis of vector geospatial data. Vector geoprocessing including buffering, overlays and topological analysis; feature classification and cartographic representation; managing coordinate reference systems for vector layers; selected applications of vector GIS such as urban planning, environmental and resource management and socio-economic mapping.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 1004 or permission of the Department.
Lectures and laboratory, four hours a week.

GEOM 2008 [0.5 credit]
Pixels and Grids
Storage, visualization, manipulation, and analysis of gridded geospatial data; 3D raster visualization; digital terrain analysis; interpolation and filtering; raster geoprocessing and projections; selected topics in raster GIS such as least-cost path analysis, natural hazard assessment, pollution mapping, hotspot analysis for crime and disease mapping.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 1004 or permission of the Department.
Lectures and laboratory, four hours per week.

GEOM 3002 [0.5 credit]
Introduction to Remote Sensing
Principles and methods of remote sensing; visual interpretation of air photos and satellite imagery; digital image processing, analysis and classification for thematic mapping; introduction to various active and passive remote sensing imagery types such as optical, hyperspectral, RADAR and LiDAR.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 2008 and third-year standing, or permission of the Department.
Lectures two hours a week, laboratory two hours a week.

GEOM 3005 [0.5 credit]
Geospatial Analysis
An advanced course in geospatial analysis theory and practice; geoprocessing; geo-visualization; geostatistics; spatial modelling; working with spatio-temporal data structures; advanced site-suitability and network analysis; intermediate GIS tool customization.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 2007 and GEOM 2008.
Lecture and laboratories five hours a week.

GEOM 3007 [0.5 credit]
Cartographic Theory and Design
Principles of and issues in cartography, cartographic communication and map design; practical aspects of cartographic representation using multimedia and online/interactive mapping.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 2007 or GEOM 2008 or permission of the Department.
Lectures and laboratory four hours a week.

GEOM 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

GEOM 4001 [0.5 credit]
Special Topics in Geomatics
A seminar focusing on selected topics in geomatics including advanced theory and/or application.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Geomatics or permission of the Department.
Laboratory or seminar three hours a week.

GEOM 4003 [0.5 credit]
Remote Sensing of the Environment
Advanced image enhancement; land cover classification for thematic mapping; biophysical modeling; applications in resources, environment, and urban mapping.
Includes: Experiential Learning Activity
Prerequisite(s): GEOM 3002 and Honours standing, or permission of the Department.
Lectures two hours a week, laboratory two hours a week.
GEOM 4005 [0.5 credit]  
Directed Studies in Geomatics  
Students pursue their interest in a selected theme in Geomatics on a tutorial basis with a member of the Department.  
Prerequisite(s): permission of the Department.  

GEOM 4008 [0.5 credit]  
Advanced Topics in Geographic Information Systems  
Advanced methods and techniques in GIS applications including: positional and attribute error analysis, multiple criteria decision making, interpolation, elevation modeling and ortho-imaging, and spatial pattern measurement.  
Includes: Experiential Learning Activity  
Prerequisite(s): GEOM 3005 and Honours standing.  
Lectures two hours a week, laboratory two hours a week.  

GEOM 4009 [0.5 credit]  
Applications in Geographic Information Systems  
Project design and customization, application development within a GIS, digital atlas compilation and geomatics education.  
Includes: Experiential Learning Activity  
Prerequisite(s): GEOM 3005 and (COMP 1006 or GEOG 3003), or permission of the department.  
Workshop three hours a week.  

GEOM 4406 [0.5 credit]  
Practicum I  
Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4408.  
Includes: Experiential Learning Activity  
Also listed as GEOG 4406.  
Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.  
Field placement one day a week.  

GEOM 4408 [0.5 credit]  
Practicum II  
Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG/GEOM 4406.  
Includes: Experiential Learning Activity  
Also listed as GEOG 4408.  
Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.  
Field placement one day a week.  

GEOM 4906 [1.0 credit]  
Honours Research Project  
Candidates for B.Sc. with Concentration in Geomatics undertake a research project within their area of specialization. The project is supervised by a member of the department and a written report must be submitted. The candidate may be examined orally on the report.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing in BSc Geomatics, and an approved research topic and adviser.  
Hours to be arranged with faculty adviser.  

GEOM 4909 [1.0 credit]  
Honours Research Thesis  
Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing in B.A. Geomatics, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.  
Hours to be arranged with faculty adviser.  

German (GERM)  

GERM 1010 [0.5 credit]  
First-Year German I  
For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.  
Includes: Experiential Learning Activity  
Precludes additional credit for GERM 1110.  
Four hours a week.
GERM 1020 [0.5 credit]
First-Year German II
Continuation of first-year German. Oral skills, reading and writing. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 1110.
Prerequisite(s): grade of C or higher in GERM 1010, or permission of the School.
Four hours a week.

GERM 1110 [1.0 credit]
Intensive First-Year German
For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 1010 and GERM 1020.
Eight hours a week (one term).

GERM 2000 [0.5 credit]
Reading in German I
For students with no prior knowledge of German who would like to develop the skills to read a variety of German texts, including passages from scholarly journals, reports, online newspaper or magazine articles.
Includes: Experiential Learning Activity
Three hours a week.

GERM 2010 [0.5 credit]
Second-Year German I
Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 2110.
Prerequisite(s): grade of C or higher in GERM 1020, GERM 1110, or permission of the School.
Four hours a week.

GERM 2020 [0.5 credit]
Second-Year German II
Continuation of second-year German. Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 2110.
Prerequisite(s): grade of C or higher in GERM 2010, or permission of the School.
Four hours a week.

GERM 2110 [1.0 credit]
Intensive Second-Year German
Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for GERM 2110 and GERM 2020.
Prerequisite(s): grade of C or higher in GERM 1020, GERM 1110, or permission of the School.
Eight hours a week (one term).

GERM 3000 [0.5 credit]
Reading in German II
A continuation of Reading in German I. Further development of reading skills in German.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 2000 or permission of the School.
Three hours a week.

GERM 3110 [1.0 credit]
Intensive Third-Year German
Continuation of the study of German to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies.
Compulsory attendance.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 2020, GERM 2110, or permission of the School.
Six hours a week (one term).

GERM 4110 [1.0 credit]
Intensive Fourth-Year German
Advanced spoken and written German with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study.
Compulsory attendance.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 3110, or permission of the School.
Six hours a week (one term).

GERM 4215 [0.5 credit]
German for Specific Purposes
Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 4110, or permission of the School.
Three hours per week.

GERM 4380 [0.5 credit]
Topics in German-speaking Cultures
Selected topics in German-speaking cultures and societies. Development of advanced language skills.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 4110, or permission of the School.
Three hours per week.

GERM 4900 [1.0 credit]
Independent Study
Research in a topic in German language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in German, grade of C or higher in GERM 4110 or equivalent, or permission of the School.
**GERM 4901 [0.5 credit]**
**Independent Study**
Research in a topic in German language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in German, grade of C or higher in GERM 4110 or equivalent, or permission of the School.

**Global Politics (GPOL)**

**Global Politics (GPOL) Courses**

**GPOL 1500 [0.5 credit]**
**Debates in Global Politics**
Theories, concepts and issues in international relations, global politics and global political economy. Topics may include conflict and intervention, peace and security, international institutions, human rights, gender, culture, globalization, multinational corporations, foreign policy, environmental issues, international development, and relations between rich and poor countries.
Precludes additional credit for PSCI 1200, PSCI 2601 and GPOL 1000.
Prerequisite(s): first-year standing in the Global Politics Specialization or Stream of the BGInS degree.
Lectures two hours a week, tutorials one hour a week.

**GPOL 2500 [0.5 credit]**
**Debates in Comparative Politics**
Themes and debates in comparative politics, especially as they relate to the study and practice of Global Politics.
Precludes additional credit for GPOL 1000 (no longer offered).
Prerequisite(s): second-year standing in the Global Politics Specialization or Stream in the BGInS degree.
Lecture three hours a week.

**GPOL 3000 [0.5 credit]**
**Themes in Global and Comparative Politics**
Themes and issues with a global and comparative focus, examining the role of key actors and applying theories and knowledge gained in previous Global Politics courses.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the Global Politics program or third-year standing in the Global Politics Specialization or Stream in the BGiNS degree.
Seminar three hours a week.

**GPOL 3100 [2.5 credits]**
**Internship in Global Politics**
The internship provides students with an opportunity to work with and study an organization whose institutional focus is on some international or regional aspect. Students will write a research paper on a topic related either to the organization or to the focus of the organization.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the Global Politics program or third-year standing in the Global Politics Specialization of the BGiNS degree with a CGPA in the major of 9.00 or higher, or permission of the Department.
Unscheduled.

**GPOL 4908 [1.0 credit]**
**Honours Research Essay**
Individual research project resulting in a major essay, completed under the supervision of a faculty member. The Honours Research Essay is evaluated by the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay.
Departmental regulations apply.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Global Politics with a CGPA of 9.00 or fourth-year standing in the Global Politics Specialization in the BGInS degree with a CGPA in the major of 9.00 or higher, or permission of the Department.
Unscheduled.

**Global and International Studies (GINS)**

**Global and International Studies (GINS) Courses**

**GINS 1000 [0.5 credit]**
**Global History**
Introduction to political, social, cultural, economic and military developments in global and international history.
Prerequisite(s): Enrolment in B.G.In.S.
Lectures two hours a week, tutorials one hour a week.

**GINS 1010 [0.5 credit]**
**International Law and Politics**
Introduction to the evolution of the international system, including the rise of the state, sovereignty, and the challenge of international cooperation. The role of international law in addressing global issues such as human rights, security and trade.
Prerequisite(s): Enrolment in B.G.In.S.
Lectures two hours a week, tutorials one hour a week.
GINS 1020 [0.5 credit]
Ethnography, Globalization and Culture
Introduction to the intersection of globalization processes with social and cultural diversity as examined through ethnography and ethnographic methods. Topics may include cultural survival, growing economic inequality, ecological vulnerabilities, health practices, human rights, and shifting racialized, gendered, religious, ethnic, and national identities.
Prerequisite(s): Enrolment in B.G.In.S.
Lectures two hours a week, tutorials one hour a week.

GINS 1100 [0.5 credit]
Global Development
Introduction to key questions and issues in development studies, taught from an inter-disciplinary perspective.
Lectures two hours a week, tutorials one hour a week.

GINS 1300 [0.0 credit]
International Experience Requirement Preparation
This mandatory course introduces BGInS students to the International Experience Requirement (IER) and to the various policies and procedures associated with it. Graded SAT/UNS.
Prerequisite(s): first-year standing in BGInS.
Online course.

GINS 2000 [0.5 credit]
Ethics and Globalization
Introduction to global ethical issues, focusing on alternative lines of ethical argument. Topics may include poverty and unequal development, climate change, war and terrorism, reparations for colonialism and slavery, international relief services, ill effects of globalization, trafficking and forced labour, democracy and global governance.
Prerequisite(s): Second-year standing in B.G.In.S.
Lectures two hours a week, tutorials one hour a week.

GINS 2010 [0.5 credit]
Globalization and International Economic Issues
An introduction to the world economy, international trade and finance, and economic development. Social and economic implications for both rich and poor countries of lowered barriers to the international flows of goods, services, capital, labour, and information in the age of globalization.
Prerequisite(s): Second-year standing in B.G.In.S.
Lectures two hours a week, tutorials one hour a week.

GINS 2020 [0.5 credit]
Global Literatures
A study of the global dynamics of the contemporary literary imagination and literary production; literature as cultural practice; the politics of literary circulation; the politics of language and translation.
Prerequisite(s): second-year standing in B.G.In.S.
Lectures two hours a week, tutorials one hour a week.

GINS 3010 [0.5 credit]
Global and International Theory
Advanced analysis of global and international theories from a variety of perspectives, including realism, liberalism, postmodernism, constructivism, poststructuralism, literary and critical approaches.
Prerequisite(s): third-year standing in B.G.In.S.
Lectures three hours a week.

GINS 3020 [0.5 credit]
Places, Boundaries, Movements and Global Environmental Change
Examination of the relationship between individual places and global social and environmental processes. The changing nature of regions, states and political boundaries in the context of political and economic globalization and international migration. Social science perspectives on climate change vulnerability, adaptation and mitigation.
Prerequisite(s): third-year standing in B.G.In.S.
Lectures three hours a week.

GINS 3100 [0.5 credit]
Global and International Group Project
Student teams work on a project related to global and international studies. Lectures are devoted to discussing group project-related issues and student presentations. A project proposal, a series of project reports and oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): Third-year standing.
Lecture one hour per week, tutorials two hours per week.

GINS 3200 [0.5 credit]
Experiential Learning Abroad
An experiential learning opportunity combining volunteer work abroad with classroom instruction on the Carleton campus. Through experiential engagement outside Canada, together with critical reflection, students will learn about the challenges and rewards of global engagement.
Includes: Experiential Learning Activity
Prerequisite(s): Third-year standing.
Lecture two hours a week plus a three week experiential learning trip abroad.

GINS 3300 [0.5 credit]
Global and International Studies Abroad: Selected Topics
Based at a partner university around the world, and taught by a Carleton faculty member, the course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in global and international studies. Topic and location will change annually.
Includes: Experiential Learning Activity
Prerequisite(s): Third-year standing and approval by the BGInS Program Director.
Three week intensive course.
GINS 3900 [0.5 credit]
International Placement
Placement for six weeks with a global and international focus.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in B.G.In.S.

GINS 3901 [1.0 credit]
International Placement
Placement for twelve weeks with a global and international focus.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in B.G.In.S.

GINS 3930 [0.5 credit]
Carleton International Placement
Placement for six weeks with a global and international focus for students outside of the BGIInS Program.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3701, IPAF 3900 (no longer offered).
Prerequisite(s): Third-year standing and minimum CGPA of 9.0.
Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3931 [1.0 credit]
Carleton International Placement
Placement for twelve weeks with a global and international focus for students outside of the BGIInS Program.
Includes: Experiential Learning Activity
Precludes additional credit for BUSI 3702, IPAF 3901 (no longer offered).
Prerequisite(s): Third-year standing and minimum CGPA of 9.0.
Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

GINS 4090 [0.5 credit]
Honours Seminar in Global and International Studies
Examination of key debates in global and international studies from a variety of disciplinary and interdisciplinary perspectives. Integration of knowledge from different areas of emphasis in global studies. A major research paper is required that undertakes to focus theoretical insight on practical concerns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in B.G.In.S. Seminar three hours a week.

GINS 4900 [0.5 credit]
Tutorial in Global and International Studies
A tutorial on selected topics in which seminars are not available.
Prerequisite(s): fourth-year Honours standing in B.G.In.S. and permission of the Program Director.

GINS 4908 [1.0 credit]
Honours Research Essay
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. B.G.In.S. regulations apply.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in B.G.In.S. with a CGPA of 9.00 or higher, or permission of the Program Director.

Greek (GREK)

Greek (GREK) Courses
GREK 1005 [0.5 credit]
Introduction to Greek I
A course for beginners in ancient Greek, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Greek.
Includes: Experiential Learning Activity
Lectures and tutorials four hours a week.

GREK 1006 [0.5 credit]
Introduction to Greek II
A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.
Includes: Experiential Learning Activity
Prerequisite(s): GREK 1005 or equivalent.
Lectures and tutorials four hours a week.

GREK 2200 [0.5 credit]
Intermediate Greek I
Further study of the language; introduction to the reading of ancient Greek authors.
Includes: Experiential Learning Activity
Precludes additional credit for GREK 2001.
Prerequisite(s): GREK 1006 or equivalent.
Tutorials three hours a week.

GREK 2201 [0.5 credit]
Intermediate Greek II
Continued study of the language; reading of selected prose and poetry by ancient Greek authors; development of translation skills.
Precludes additional credit for GREK 2001.
Prerequisite(s): GREK 2200 or equivalent.
Tutorials three hours a week.

GREK 3900 [0.5 credit]
Advanced Greek I
Reading and critical discussion of selections from ancient Greek.
Prerequisite(s): GREK 2200, GREK 2201 or equivalent.
Tutorials three hours a week.
GREK 3901 [0.5 credit]
Advanced Greek II
Reading and critical discussion of selections from ancient Greek.
Prerequisite(s): GREK 2200, GREK 2201 or equivalent.
Tutorials three hours a week.

GREK 4900 [0.5 credit]
Directed Study

GREK 4901 [0.5 credit]
Directed Study

Health Sciences (HLTH) Courses

HLTH 1000 [0.5 credit]
Fundamentals of Health
Introduction to what comprises a healthy body and mind, and what leads to illness and disease. Biomedical, psychosocial, and epidemiological approaches to current issues in the field of health. Policy and cultural/environmental contexts.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 1001.
Lectures three hours a week and group one hour a week.

HLTH 1001 [0.5 credit]
Principles of Health I
Health and illness will be considered from an interdisciplinary perspective, including biomedical, cultural, psychosocial and environmental.
Precludes additional credit for HLTH 1000.
Lecture three hours a week.

HLTH 1002 [0.5 credit]
Health Science Communication
Introduction to using library, database and/or bioinformatics resources to develop informed verbal, non-verbal and written communication within the context of healthcare, public health and health research. Concepts in ethical scholarship, proper use of sources and plagiarism will be introduced.
Lecture three hours a week.

HLTH 2001 [0.5 credit]
Health Research Methods and Skills
An introduction to quantitative and qualitative methods and designs in health sciences research. Basic research skills will also be provided, including regulatory aspects of conducting research, information literacy skills, evaluating published research and other sources of evidence in the digital age.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 1000 or HLTH 1001.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 2002 [0.5 credit]
Molecular and Cellular Pathology
Introduction to the causes, natural history, and pathophysiology of common human diseases of various organ systems. Diseases related to structural and functional changes at the molecular, cellular and organ level.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 1000 and BIOL 1103 or HLTH 2020.
Lecture three hours a week.

HLTH 2003 [0.5 credit]
Social Determinants of Health
Overview of the social determinants of health, ranging from early life experiences, poverty, social status, migration, and the physical environment. The relation between social determinants and environmental vulnerabilities, health behaviours, illness prevalence, treatment outcomes, and access to health care.
Prerequisite(s): HLTH 1000 or HLTH 1001.
Lecture three hours a week.

HLTH 2004 [0.5 credit]
Microbiology and Virology
Introduction to the pathogenic microorganisms, including fungal, bacterial, viral and prion. Biochemical, genetic, pathological and epidemiological aspects in the human context; their interaction with host defense systems and strategies for antibiotic and vaccine development.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 3301 (no longer offered).
Prerequisite(s): HLTH 1000 and BIOL 1103 or permission of the department.
Lecture three hours a week, and laboratory three hours a week.

HLTH 2020 [0.5 credit]
Principles of Health II
An overview of the history of medicine, its relationship to society, medical and health terminology, introduction to organ systems, diseases, illnesses and their diagnoses, current events in health and medicine.
Prerequisite(s): HLTH 1001 or permission of the department.
Lecture three hours a week.

HLTH 3101 [0.5 credit]
Global Health
Overview of issues in global health with focus on low- and middle-income countries. Key indicators and determinants of global health, implementation and evaluation of global programs, challenges of research and interventions in under served areas, and key players in addressing global health issues.
Prerequisite(s): HLTH 2001 and HLTH 2003, or permission of the department.
Lecture and seminar, three hours per week.
HLTH 3102 [0.5 credit]
**Indigenous Health in a Global World**
The health conditions of Indigenous peoples in different regions of the world; social and biological factors that contribute to greater risk and poor health; strategies of Indigenous peoples to restore health to their peoples.
Prerequisite(s): HLTH 2001 and HLTH 2003, or permission of the department.
Lecture and seminar three hours per week.

HLTH 3103 [0.5 credit]
**Health Policy and Canada's Health Care System**
The history of Canada's health care system. The model of financing and intergovernmental responsibilities. Current and emerging policy debates facing our health care system, and the role of scientific evidence in decision-making and policy development.
Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the department.
Lecture and seminar three hours per week.

HLTH 3104 [0.5 credit]
**Regulatory Issues and Human Health**
The general principles of health regulatory policies in Canada. The role of scientific evidence in developing legislation and regulations at different levels, including probable levels of risk, standards of evidence, cost-benefit analysis, ethical considerations, psychosocial factors influencing risk management and compliance, and evolving technologies.
Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the department.
Lecture and seminar three hours a week.

HLTH 3201 [0.5 credit]
**Epidemiology**
Basic concepts of epidemiologic study designs and measures; inferences that are fundamental to the identification of causes and prevalence of diseases. Specialized issues within epidemiology including gene-environment interactions and the clustering of specific disease phenotypes.
Includes: Experiential Learning Activity
Prerequisite(s): STAT 2507 and HLTH 2001, or permission of the department.
Lecture three hours a week, lab/workshop two hours a week.

HLTH 3302 [0.5 credit]
**Immunity and Immune-Related Disorders**
Basic processes relevant to the immune system; the relationship between immune activity and functioning as related to the development of particular pathologies, such as virally-related illness, autoimmune disorders, inflammatory illnesses, and interactions with social and economic factors that promote immune-related disturbances.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 2002 and BIOL 2200 or permission of the department.
Lecture three hours a week, laboratory four hours a week. Labs require regular participation outside of the scheduled lab time.

HLTH 3303 [0.5 credit]
**Molecular and Cellular Pathology II**
Advanced concepts in cell signaling and function, cell injury and death, tissue structure and wound healing and repair. This course will integrate genetic, biochemical and physiological mechanisms that contribute to health and disease.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 2002.
Lecture three hours a week, lab four hours a week.

HLTH 3401 [0.5 credit]
**Diseases of Childhood**
Epidemiological, psychological and physiological basis for disease in childhood and adolescence. Topics will be discussed from a global and Canadian perspective and include the medicalization of these diseases.
Includes: Experiential Learning Activity
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.
Lecture three hours a week.

HLTH 3402 [0.5 credit]
**Diseases of Aging**
Aging is accompanied by increased illness related to cardiovascular, immune and neurodegenerative processes. This course assesses the fundamental mechanisms that determine these pathological conditions. Molecular mechanisms and psychosocial determinants; intervention and therapeutic strategies.
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of department.
Lecture three hours a week.

HLTH 3403 [0.5 credit]
**Gender and Health**
The role of gender on psychosocial and biological mechanisms that alter the course of disease and treatment; health issues unique to women (e.g., reproductive and maternal health); the role of gender across cultures.
Prerequisite(s): HLTH 2002 and HLTH 2003, or permission of the department.
Lecture and seminar three hours a week.
HLTH 3404 [0.5 credit]
Psychosocial and Biological Interactions in Health
The psychosocial and biological mechanisms that interact to influence health outcomes. Cultural, political, socioeconomic, and psychological factors that can impact the biological mechanisms underlying both mental and physical health; epigenetic and genetic alterations; implications for psychosocial interventions.
Precludes additional credit for HLTH 4402 (no longer offered).
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.
Lecture and seminar three hours a week.

HLTH 3503 [0.5 credit]
Disability and Chronic Health Conditions
An interdisciplinary view of disability and chronic health conditions, including risk factors, prevalence, and the trajectory of such conditions. Functional impact based on life stage. Strategies for health promotion, prevention, accommodations, treatment, and rehabilitation.
Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.
Lecture three hours a week.

HLTH 3901 [0.5 credit]
Emerging Issues in Health Sciences I
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses, and for skills development including teamwork, communication and critical thinking.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.
Seminars three hours a week.

HLTH 3902 [0.5 credit]
Emerging Issues in Health Sciences II
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.
Seminars three hours a week.

HLTH 3903 [0.5 credit]
Emerging Issues in Health Sciences III
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.
Seminars three hours a week.

HLTH 3904 [0.5 credit]
Emerging Issues in Health Sciences IV
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.
Seminars three hours a week.

HLTH 3905 [0.5 credit]
Emerging Issues in Health Sciences V
These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.
Seminars three hours a week.

HLTH 4101 [0.5 credit]
Global Health Governance
Contemporary issues and debates in global health governance and effects on health monitoring and outcomes at individual and population levels. Historical patterns of global health, its regulatory framework, principal coordinating mechanisms and emerging challenges, and implications of globalization and international trade policies.
Prerequisite(s): HLTH 3101, or permission of the department.
Lecture and seminar three hours per week.
HLTH 4102 [0.5 credit]
New Health Technologies
Overview of new and emerging health technologies, including medical and assistive devices, diagnostics and screening, genetics, reproduction, tissue regeneration, imaging, and health informatics. Health technology assessment methods and issues. Regulatory, ethical and social implications; considerations in the developing world. Prerequisite(s): HLTH 1000 or HLTH 1001 and third-year standing or higher, or permission of the department. Also offered at the graduate level, with different requirements, as HLTH 5350, for which additional credit is precluded. Lecture and seminar three hours a week.

HLTH 4201 [0.5 credit]
Applied Health Statistics
Statistics concepts and procedures used in the analysis of health data; techniques commonly used to analyze data collected from different types of epidemiological and experimental study designs; how to interpret and present statistical findings. Includes: Experiential Learning Activity
Prerequisite(s): HLTH 3201 and STAT 2507 or permission of the department. Lecture three hours a week, lab/workshop two hours a week.

HLTH 4202 [0.5 credit]
Health Program Evaluation Tools and Methods
Introduction to concepts, principles and processes of evaluating health care programs and interventions. Methodological tools including needs assessment, project management skills, use of health information management databases. Issues in communication with stakeholders, including change management and decision making. Prerequisite(s): HLTH 2001 and STAT 2507 or permission of the department. Lecture and seminar three hours a week.

HLTH 4301 [0.5 credit]
Pandemics and Infectious Disease
Factors that influence disease processes, including viruses, bacteria, protozoa, fungi and infectious agents, how these agents come to have the effects that they do in a given individual, how they spread within and how to limit their spread. Prerequisite(s): HLTH 2004 and HLTH 3302 or permission of the department. Lecture three hours a week.

HLTH 4302 [0.5 credit]
Inflammatory and Endocrine Factors in Diseases
Inflammatory and hormonal processes and their relevance to disease states. Immune-related disorders, heart disease and stroke, metabolic syndrome, diabetes, psychiatric conditions, and neurodegenerative disorders. The contribution of psychosocial and genetic factors to diseases. Prerequisite(s): HLTH 3302 or BIOL 4200 or BIOC 4200 or permission of the department. Lecture three hours a week.

HLTH 4303 [0.5 credit]
Fundamentals in Pharmacology and Toxicology
Introduction to pharmacological principles, xenobiotics and their interactions within living systems. Topics include biological mechanisms of action of xenobiotics on macromolecules, cells and their effects on various organ systems. Social, legal and governmental policies will be discussed. Prerequisite(s): HLTH 3303 or permission of the department. Lecture and seminar three hours a week.

HLTH 4304 [0.5 credit]
Host-Pathogen Interactions
Advanced cellular and molecular mechanisms governing host-pathogen interactions and their contribution to disease. Exploration of immune signaling and recognition, virulence factors, antimicrobial resistance and research techniques used in this field. Prerequisite(s): HLTH 2004 and HLTH 3302 or permission of the department. Also offered at the graduate level, with different requirements, as HLTH 5403, for which additional credit is precluded. Seminar three hours per week.

HLTH 4401 [0.5 credit]
Maternal and Perinatal Determinants of Health
The integrated genetic, physiologic and environmental events occurring in early life that impact pregnancy, fetal/infant development and disease risk throughout the life course, with a focus on the mechanisms driving these events. Prerequisite(s): HLTH 2003 and HLTH 3302 or permission of the department. Lecture three hours a week.

HLTH 4502 [0.5 credit]
Disabilities and Disorders Related to Sensory Nervous System
Congenital and acquired disabilities related to sensory organs and processes, including visual and hearing impairments, vestibular and balance disorders, reflex problems, and others. Interdisciplinary approach to causes, mechanisms, accessibility, accommodations and interventions. Includes: Experiential Learning Activity
Precludes additional credit for HLTH 3501 (no longer offered). Prerequisite(s): Either 1) HLTH 3503 and (BIOL 2005 or BIOL 3305 or BIOL 3306), or 2) NEUR 3206, or 3) permission of the department. Lecture three hours a week, workshop two hours a week.
HLTH 4503 [0.5 credit]
Trauma-related Disability and Impairments
Biomedical and psychosocial factors associated with trauma-related illnesses, stressors, injuries and disabilities, including traumatic brain injury, spinal cord injury, fractures, amputations, burns, post-traumatic stress disorder, and others. Short- and long-term considerations for care and rehabilitation.
Precludes additional credit for HLTH 3502 (no longer offered).
Prerequisite(s): HLTH 3503 and (BIOL 2005 or BIOL 3305 or BIOL 3306) or permission of the department.
Lecture three hours a week.

HLTH 4601 [0.5 credit]
Environmental Pollution and Health
Introduction to environmental and occupational health; detection, assessment, management and mitigation of chemical, physical and biological hazards.
Prerequisite(s): HLTH 3104 or permission of the department.
Lecture and seminar three hours a week.

HLTH 4701 [0.5 credit]
Knowledge Translation
The application of knowledge translation in the formulation of policy and the development of skills required to maximize the impact of scientific findings through real world programs and policies and communication skills for diverse audiences.
Prerequisite(s): fourth-year standing and permission of the instructor.
Also offered at the graduate level, with different requirements, as HLTH 5300, for which additional credit is precluded.
Seminar three hours a week.

HLTH 4901 [0.5 credit]
Directed Studies in Health
Independent study, open to third- and fourth-year students to explore a particular health related topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the B.H.Sc. program, in addition to permission of the Faculty supervisor and the Department of Health Sciences.

HLTH 4906 [1.0 credit]
Capstone course – Research Essay
Independent critical review and research proposal on a health-related topic, using library, database and/or bioinformatics resources, under the supervision of the course instructor. Seminar topics include identification and critical review of resources, development of scientific writing skills, and formulation of health science-related research.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 4907, HLTH 4908 (no longer offered), HLTH 4909, HLTH 4910.
Prerequisite(s): fourth-year standing in the B.H.Sc. Honours and permission of the Department of Health Sciences.
Lecture/seminar three hours a week.

HLTH 4907 [1.0 credit]
Capstone Course – Group Research Project
A collaborative project on a health related topic. Students, working together as a team, will complete a research project and develop communication and research skills under the supervision of the faculty supervisor. Evaluation will be based on a written report and oral presentation.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 4906, HLTH 4908 (no longer offered), HLTH 4909, HLTH 4910.
Prerequisite(s): fourth-year standing in the B.H.Sc. Honours program, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 9.0, and permission of the Faculty supervisor and the Department of Health Sciences.
Seminars three hours a week as scheduled by the course instructor; other hours as arranged with the Faculty Adviser.

HLTH 4909 [1.0 credit]
Capstone Course – Field Placement and Research Project
Field placement providing practical experience in a health-related field. Placements may be in institutional or community settings, governmental or non-governmental organizations. Sites may vary each year. Evaluation based on a written report and an oral presentation.
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 4906, HLTH 4907, HLTH 4908 (no longer offered), HLTH 4910.
Prerequisite(s): fourth-year standing in B.H.Sc. Honours, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 9.0 and permission of the Department of Health Sciences.
Schedules may vary depending on the field placement site, but students are required to spend a minimum of eight hours per week on-site and attend required seminars as arranged by the course instructor.
HLTH 4910 [1.0 credit]
Honours Individual Research Thesis
An independent health related research project under the direct supervision of a faculty member. Evaluation will be based on a written thesis and oral poster presentation (oral or poster).
Includes: Experiential Learning Activity
Precludes additional credit for HLTH 4906, HLTH 4907, HLTH 4908, HLTH 4909.
Prerequisite(s): fourth-year standing in B.Sc. Honours Health Sciences, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 10.0, and permission of the Faculty advisor and the Department of Health Sciences. Permission will depend, in part, on capacity, such that meeting the minimum requirements does not guarantee enrollment in this research thesis course.

History (HIST)

History (HIST) Courses
Please note: not all of the following courses are offered in a given year. Consult the public class schedule at Carleton Central for the most up-to-date offerings. For further details concerning courses, see the departmental website at carleton.ca/history.

4000-level History seminars have limited enrolment. Priority in enrolment is given to students in History Honours and Combined Honours programs.

Topics in 4000-level History seminars change from year to year. Current topics are posted on the department's website at carleton.ca/history.

HIST 1001 [1.0 credit]
The Making of Europe
A survey of the major events, ideas and movements that have shaped Europe from Antiquity to the 21st century. (Field a or b).
Lectures/groups three hours a week.

HIST 1002 [1.0 credit]
Europe in the 20th Century
An introduction to some of the major ideological, political, diplomatic, military, social, cultural and economic developments that have shaped contemporary Europe. (Field b).
Lectures/groups three hours a week.

HIST 1010 [0.5 credit]
History of Northern Canada
A historical introduction to northern Canada from pre-contact times to the present. Open only to students in the Nunavut Public Administration certificate program. (Field c).

HIST 1301 [0.5 credit]
Conflict and Change in Early Canadian History
This course explores how colonialism and conflict altered peoples, cultures, and places in what came to be called Canada from pre-contact to the first age of industrialization. Course covers subjects including imperialism, Indigenous-settler relations, slavery, migration, and government, providing context for contemporary issues. (Field c).
Precludes additional credit for HIST 1300 (no longer offered).
Lectures/groups three hours a week.

HIST 1302 [0.5 credit]
Rethinking Modern Canadian History
This course explores how major political, economic, legal, social, and cultural changes shaped modern-day Canada from the late 1800s to the present. It provides context for contemporary issues, including colonialism, redress, reconciliation, race relations, migration and urbanization, globalization, technology, and the environment. (Field c).
Precludes additional credit for HIST 1300 (no longer offered).
Lectures/groups three hours a week.

HIST 1707 [1.0 credit]
World History
This course will follow the global community from 1400 to the present exploring how global connections, movements and trends have shaped our world with a particular focus on the non-western world. (Field a or d).
Lectures/groups three hours a week.

HIST 1900 [0.5 credit]
Topics in History
A lecture course on a special topic, theme, or period. Topic varies from year to year. (Field will depend on topic).
Lectures/groups three hours a week.

HIST 2000 [1.0 credit]
Medieval Europe
The history of medieval Europe from the fourth to the fifteenth century. (Field a).
Precludes additional credit for HIST 2001 and HIST 2002 (no longer offered).
Lectures/groups three hours a week.

HIST 2102 [0.5 credit]
Modern Thought and Culture: the Nineteenth Century
A broad examination of Western thought and culture in the 19th century with a focus on Europe and emphasis on major thinkers and intellectual, ideological, and cultural movements. The course is intended for students from varied disciplinary backgrounds. (Field e).
Precludes additional credit for HIST 2101 and HIST 3100 (no longer offered).
Lectures/groups three hours a week.
HIST 2103 [0.5 credit]
Modern Thought and Culture: the Twentieth Century
A broad examination of Western thought and culture in the 20th century with a focus on Europe and emphasis on major thinkers and intellectual, ideological, and cultural movements. The course is intended for students from varied disciplinary backgrounds. (Field e).
Precludes additional credit for HIST 2101 and HIST 3100 (no longer offered).
Lectures/groups three hours a week.

HIST 2204 [0.5 credit]
Early Modern Europe 1350-1650
A survey of the major social, political and cultural developments in continental Europe from the 14th to the 17th centuries. (Field a).
Precludes additional credit for HIST 2203 (no longer offered).
Lectures/groups three hours a week.

HIST 2206 [0.5 credit]
Early Modern Europe 1600-1800
A survey of the major social, political and cultural developments in continental Europe during the 17th and 18th centuries. (Field a).
Precludes additional credit for HIST 2203 (no longer offered).
Lectures/groups three hours a week.

HIST 2207 [1.0 credit]
Nineteenth-Century Europe
A study of critical episodes in the history of continental Europe during the nineteenth century. Themes may include the struggles for democracy in France, modernizing reform in Russia, and national unification in Italy and Germany. (Field b).
Lectures/groups three hours a week.

HIST 2301 [0.5 credit]
Canadian Political History
An historical survey of political experiences in Canada. (Field c).
Precludes additional credit for HIST 2303 (no longer offered).
Lectures/groups three hours a week.

HIST 2304 [1.0 credit]
Social and Cultural History of Canada
A thematic exploration of how the spaces of home, work, and play have been historically produced, understood, and experienced in Canada. (Field c).
Lectures/groups three hours a week.

HIST 2308 [0.5 credit]
Colonial Latin America
From ancient civilizations to the era of Independence, this class follows conquest, colonization and development of national identity in the countries of Latin America. (Field d).
Precludes additional credit for HIST 2307 (no longer offered).
Lectures/groups three hours a week.

HIST 2309 [0.5 credit]
Modern Latin America
From the Wars of Independence until the end of the twentieth century, this class follows the emergence of Latin American nations, their economies, politics, culture and international relations. (Field d).
Precludes additional credit for HIST 2307 (no longer offered).
Lectures/groups three hours a week.

HIST 2311 [0.5 credit]
Environmental History of Canada
A survey of Canadian history considering nature, landscape and geography. Topics include the history of energy regimes and climate change; Indigenous ecological knowledge; colonization and settlement; resource extraction; commodity production; environmental policies and movements. (Field c or e).
Precludes additional credit for HIST 2310 (no longer offered).
Lectures/groups three hours a week.

HIST 2312 [0.5 credit]
History of the Indian Ocean World
The Indian Ocean is one of the oldest maritime highways in the history of humanity and also an epicentre of global economy in the pre-modern world. The aim of the course is to familiarize students with the non-Western antecedents of modern global history. (Field d).
Precludes additional credit for HIST 3716 (no longer offered).
Lectures/groups three hours a week.

HIST 2401 [0.5 credit]
History of the United States to 1865
A survey of United States politics and society from the American Revolution to the Civil War. (Field c).
Precludes additional credit for HIST 2400 (no longer offered).
Lectures/groups three hours a week.

HIST 2402 [0.5 credit]
History of the United States from 1865
A survey of United States politics and society from Reconstruction to the era of globalization. (Field c).
Precludes additional credit for HIST 2400 (no longer offered).
Lectures/groups three hours a week.

HIST 2501 [0.5 credit]
Early Modern Britain
A survey of significant political and social developments in Britain from the 15th to the 18th century. (Field a).
Precludes additional credit for HIST 2500 [1.0], no longer offered.
Lectures/groups three hours a week.
HIST 2502 [0.5 credit]
Modern Britain
A survey of significant political and social developments in Britain from the 18th to the late 20th century. (Field b).
Precludes additional credit for HIST 2500 [1.0], no longer offered.
Lectures/groups three hours a week.

HIST 2506 [0.5 credit]
Introduction to Women’s and Gender History
An introductory study of women’s and gender history. Themes may include sexuality, masculinity, women’s activism, consumer culture, religion, and reproductive rights. Geographic and temporal focus varies from year to year. (Field e).
Precludes additional credit for HIST 2504 (no longer offered).
Lectures/groups three hours a week.

HIST 2508 [0.5 credit]
France since 1889
A study of the major political, social, cultural, and economic developments in France since 1889. Topics may include the Dreyfus Affair, the First and Second World Wars, Republican political culture, colonialism and decolonization, youth culture and protest, and historical memory and commemoration. (Field b).
Precludes additional credit for HIST 2505 (no longer offered).
Lectures/groups three hours a week.

HIST 2510 [0.5 credit]
19th-Century Germany
The social, cultural, and political history and impact of German nationhood. Topics include the rise of social democracy and the feminist movements, alliance and empire building, scientific racism, sexology, and the emancipation and assimilation of German Jews into the body politic. (Field b).
Precludes additional credit for HIST 2509 (no longer offered).
Lectures/groups three hours a week.

HIST 2511 [0.5 credit]
20th-Century Germany
A survey of social, cultural, and political tensions and developments in Germany from World War One to the Fall of the Berlin Wall. (Field b).
Precludes additional credit for HIST 2509 (no longer offered).
Lectures/groups three hours a week.

HIST 2600 [1.0 credit]
History of Russia
A survey of Russian history from the rise of Kievan Rus in the 10th century to post-Soviet Russia in the 21st, with emphasis on political systems and the lives of ordinary people. (Field a or b).
Lectures/groups three hours a week.

HIST 2706 [0.5 credit]
Ancient and Pre-Colonial Africa
Ancient African cultures and civilizations, the trans-Saharan trade system, and the trans-Atlantic and Indian Ocean slave trades from 600 BCE to the 19th century. (Field d).
Precludes additional credit for HIST 2705 (no longer offered).
Lectures/groups three hours a week.

HIST 2707 [0.5 credit]
Modern Africa
The conquest and colonization of African polities by the European imperial powers from the late 19th century, the 20th century wars of decolonization, and the emergence of independent African nations, including their economies, politics, and culture. (Field d).
Precludes additional credit for HIST 2705 (no longer offered).
Lectures/groups three hours a week.

HIST 2710 [0.5 credit]
Introduction to Caribbean History
Introduction to the history of the Caribbean that examines the indigenous populations, the role of colonialism and slavery in the construction of plantation societies, the impact of emancipation, and the social, cultural, economic, and political dynamics of the Caribbean in the post-emancipation period. (Field d).
Precludes additional credit for HIST 2704 (no longer offered).
Lectures/groups three hours a week.

HIST 2802 [0.5 credit]
War and Society in Modern Europe, 1789-1914
A thematic study of the experience of war and its consequences. The European country or region to be studied, will vary from year to year. (Field b).
Precludes additional credit for HIST 2801 (no longer offered).
Lectures/groups three hours a week.

HIST 2803 [0.5 credit]
War and Society in Modern Europe, 1914-1950
A thematic study of the experience of war and its consequences. The European country or region to be studied, will vary from year to year. (Field b).
Precludes additional credit for HIST 2801 (no longer offered).
Lectures/groups three hours a week.

HIST 2806 [1.0 credit]
History of Japan
A survey of Japanese history from the legendary beginning of the country in 660 B.C. to the end of World War Two. (Field a or d).
Lectures/groups three hours a week.
HIST 2809 [0.5 credit]
The Historian's Craft
Lectures and workshops on historical methods and materials. Topics will include the discovery, evaluation, use and analysis of documents in historical context, non-documentary evidence, statistics, and bibliographical tools. Includes: Experiential Learning Activity
Precludes additional credit for HIST 2808 [1.0 credit], no longer offered.
Prerequisite(s): open only to History majors with at least second-year standing.
Lectures/groups three hours a week.

HIST 2811 [0.5 credit]
Public History from Memory to Museums
Historical representation in the public arena and public engagement with the past, including archives, museums, films, novels, and video games. This course will involve online work, collaborative projects, and field trips. (Field e).
Includes: Experiential Learning Activity
Lectures three hours a week or online.

HIST 2812 [0.5 credit]
Special Subject in Public History
A lecture course on a special topic, theme, or period in public history. Topic varies from year to year. (Field e).
Lectures three hours a week.

HIST 2902 [0.5 credit]
History of Ancient Greece I
The history of ancient Greece from the Bronze Age through the Archaic period. (Field a).
Also listed as CLCV 2902.
Precludes additional credit for CLCV 2900, HIST 2900 (no longer offered).
Prerequisite(s): second-year standing or permission of the unit.
Lectures three hours a week.

HIST 2903 [0.5 credit]
History of Ancient Greece II
The history of ancient Greece from the classical period to Alexander. (Field a).
Also listed as CLCV 2903.
Precludes additional credit for CLCV 2900, HIST 2900 (no longer offered).
Prerequisite(s): second-year standing or permission of the unit.
Lectures three hours a week.

HIST 2904 [0.5 credit]
History of Ancient Rome I
The history of ancient Rome from early Rome to the end of the Republic (Field a).
Also listed as CLCV 2904.
Precludes additional credit for CLCV 2901 and HIST 2901 (no longer offered).
Prerequisite(s): second-year standing or permission of the unit.
Lectures three hours a week.

HIST 2905 [0.5 credit]
History of Ancient Rome II
The history of ancient Rome from the end of the Republic to the coming of Islam. (Field a).
Also listed as CLCV 2905.
Precludes additional credit for CLCV 2901, HIST 2901 (no longer offered).
Prerequisite(s): second-year standing or permission of the unit.
Lectures three hours a week.

HIST 2910 [0.5 credit]
Special Subject in History
A lecture course on a special topic, theme, or period. Topic varies from year to year. (Field will depend on topic).
Lectures/groups three hours a week.

HIST 2912 [0.5 credit]
Science and Technology in History
Major findings and discussions about the role of science and technology in the past. Topic and time period will vary. (Field a, b, or e).
Precludes additional credit for HIST 2911 (no longer offered).
Lectures/groups three hours a week.

HIST 2913 [0.5 credit]
History of Oil
Explores the history of oil from the ancient period to the present day. The course uses a transnational approach designed to introduce students to the interconnected histories of oil in countries across the world. (Field e).
Includes: Experiential Learning Activity
Lectures three hours a week.

HIST 3000 [0.5 credit]
Topics in Ancient History
A study of a selected topic in ancient history. (Field a).
Also listed as CLCV 3000.
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3001 [0.5 credit]
History at the Movies
Considering opportunities offered by historical feature film in the representation of the past, focusing on how historical themes and subjects have been treated in feature films, cinematic uses of the past, the role of film in shaping public memory and understanding the past. (Field e).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3005 [0.5 credit]
Medieval Aristocratic Life
A general examination of the life of European ruling elites from the ninth to the 13th century, with special reference to the Anglo-Norman and French experiences of noble power, conduct, and prestige. (Field a).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history. Lectures three hours a week.

HIST 3006 [0.5 credit]
Medieval Religious Life
A general examination of European religious life from the fourth to the fourteenth centuries, with special reference to the cultural and intellectual worlds of medieval monks, nuns, and clerics. (Field a or e).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history. Lectures three hours a week.

HIST 3007 [0.5 credit]
Medieval Intellectual Life
A general examination of medieval European intellectual life during the High and Late Middle Ages, with special reference to its setting in the cathedral school and university. (Field a or e).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history. Lectures three hours a week.

HIST 3009 [0.5 credit]
Studies in Greek History
Study of a period or theme in Greek History. (Field a). Also listed as CLCV 3201.
Prerequisite(s): CLCV 2902 and CLCV 2903 or HIST 2902 and HIST 2903 or permission of the unit. Permission of the unit is required to repeat this course. Lectures three hours a week.

HIST 3010 [0.5 credit]
The Later Roman Empire
The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire. (Field a). Also listed as CLCV 3010.
Precludes additional credit for HIST 3002 (no longer offered).
Prerequisite(s): a 2000-level Classical Civilization course. Lecture three hours a week.

HIST 3011 [0.5 credit]
Studies in Roman History
Study of a period or theme in Roman History. (Field a). Also listed as CLCV 3202.
Prerequisite(s): CLCV 2904 and CLCV 2905 or HIST 2904 and HIST 2905 or permission of the unit. Permission of the unit is required to repeat this course. Lectures three hours a week.

HIST 3102 [0.5 credit]
Queer(ing) Archives
Examination of the archival turn in historical and theoretical perspective with an emphasis on sexuality, race, and gender as subjectivities in queer, trans, and colonial archives. Also listed as SXST 3106.
Prerequisite(s): third-year standing. Seminar three hours a week.

HIST 3105 [0.5 credit]
Renaissance Europe
The political and cultural history of Europe in the fourteenth, fifteenth and sixteenth centuries, with emphasis on the Italian Renaissance and its diffusion into England and France. (Field a).
Precludes additional credit for HIST 2105 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3106 [0.5 credit]
Social History of Sexuality
Sexuality in Western society, Middle Ages to the present. Themes include attitudes and behaviour; regulation of sexuality; gender; heterosexuality and homosexuality; prostitution; pornography; the politics of sex: stresses continuities and changes and the understanding of sexuality in contexts of place, class, gender, culture. (Field a).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3109 [0.5 credit]
Social History of Alcohol
Alcohol in Western society from Ancient times to the present. Production, trade, and consumption of alcohol; religious and social significance; class, gender, and health; drinking cultures; policies toward drunkenness, and alcoholism. Specific topics include comparative trends, temperance movements, and prohibition. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3110 [0.5 credit]
The Cultural History of Food
Food in its agrarian, economic and cultural context from late antiquity to the nineteenth century; production, distribution, and consumption; health, diet and manners; the religious significance of food; food in art; the rise of the restaurant; the birth of gastronomy. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3111 [0.5 credit]
History of Humanitarian Aid
History of humanitarian activities and agencies, both governmental and non-governmental, with particular attention to Canadian involvement. The first half is devoted to early humanitarian traditions, the second to specific agencies such as the Red Cross, Oxfam, Christian Aid, Save the Children and UNICEF. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3113 [0.5 credit]
Revolution and Society in France, 1789-1799
A survey of the French Revolution (1789-99) focusing on attempts to regenerate France and the French through political, economic and cultural reforms. Themes include nationalism, republicanism, violence, legal reform, property redistribution, education, population and family policy, gender, and religion. (Field b).
Precludes additional credit for HIST 3108 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3115 [0.5 credit]
Childhood and Youth in History
The role of childhood and youth in modern history. Topics may include children’s and young people’s relationship to work, education, play, sexuality, the welfare state, war, politics, delinquency, leisure, migrations, and popular culture. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3116 [0.5 credit]
History of Disability
History of disability including the representation and understanding of disability as it changes over time and as it is portrayed and experienced in changing cultural contexts. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history or in Disability Studies.
Lectures three hours a week.

HIST 3120 [0.5 credit]
History of the Body
The ways in which the human body has been viewed, interpreted, controlled, tended, healed, exercised, measured, pleasured, clothed, and reproduced to create representations of social, political, and cultural relationships. Regions and periods will vary. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3205 [0.5 credit]
Canadian Business History
The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business-government relations). (Field c).
Also listed as BUSI 4608.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3206 [0.5 credit]
Place and Politics in Canadian History
An exploration of selected topics in the history of one of Canada's regions. Topic varies from year to year. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3209 [0.5 credit]
Canadian Urban History
Introduction to urban growth and development in Canada. The historical basis of the urban pattern and its influence in Canada and the internal structure and institutions of Canadian cities. Ottawa is used as a case study. (Field c).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3213 [0.5 credit]
The Enlightenment
The Enlightenment as a movement to establish a scientific approach to investigating human society. The focus is on Britain as the leading commercial society. Course work concentrates on close readings of primary texts. Representative figures include David Hume, Adam Smith, Mary Wollstonecraft. (Field e).
Precludes additional credit for HIST 3201 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3214 [0.5 credit]
The Enlightenment and Its Aftermath
An intellectual and cultural history of Enlightenment and post-Enlightenment study of human society. Course work concentrates on close reading of significant primary texts. Representative figures include Burke, Kant, Malthus, Mill, Tocqueville. (Field e).
Precludes additional credit for HIST 3201 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3215 [0.5 credit]
Ancient Greek Science
The history of Greek physical science from the Presocratics to Ptolemy. (Field a or e).
Also listed as CLCV 3215.
Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3216 [0.5 credit]
The Scientific Revolution
The history of astronomy and physics from Copernicus to Newton. (Field b or e).
Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3217 [0.5 credit]
Empire and Globalization
Varieties of European imperialism from the early modern period to the present. The role of imperialism and anti-imperialism in the development of globalization and European modernity. Comparison of various empires and the transnational linkages between them. (Field b).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3220 [0.5 credit]
Canadian Economic History
A survey of Canadian economic history from the sixteenth century to the present. (Field c or e).
Also listed as ECON 3220.
Precludes additional credit for ECON 2305 or HIST 2305 (no longer offered), ECON 3203 (no longer offered), ECON 3202 or HIST 3202 (no longer offered), and ECON 3207 or HIST 3204 (no longer offered).
Prerequisite(s): ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

HIST 3230 [0.5 credit]
Selected Topics in Economic History
An examination of the economic development of North America or Europe or other possible selected sets of countries. Countries examined vary from year to year. (Field e).
Also listed as ECON 3230.
Precludes additional credit for ECON 3005 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

HIST 3301 [0.5 credit]
Quebec Since 1800
A social, economic, political, cultural and intellectual history of Quebec with emphasis on the development of Quebec nationalism. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3304 [0.5 credit]
Canada-United States Relations
An examination of diplomatic, economic, cultural and military relations, with particular attention to the twentieth century. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3305 [0.5 credit]
Crime and State in History
The history of the relationship between the criminal law system and society. Changing issues in the criminal law and the nature of institutional responses, covering medieval to early nineteenth-century England and nineteenth to early twentieth-century Canada. (Field e).
Also listed as LAWS 3305.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3306 [0.5 credit]
Canada's International Policies
The development of Canadian attitudes and policies toward international affairs, with emphasis on the 20th century. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3310 [0.5 credit]
Animals in History
A historical survey of relations between humans and other animals. Topics may include history of domestication; hunting; display of animals in zoos, museums and wildlife films; biotechnology; animal welfare movements; companion species; animals as symbols; question of animal agency. (Field c or e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3406 [0.5 credit]
African-American Women
An examination of aspects of the social, cultural, and political history of African-American women since the eighteenth century. (Field c or e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3410 [0.5 credit]
**Popular Culture in the U.S.**
The development of popular culture in the United States. Focusing on a selected theme or time period, the course will examine how popular culture both shaped and reflected broader historical and social developments. Topics may include music, theatre, public entertainments, movies, and television. (Field c).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Lectures three hours a week or online.

HIST 3412 [0.5 credit]
**Ideas, Culture, and Society in U.S. History**
The intellectual, social, and cultural production of the United States, focusing on, among other things, a series of creative tensions: tradition versus modernity; rural versus urban; white versus black; masculine versus feminine; homogenous versus cosmopolitan. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3413 [0.5 credit]
**The United States and Its Borderlands**
A history of the United States, focusing on the interactions along and across its borders with Mexico, Canada, and the Pacific Rim. This course examines the contests that emerged over colonization, migration, and American state-making. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3414 [0.5 credit]
**The United States in the World**
The history of the US in a global context. Time period will vary, topics could include world revolutions, imperialism and decolonization, immigration, transnational flows of ideas and people, war, peace, urbanization, capitalism, international law, and the environment. (Field c).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Lectures three hours a week or online.

HIST 3500 [0.5 credit]
**Migration and Diaspora in Canada**
A study of migration and settlement in Canada from the 17th century to the present. (Field c).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3505 [0.5 credit]
**Women in Canada**
Selected issues in the history of women in Canada. Themes include women and war, aboriginal women's history, sexuality, the women's movement, immigration, and motherhood. Attention will be paid to the social construction of gender and the intersections of gender with class, ethnicity, race. (Field c).
Prerequisites: a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3507 [0.5 credit]
**An Immigrant's Guide to Canada**
A course that critically engages with programs designed to assist the settlement and integration of newcomers to Canada as well as the lived experiences of immigrants and ethnic and diasporic groups in the Canadian context. (Field c).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Seminars three hours a week.

HIST 3510 [0.5 credit]
**Indigenous Peoples of Canada**
A survey of indigenous histories in northern North America from earliest times to the present. The course will cover pre-contact histories; military, economic, social, and cultural encounters with newcomers; indigenous experiences with settler colonialism; and the struggle over decolonization. (Field c).
Prerequisites: additional credit for HIST 3503 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3511 [0.5 credit]
**Themes in Indigenous History**
Key themes in the history of North America’s indigenous peoples. Topics may include land and treaties, religious encounters, the law, cultural identity, and transnational indigenous experiences (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3515 [0.5 credit]
**Madness in Modern Times**
History of insanity from the eighteenth to the twentieth century. Themes include changing public and medical understandings of madness, patients’ experiences and artistic portrayals of mental hospital life, cultural representations of madness in various media, and the history of the asylum. (Field e).
Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.
Online course.
HIST 3604 [0.5 credit]
Gender and Sexuality in Modern Europe
Exploration of gender, sexuality, and women’s history in Modern Europe. (Field b or e).
Precludes additional credit for HIST 3603 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3704 [0.5 credit]
Aztecs
An examination of the Aztec social system, culture, religion, and philosophy both before and after the Spanish conquest. (Field a or d).
Prerequisite(s): A 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3708 [0.5 credit]
Reformation Europe
A history of the Protestant and Catholic Reformations of the sixteenth century, with special emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era. (Field a).
Also listed as RELI 3220.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3710 [0.5 credit]
Themes in Caribbean History
Key themes in the making of the Caribbean. Topics may include slavery and emancipation, Indian and Chinese migration, colonialism, the independence movement, and race relations. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3712 [0.5 credit]
Mexico: Aztecs to Narcos
An examination of the social and cultural history of Mexico from indigenous cultures to the problems of the 20th century. Themes include the continuities of indigenous structures, national identity, wars and political violence, and gender. (Field d).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3713 [0.5 credit]
Gender and Sexuality in Latin America
An exploration of gender and sexualities in Latin America from the pre-conquest period to the end of the twentieth century. (Field d or e).
Precludes additional credit for HIST 3705 and HIST 3707 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3714 [0.5 credit]
Holocaust Encounters
An examination of the experiences of different Jewish communities before, during, and after the Holocaust. Issues to be discussed include antisemitism, relations with non-Jewish neighbors, perpetrator motivation, local collaboration, resistance, postwar trials, and memory. (Field b).
Also listed as RELI 3140.
Prerequisite(s): a 2000-level History course or third-year standing and 1.0 credit in History.
Lectures three hours a week.

HIST 3715 [0.5 credit]
Themes in South Asian History
Key themes in South Asian history. Topics may include the Mughal empire, the British colonial era, the creation and development of states in India, Pakistan, Bangladesh, and Sri Lanka, and various 20th century historical phenomenon. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3717 [0.5 credit]
Gender and Sexuality in Africa
An exploration of gender and sexualities in Africa from the beginning of colonial rule until the beginning of the 21st century. (Field d or e).
Precludes additional credit for HIST 3711 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3719 [0.5 credit]
South African War, 1899-1902
Examines causes, major events and consequences of the war. Themes include: the war as part of the Scramble for Africa, emergence of settler nationalism, British “scorched earth policy”, establishment of concentration camps, importance of gender, African involvement, international responses, and long-term effects. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.
HIST 3800 [0.5 credit]
International History 1914-41
A survey of international history from the First World War to the outbreak of the Second World War, focusing on peacemaking, inter-war diplomacy, anti-imperialism, global capitalism, migration, labour, and the origins of the Second World War. (Field b).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3801 [0.5 credit]
International History 1941-90
A survey of international history from the Second World War to the end of the Cold War that examines the conflict over the reconstruction of the postwar world, including decolonization, emergence of the European Union, and other dimensions of global order and disorder. (Field b).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3805 [0.5 credit]
Twentieth-Century China
A political history of China from the 1911 Revolution to the present. Emphasis on the development of Chinese communism and the People's Republic since 1949. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3806 [0.5 credit]
Japan Since 1945
A political, intellectual and economic history of Japan in the twentieth century, concentrating on the period since the end of the Pacific War. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3807 [0.5 credit]
Practicum in History
An historical research project in a museum or public institution in the Ottawa area conducted under the supervision of the external institution and the History Department. Work includes reading, reports, and meetings. Students should be prepared to devote one day a week to the project.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in a History program, a CGPA of 9.00 or better in history courses, and permission of the Department.

HIST 3809 [0.5 credit]
Historical Representations
An examination of how historical narratives have been produced in relation to sites of public memory. The public presentation of history through a wide range of themes, which may include museum exhibits, commemorations and popular culture. (Field e).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3810 [0.5 credit]
Historical Theory
An examination of a wide range of theoretical approaches to history, and a critical reflection on history as a discipline.
Prerequisite(s): HIST 2809 or permission of the Department.
Lectures two hours a week and one hour discussion group.

HIST 3811 [0.5 credit]
History of Historical Thought
An examination of questions concerning the nature and value of historical inquiry and the meaning of the course of history. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3812 [0.5 credit]
Digital History
The digital representation of history, exploring the approaches, issues, and methods of working in this environment. Topics may include gaming, virtual environments, digital research tools, public digital history. (Field e).
Includes: Experiential Learning Activity
Also listed as DIGH 3812.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3813 [0.5 credit]
Problems in Global and Transnational Histories
Historical encounters across geographical regions and ways in which historians studied them. Categories of "national," "international," "transnational," "world," and "global" history will be evaluated. Themes include: imperialism, postcolonialism, the environment, migration, trade, religion, the body, war, culture, disease. (Field d or e).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history including at least 0.5 credit in Field d courses (Asia, Africa, the Caribbean, and Latin America).
Lectures three hours a week.
HIST 3814 [0.5 credit]
Crafting Digital History
This course applies the creative use of information and media/computing technologies to address the digital cultural heritage issues of public historians, archaeologists, and anthropologists. Topics may include webscraping, data mining, designing and implementing research databases, and visual storytelling of those results. (Field e).
Includes: Experiential Learning Activity
Also listed as DIGH 3814.
Precludes additional credit for HIST 3907 Section "B" offered in winter 2015 and HIST 3907 Section "O" offered in winter 2016.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week or online.

HIST 3815 [0.5 credit]
Group Practicum
A class-based group historical research project done in collaboration with an external institution under the supervision of the institution and the Department. Work includes readings, reports, and meetings. Students should be prepared to devote one full day per week to the project. (Field e).
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in a History program and permission of the Department.

HIST 3820 [0.5 credit]
Explorations in Historical Theory
Taking a specific historical topic as its focus, this course examines how historians have applied a wide range of theoretical approaches in order to understand and interpret that topic's historical significance. Topics will vary.
Prerequisite(s): HIST 2809, or permission of the unit.
Lectures two hours a week and one hour discussion group.

HIST 3902 [0.5 credit]
Topics in European History
A lecture course on a special topic in European history. Topic varies from year to year. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3903 [0.5 credit]
Topics in Canadian History
A lecture course on a special topic in Canadian history. Topic varies from year to year. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3904 [0.5 credit]
Topics in U.S. History
A lecture course on a special topic in United States history. Topic varies from year to year. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3905 [0.5 credit]
Topics in International History
A lecture course on a special topic in international political or economic history. Topic varies from year to year. (Field b).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3906 [0.5 credit]
Topics in World History
A lecture course on a special topic in African, Asian, Caribbean, or Latin American history. Topic varies from year to year. (Field d).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3907 [0.5 credit]
Transnational Topic
A lecture course on a special topic that takes a transnational approach to history. Course content will vary from year to year. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3908 [0.5 credit]
Thematic Topic
A lecture course on a special topic that takes a thematic approach to history. Course content will vary from year to year. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3909 [0.5 credit]
Topic in Public History
A lecture course on a special topic, theme, or period in public history. Topic varies from year to year. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
HIST 4006 [1.0 credit]
Seminar in Medieval History
An examination of a selected problem in the history of medieval Europe.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4007 [0.5 credit]
Medieval History
Selected topic in Medieval History. The topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4100 [1.0 credit]
Seminar in Early Modern European History
A study of a selected problem in the history of Europe during the early modern period.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4101 [0.5 credit]
Early Modern European History
Selected topic in the history of Europe during the early modern period. The topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4200 [1.0 credit]
Seminar in European History
Examination of a selected problem or period in the history of Continental Europe.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4201 [0.5 credit]
Modern European History
Selected topic in the history of Europe. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4210 [0.5 credit]
Topics in Ancient History
Intended for Honours students in History and Classics who should normally be in their third- or fourth-year.
Also listed as CLCV 4210.
Precludes additional credit for CLCV 4209, HIST 4209 (no longer offered).
Prerequisite(s): CLCV 2902 (HIST 2902) and CLCV 2903 (HIST 2903) or CLCV 2904 (HIST 2904) and CLCV 2905 (HIST 2905) or CLCV 3201 (HIST 3009) or CLCV 3202 (HIST 3101) or permission of the Department.
Seminar three hours a week.

HIST 4302 [1.0 credit]
Canada: Ideas & Culture
A seminar on ideas, culture, and society in Canada.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4303 [0.5 credit]
Society and Culture in Canada
A 0.5 credit seminar course that examines a selected topic on ideas, culture, and society in Canada. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History, or permission of the Department.
Seminar three hours a week.

HIST 4304 [1.0 credit]
Canada: Politics & Society
A seminar on politics and society in Canada.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4305 [0.5 credit]
Political History in Canada
A 0.5 credit seminar course that examines a selected topic on politics and society in Canada. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4400 [1.0 credit]
Seminar in U.S. History
An examination of a selected problem or period in the history of the United States.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.
HIST 4401 [0.5 credit]
United States History
A 0.5 credit seminar course that examines a selected topic in the history of the United States. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4500 [1.0 credit]
Seminar in British History
An explanation of a selected problem or period in the history of Great Britain.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4501 [0.5 credit]
British History
An explanation of a selected problem or period in the history of Great Britain.
Includes: Experiential Learning Activity
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4505 [1.0 credit]
Seminar in Women's and Gender History
A seminar on the history of women and gender. The particular approach, themes, and historical period will be specified each year.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4506 [0.5 credit]
Gender, Sexuality and Women's History
A 0.5 credit seminar course that examines a selected topic on the history of women and gender. The particular topic will be specified each year it is offered.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4600 [1.0 credit]
Seminar in Russian History
An examination of a selected problem or period in the history of Imperial or post-Imperial Russia.
Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4604 [0.5 credit]
Central Europe, Past and Present
Evolution and current status of Central Europe from periods of foreign control in the late nineteenth and twentieth centuries to independent statehood. Particular emphasis will be placed on national accommodations and conflicts.
Also listed as EURR 4204.
Prerequisite(s): HIST 3810, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4605 [0.5 credit]
The Balkans in Transition – 1918 to 1989
The seminar uses the concept of transition to understand the Balkan encounter with modernity and Europe. Key periods to be examined include the interwar era and the period of communist rule, with an emphasis on political, social and economic themes.
Also listed as EURR 4101.
Prerequisite(s): fourth-year standing and one of PSCI 3704, PSCI 3208, PSCI 3209, HIST 2600; or permission of the Department.
Seminar three hours a week.

HIST 4606 [0.5 credit]
Contemporary Europe: From Postwar to the European Union
History of contemporary Europe from 1945 to present covering both eastern and western halves of the continent and including social, cultural, political, and economic dimensions.
Includes: Experiential Learning Activity
Also listed as EURR 4303.
Prerequisite(s): HIST 3810, fourth-year standing in Honours History or permission of the Department.
Seminars three hours a week.

HIST 4607 [0.5 credit]
Imperial Russia and the Russian Revolution
Examination of the expansion and downfall of tsarist Russia from the eighteenth century to the revolutionary era and the establishment of Bolshevik rule. Topics include the relationship between the monarchy and subject peoples, social and economic change, and daily life.
Includes: Experiential Learning Activity
Also listed as EURR 4305.
Also offered at the graduate level, with different requirements, as HIST 5607, for which additional credit is precluded.
Seminar three hours a week.
HIST 4608 [0.5 credit]
The Soviet Union
Examination of the rise of the Soviet Union to a global power and subsequent tensions that promoted its collapse. The course will analyze Stalinism, the Second World War, the Thaw, and Brezhnev and Gorbachev eras through the lens of the USSR’s citizens. Includes: Experiential Learning Activity
Also listed as EURR 4306.
Also offered at the graduate level, with different requirements, as HIST 5608, for which additional credit is precluded.
Seminar three hours a week.

HIST 4700 [1.0 credit]
Seminar in World History
An examination of a selected problem or period in the history of Asia, Africa, the Caribbean or Latin America. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4701 [0.5 credit]
African History
A 0.5 credit seminar course that examines a selected topic in the history of Africa. The particular topic will be specified each year it is offered. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4702 [0.5 credit]
South Asian History
A 0.5 credit seminar course that examines a selected topic in the history of South Asia. The particular topic will be specified each year it is offered. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4703 [0.5 credit]
The Global South
A 0.5 credit seminar course that examines a selected topic in the history of the Global South. The particular topic will be specified each year it is offered. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4704 [0.5 credit]
Caribbean and Latin American History
A 0.5 credit seminar course that examines a selected topic in Caribbean and Latin American history. The particular topic will be specified each year it is offered. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4705 [0.5 credit]
Asian History
A 0.5 credit seminar course that examines a selected topic in the history of Asia. The particular topic will be specified each year it is offered. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4802 [1.0 credit]
Seminar in International History
An examination of a selected problem or period in the history of international relations. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4805 [1.0 credit]
Seminar on a Transnational or Thematic Topic
A seminar on a transnational or thematic topic. The particular topic will be specified each year. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4806 [0.5 credit]
Global, Transnational, or Thematic History
Selected topic in global and transnational history or on a thematic topic in history. The topic will be specified each year it is offered. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4910 [1.0 credit]
Honours Research Project
The project will be a substantial piece of original research conducted under the supervision of a faculty member in History. The medium of presentation will be agreed upon between student and supervisor, and may include a research paper, a documentary film, or a web-based project. Includes: Experiential Learning Activity
Precludes additional credit for HIST 4908, HIST 4909 (no longer offered). Prerequisite(s): fourth-year standing in History Honours program, a minimum GPA of 9.0 (B+) in the History major, and permission of the department, or in exceptional circumstances with permission of the department only.

HIST 4915 [0.5 credit]
Topics in History
Intended for Honours students in History. Topics will vary from year to year. Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department. Seminar three hours a week.
HIST 4916 [0.5 credit]
Topic in Public History
Topics will vary from year to year. (Field e).
Prerequisite(s): HIST 2811, HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

HIST 4920 [1.0 credit]
Seminar in Public History
Topics will vary from year to year. (Field e).
Prerequisite(s): HIST 2811, HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.
Seminar three hours a week.

Human Rights (HUMR)

Human Rights (HUMR) Courses

HUMR 1001 [1.0 credit]
Introduction to Human Rights
Human rights from an interdisciplinary perspective. Topics may include the foundations and nature of rights, roots of inequality and oppression, aboriginal rights, racism, women and rights, sexual orientation, state and corporate power, economic exploitation, the environment and rights, warfare, torture, and social movements.
Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1104.
Lecture and discussion groups/tutorials three hours a week.

HUMR 2001 [0.5 credit]
Human Rights: Theories and Foundations
Historical overview of the theoretical and philosophical approaches underlying the human rights movement and relevant to the normative ideals and aspirations of human rights and to the strategies of their implementation.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion groups/tutorials three hours a week.

HUMR 2102 [0.5 credit]
Sexuality, Gender, and Security
Historical and contemporary analysis of surveillance, security, and regulation of sexuality, race, class, and gender. Students will critically examine how ‘subversives’ were created through discourse and administrative logics such as policy and law.
Includes: Experiential Learning Activity
Also listed as SXST 2102.
Prerequisite(s): second year standing or permission from the Institute.
Lectures and discussions three hours a week.

HUMR 2202 [0.5 credit]
Power Relations and Human Rights
The study of power from a critical, transnational perspective; the impact on human rights of different forms and modalities of power, including those emanating from the state and corporations and those implicated in socio-economic and other hierarchical relations.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion groups/tutorials three hours a week.

HUMR 2301 [0.5 credit]
Human Rights and Sexualities
Human rights issues in various cultural contexts concerning sex and/or gender, with attention to sexual minorities such as gay, lesbian, and transgendered persons. Forms of discrimination against sexual minorities and the mechanisms and strategies for redress.
Prerequisite(s): second-year standing.
Lectures and discussion groups three hours a week.

HUMR 2401 [0.5 credit]
Political Repression
Canada is home-in-exile to many who have faced severe and often life-threatening political repression such as imprisonment, torture, surveillance, population transfer, etc. This course examines the impacts on survivors of political repression, and strategies used to overcome its legacies.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion groups three hours a week.

HUMR 2502 [0.5 credit]
Social and Political Movements
The underlying conditions and developments of historical and contemporary social and political movements; specific social movements such as civil rights or gay rights.
Prerequisite(s): second-year standing.
Lectures and discussion groups three hours a week.

HUMR 3001 [0.5 credit]
Special Topics in Human Rights
This advanced seminar will cover current and topical issues and/or debates in human rights, and will enable students to engage in focused discussions and analyses of these issues. Topics will vary from year to year.
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3002 [0.5 credit]
Right to the City
“The right to the city” as an emerging focus of advocacy and analysis in urban movements for social justice around especially the local and transnational dimensions of the “right to the city” movement.
Precludes additional credit for HUMR 3001 if taken prior to 2013-14.
Prerequisite(s): third year standing.
Lectures three hours a week.
HUMR 3202 [0.5 credit]
Human Rights and Resistance
This course problematizes human rights paradigms and critically examines the limitations of the political within liberal democracies. Bringing together theory and politics, alternative approaches to activism are explored. Topics may include struggles grounded in radical democracy, anti-capitalism, and social justice perspectives.
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3301 [0.5 credit]
Racialization, Racism and Human Rights
The forms and effects of systemic race-based human rights abuses. Topics may include immigration and refugee policies and practices, anti-apartheid regimes, racial profiling, the racial politics of "nationhood" and armed conflict, civil rights and resistance movements in differing cultural contexts.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Seminar and discussion groups three hours a week.

HUMR 3302 [0.5 credit]
Culture, Religion, and Women's Human Rights
The impact of cultural and religious traditions on gender, race, ethnicity and sexuality. Topics may include debates related to power dynamics, historical issues, geopolitics, and cultural relativism.
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3303 [0.5 credit]
Children's Rights
This course examines children’s rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts.
Includes: Experiential Learning Activity
Also listed as CHST 3303.
Prerequisites: CHST 3901 (no longer offered).
Prerequisite(s): third-year standing.
Lectures and discussion groups three hours a week.

HUMR 3304 [0.5 credit]
Disability Rights
A critical approach to the study of disability rights that explores the intersections of disability with race, sexuality, gender, colonialism, 'health', and other discourses.
Prerequisites: HUMR 4303 (no longer offered).
Prerequisite(s): third-year standing.
Lecture three hours a week.

HUMR 3401 [0.5 credit]
Histories of Persecution and Genocide
Case studies in persecution and/or genocide in different cultural contexts. The social, political, and legal conditions that have enabled the institutional or state-sanctioned persecution of targeted groups, and the circumstances that had an impact on their decline.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3501 [0.5 credit]
Social, Economic and Cultural Rights
The development of social, economic and cultural rights, including rights to housing, healthcare, education and employment. Topics may include the international geopolitics of the historical tension between these rights and civil and political rights.
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 3503 [0.5 credit]
Global Environmental Justice
Overview of critical debates on environmental issues from a global social justice perspective. Topics may include corporate mining, food sovereignty, poverty, economic exploitation, Indigenous cosmologies and environmental justice, militarization and environmental degradation, privatization of water and climate change.
Prerequisite(s): third-year standing.
Lectures and discussion groups three hours a week.

HUMR 3504 [0.5 credit]
Public Health and Human Rights
Through a social-scientific analysis of AIDS, this course explores HIV/AIDS as a case study for understanding the politics of public health. Students will critically interrogate the authority of science and explore avenues for democratizing biomedicine and public health policy in various national and policy contexts.
Includes: Experiential Learning Activity
Precludes additional credit for HUMR 3001 Section "A" if taken in 2013-14 and 2014-15.
Prerequisite(s): third-year standing.
Lectures three hours a week.

HUMR 4201 [0.5 credit]
Citizenship and Human Rights
The relationship between citizenship and human rights; how large groups of people, including non-citizens and refugees, are excluded from entitlements to rights. Why human rights rest on citizenship, and with what implications.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.
HUMR 4302 [0.5 credit]
Transgender Human Rights
Critical analyses of human rights through an examination of transgender subjectivities. The systemic erasure of trans people within society and the struggles of some activists to normalize trans identities. Prerequisite(s): fourth-year standing. Seminar three hours a week.

HUMR 4305 [0.5 credit]
Disability and Social Justice
An intersectional national/transnational approach to social justice issues such as poverty/exploitation, labour, representation, decolonization, race/racism, sexuality and gender from a critical disability studies perspective. Prerequisite(s): fourth-year standing in Human Rights or Disability Studies. Seminar three hours a week.

HUMR 4401 [0.5 credit]
Gender, Citizenship and Social Justice in a Transnational World
This seminar critically engages with transnational, gendered, classed, and racialized discursive practices of citizenship, human rights, the geopolitics of knowledge and processes of dehumanization through the lenses of decolonial social justice. Prerequisite(s): fourth-year standing. Seminar three hours a week.

HUMR 4404 [0.5 credit]
Rights of Refugees and Displaced Persons
Contemporary issues concerning the rights of refugees and displaced persons, from social, political, and legal perspectives; Canadian and international dimensions of these issues. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing. Seminar and discussion groups three hours a week.

HUMR 4409 [0.5 credit]
Counter-terrorism and Human Rights
Examines policies and strategies states and international organizations use to combat global terrorism and the challenges these initiatives pose to the international human rights regime, democratic norms, and social justice. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing. Seminar three hours per week.

HUMR 4502 [0.5 credit]
Global Indigenous Knowledges and Movements
Indigenous Peoples contributions to world knowledge through community resistance, social movements and scholarship. How processes of corporate globalization impact Indigenous Peoples lives as an ongoing process of normalizing a reconfigured modern coloniality of power. Prerequisite(s): fourth-year standing. Seminar three hours a week.

HUMR 4905 [0.5 credit]
Practicum Placement in Human Rights I
This course provides students with the opportunity to spend one day per week (6-8 hours) working and learning at a human rights-related government, research or advocacy organization. A written report is required at the end of the placement. Graded as Sat/Uns. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in Human Rights or permission of the Institute.

HUMR 4906 [0.5 credit]
Practicum Placement in Human Rights II
This course provides students with the opportunity to spend one day per week (6-8 hours) working and learning at a human rights-related government, research or advocacy organization. A written report is required at the end of the placement. Graded as Sat/Uns. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in Human Rights and a GPA of 9.8 or higher or permission of the Institute.

HUMR 4907 [0.5 credit]
Special Topic in Human Rights
This course features a detailed study of a special topic in any area of Human Rights. Topics and themes will vary from year to year. Prerequisite(s): fourth-year standing. Seminar three hours a week.

HUMR 4908 [0.5 credit]
Independent Study
Essays and/or examinations based on a bibliography constructed by the student in consultation with an instructor. Includes: Experiential Learning Activity Prerequisite(s): normally restricted to students with at least 3.0 credits of Human Rights courses with at least a CGPA of 9.0 or better in Human Rights courses and permission of the Institute.

Humanities (HUMS)

Humanities (HUMS) Courses

HUMS 1000 [1.0 credit]
Myth and Symbol
Recurring symbols in myth, epic and ritual representing the relation between the sacred and the profane, the origin of the cosmos, the basis of community, and formative human experiences. Primary sources drawn from ancient India and China, Mesopotamia, the Hebrew Bible, and Indigenous cultures. Prerequisite(s): restricted to students in the Bachelor of Humanities program. Lectures three hours a week and tutorials one and a half hours a week.
HUMS 1005 [0.5 credit]
Early Human Cultures
Cultural experiences of small scale societies, including kinship, rituals, magic, social structure, and subsistence. Reading may include the works of classic anthropologists such as Maine, Tylor, Morgan, and Boas. Precludes additional credit for ANTH 1001 and ANTH 1003. Prerequisite(s): restricted to students in the Bachelor of Humanities program. Lectures three hours a week.

HUMS 1200 [0.5 credit]
Humanities and Classical Civilisation
The ideas which animated ancient Greek and Roman civilisation and which influenced later western cultural movements through a reading of literary, historical, and philosophical works. Authors include Homer, Herodotus, Thucydides, the Greek Tragedians, Plato, Vergil, and Cicero. Prerequisite(s): restricted to students in the Bachelor of Humanities program. Lecture three hours a week.

HUMS 1500 [0.5 credit]
Introduction to the Humanities: Five Books that Changed the World
A reading-intensive course on five influential books from Antiquity to the present day. Works may include the Bible, the Bhagavad Gita, Homer’s Odyssey, Plato’s Republic, Dante’s Inferno, Machiavelli’s The Prince, Shakespeare’s Hamlet, Mary Shelley’s Frankenstein, Nietzsche’s Beyond Good and Evil, Marx’s Communist Manifesto. Prerequisite(s): enrolment in a degree program in the Faculty of Arts and Social Sciences, or the Faculty of Public Affairs. Students enrolled in the BHum. program are not eligible to register in this course. Lecture three hours per week.

HUMS 2000 [1.0 credit]
Reason and Revelation
The origins of philosophy in ancient Greece and its pursuit in the medieval West, with special attention to knowledge, happiness, and love. Readings include works by Plato, Aristotle, Plotinus, Augustine, Boethius, Aquinas, and Dante. Prerequisite(s): HUMS 1000 and enrolment in the Bachelor of Humanities program. Lectures three hours a week and tutorials one and a half hours a week.

HUMS 2101 [0.5 credit]
Art from Antiquity to the Medieval World
A chronological and thematic survey of the Arts from the earliest times to ca. 1400. Precludes additional credit for HUMS 4101 (no longer offered). Prerequisite(s): restricted to students in the Bachelor of Humanities program. Lecture three hours a week.

HUMS 2102 [0.5 credit]
Modern European Art 1527-2000
A chronological and thematic survey of the Arts from the sixteenth to the twenty-first century. Precludes additional credit for HUMS 4101 (no longer offered) and HUMS 3101 (no longer offered). Prerequisite(s): HUMS 2101 and restricted to students in the Bachelor of Humanities program. Lectures three hours a week.

HUMS 3000 [1.0 credit]
Culture and Imagination
Major forms of literary, artistic, and philosophical expression from 1500-1800. Sources drawn from renaissance humanism, reformation theology, enlightenment and romantic philosophy. Prerequisite(s): HUMS 2000 and enrolment in the Bachelor of Humanities program. Lectures three hours a week and tutorials one and a half hours a week.

HUMS 3102 [0.5 credit]
Western Music 1000-1850
Introduction to basic theory, harmony, history and interpretation of Western music including the Medieval, Renaissance, Baroque, Classical and early Romantic periods. Includes: Experiential Learning Activity Precludes additional credit for HUMS 4102 (no longer offered). Prerequisite(s): restricted to students in the Bachelor of Humanities program. Lecture three hours a week.

HUMS 3103 [0.5 credit]
Western Music 1850-2000
Western music from the mid-nineteenth century to the present with emphasis on the seminal contributions of Liszt, Wagner, Mahler, Debussy, Stravinsky, Schönberg and others. Includes: Experiential Learning Activity Precludes additional credit for HUMS 4102 (no longer offered). Prerequisite(s): HUMS 3102 and restricted to students in the Bachelor of Humanities program. Lecture three hours a week.

HUMS 3200 [1.0 credit]
European Literature
Major movements and works from Dante’s Divine Comedy through Voltaire’s Candide. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project. Also listed as ENGL 3201. Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program. English students should have third-year standing with a GPA of B or above. Lectures three hours a week.
HUMS 3500 [0.5 credit]
Ancient and Medieval Intellectual History
Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from Archaic Greece to the High Middle Ages. Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor. Lectures three hours a week.

HUMS 3550 [0.5 credit]
Renaissance and Early Modern Intellectual History
Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from the Early Renaissance to 1800. Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor. Lectures three hours a week.

HUMS 4000 [1.0 credit]
Politics, Modernity and the Common Good
Modern and post-modern ways of thinking and doing, including revolutionary new ideas in politics, philosophy, culture, economics, and international relations. Thinkers considered include Arendt, Foucault, Hegel, Heidegger, Hobbes, Kant, Marx, Nietzsche, Polanyi, Rousseau, Said, and Taylor. Includes: Experiential Learning Activity Prerequisite(s): HUMS3000 and enrolment in the Bachelor of Humanities program. Lectures three hours a week and tutorials one and a half hours a week.

HUMS 4001 [0.5 credit]
Directed Studies in the Humanities
A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

HUMS 4002 [0.5 credit]
Directed Studies in the Humanities
A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in the Bachelor of Humanities program and Good Standing in the program.

HUMS 4103 [0.5 credit]
Science in the Modern World
An introduction to the major scientific ideas of our time (such as Big Bang theory, molecular genetics, evolution, atomic structure), and the impact of technology on society (e.g. global warming, pollution, genetically modified foods, viral infections). Includes: Experiential Learning Activity Precludes additional credit for HUMS 4100 (no longer offered). Prerequisite(s): restricted to students in the Bachelor of Humanities program. Lectures three hours a week.

HUMS 4500 [0.5 credit]
Modern Intellectual History
Examination of some of the major ideas and ideologies from 1800 to the present, including romanticism, liberalism, nationalism, symbolism, socialism, Freudianism, communism, feminism, and postmodernism. Includes: Experiential Learning Activity Precludes additional credit for HUMS 4104. Prerequisite(s): restricted to students in the Bachelor of Humanities program. Lectures three hours a week.

HUMS 4901 [0.5 credit]
Research Seminar: Antiquity to the Middle Ages
An interdisciplinary seminar on a selected topic in the humanities from Antiquity to the Middle Ages. The topic will vary from year to year. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in the Bachelor of Humanities program. Seminar three hours a week.

HUMS 4902 [0.5 credit]
Research Seminar: Renaissance to Enlightenment
An interdisciplinary seminar on a selected topic in the humanities from the Renaissance to the Enlightenment. The topic will vary from year to year. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in the Bachelor of Humanities program. Seminar three hours a week.

HUMS 4903 [0.5 credit]
Research Seminar: Romanticism to the Present
An interdisciplinary seminar on a selected topic in the humanities from Romanticism to the present. The topic will vary from year to year. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in the Bachelor of Humanities program. Seminar three hours a week.
HUMS 4904 [0.5 credit]
Research Seminar: Non-Western Traditions
An interdisciplinary seminar on a selected topic in the humanities as expressed in aboriginal and Non-Western cultures. The topic will vary from year to year. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.
Seminar three hours a week.

Indigenous Studies (INDG)

Indigenous Studies (INDG) Courses

INDG 1000 [1.0 credit]
Introduction to Indigenous Studies
Survey of historical and contemporary issues relating to Indigenous peoples in Canada. Cultural traditions and the social interactions between Indigenous and non-Indigenous societies are approached from an interdisciplinary perspective.
Precludes additional credit for INDG 1010 and INDG 1011. Online only.

INDG 1010 [0.5 credit]
Introduction to Indigenous Peoplehood Studies
This course begins by looking at Creation Stories of different Indigenous peoples and builds to discuss Indigenous worldviews, ways of living, ecological relationships, inter-Indigenous relations and diplomacy among Indigenous peoples. Course materials are rooted in self-situated and collective understandings of Indigenous peoples.
Precludes additional credit for INDG 1000. Lecture/groups, three hours a week.

INDG 1011 [0.5 credit]
Introduction to Indigenous-Settler Encounters
An interdisciplinary examination of the history of relations between different Indigenous peoples and settler populations from first meetings to the mid-20th century. Topics vary by year, but may include diplomatic relations, trade, spirituality and religion, military alliances, policy, education.
Precludes additional credit for INDG 1000. Lecture/groups, three hours a week.

INDG 1012 [0.5 credit]
Anishinaabe Studies
An in-depth look at the Anishinaabe peoples. Topics may include: Anishinaabe creation stories, migration, the clan system, worldviews; oral, written, and recorded history; treaties, contemporary events, ecological knowing, cultural production, relations with settler-colonies and other nations, self-governance, diplomatic relations.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lecture/groups three hours a week.

INDG 1013 [0.5 credit]
Haudenosaunee Studies
Focuses on the Haudenosaunee from the founding of the Confederacy to present. Discussion of the culture, language, and structure of Haudenosaunee society, the Kaicnerkowaa (Great Law of Peace) and the Code of Handsome Lake, symbolism, and contemporary issues, including the impact of Euro-Canadian government policies.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lecture/groups, three hours a week.

INDG 1015 [0.5 credit]
Indigenous Ecological Ways of Knowing
Indigenous peoples’ relationships with the non-human world in both historical and contemporary contexts. Topics may include: the origins of Indigenous ecological ways of knowing, Indigenous languages, collective stewardship, water, land, and challenges to maintaining traditional knowledge.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lecture/groups, three hours a week.

INDG 1019 [0.5 credit]
Decolonizing Gender, Sex, and Sexuality
Effects of colonization in unbalancing Indigenous peoples’ lives through the imposition of constructions of gender, sex, and sexuality, and the ways that Indigenous peoples are working to restore balance to their families and communities. Topics vary by year.
Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.
Lecture/groups, three hours a week.

INDG 2010 [0.5 credit]
Indigenous Drama
A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors and other practitioners. Also listed as ENGL 2709.
Prerequisite(s): second-year standing or permission of the School.
Lecture three hours per week.
INDG 3001 [0.5 credit]
Indigenous Governance
An examination and discussion of different Indigenous forms of governance. Topics will vary by year and may include: Indigenous ways of knowing and forms of governance, community leadership, diplomatic relations, and struggles for self-determination. Precludes additional credit for INDG 3000 (no longer offered). Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours per week.

INDG 3011 [0.5 credit]
Indigenous Rights, Resistance, and Resurgence
Indigenous approaches to restoring balance within their nations. Topics include: direct action; political organizing; land claims; rights, courts, and legal action; everyday acts of resistance and resurgence such as petitioning, social media, arts-based movements, and community initiatives. Includes: Experiential Learning Activity Precludes additional credit for INDG 3010 (no longer offered). Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours per week.

INDG 3015 [0.5 credit]
Indigenous Ecological Ways of Knowing and the Academy
The relationship between Indigenous traditional ecological knowledges and the academy. Topics include: linguistic barriers, tensions in diffuse ways of knowing, research ethics with respect to Indigenous traditional knowledge, and working with knowledge holders. Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours per week.

INDG 3901 [0.5 credit]
Selected Topics in Indigenous Studies
Topics vary from year to year. Prerequisite(s): third- or fourth-year standing, or permission of the School of Indigenous and Canadian Studies.
Seminar three hours per week.

INDG 4001 [0.5 credit]
Indigeneity in the City
This course begins with an examination of the relationship between Indigenous peoples and the construction of cities and urban space. Culminates in the undertaking of research projects that directly link students to the urban Indigenous community in Ottawa. Includes: Experiential Learning Activity Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours per week.

INDG 4011 [0.5 credit]
Indigenous Representations
Through an examination of instances of Indigenous misrepresentation, students will explore how Indigenous peoples have used cultural production in various forms (such as literature, film, television, visual arts, music, performance) to put forth their own visions of their peoples, worldviews, and lives. Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours a week.

INDG 4015 [0.5 credit]
Land as a Relation
This is an intensive 14-day field course that brings students together with knowledge holders on the land. The connections between Indigenous ways of knowing, the land, Indigenous languages, and the land’s non-human inhabitants, will be explored. Locations and course fee varies by year. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Fourteen-day field course.

INDG 4020 [0.5 credit]
Practicum
Students will learn to apply their knowledge of topics in Indigenous Studies with a local organization whose mandate involves working with and/or for Indigenous peoples. To be arranged in consultation with the Program Coordinator. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

INDG 4901 [0.5 credit]
Selected Topics in Indigenous Studies
Topics vary from year to year. Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Seminar three hours per week.

INDG 4905 [0.5 credit]
Directed Studies I
An optional course normally restricted to fourth-year Honours students in Canadian Studies or Indigenous Studies and to Qualifying-year Graduate students. Includes supervised reading and written work in an Indigenous Studies area. Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.
Industrial Design (IDES)

Industrial Design (IDES) Courses

IDES 1000 [0.5 credit]
Theory and History of Design
The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes.
Also listed as ARCH 2006.
Lectures three hours a week.

IDES 1001 [0.5 credit]
Industrial Design Analysis
Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment.
Includes: Experiential Learning Activity
Also listed as ARCH 2101.
Prerequisite(s): IDES 1000 or ARCH 2006.
Lectures three hours a week.

IDES 1300 [0.5 credit]
Projects IA
An introduction to the skills and processes of industrial design including drawing and sketching as an aid to design, basics of line, shape, ideation, and visualization, product drawing, presentation techniques, basic model making, studio equipment and practices, introduction to the design process.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1000 (may be taken concurrently). Studio and lectures six hours a week.

IDES 1301 [0.5 credit]
Projects IB
Aspects of industrial design theory and practice, specifically those dealing with principles of product development, fundamentals of form and colour and case studies. Students will explore the design process with emphasis on creative problem-solving techniques and visual communication in design.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1300.
Studio and lectures six hours a week.

IDES 2101 [0.5 credit]
Design for Manufacturing A
Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. The influences and role of assembly, finishing, production tooling, costing are addressed.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1001, IDES 1301.
Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2102 [0.5 credit]
Design for Manufacturing B
Continuation of IDES 2101. Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. The influences and role of assembly, finishing, production tooling, costing are addressed.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2101 or permission of the School of Industrial Design.
Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2105 [0.5 credit]
Computer Applications
Provides industrial design students with a working knowledge of design related 3D computer applications, as well as graphic manipulation and illustration software. Labs and projects are oriented towards building a foundation in software and group work skills for studio courses.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1301.
Lecture and tutorials three hours a week.

IDES 2205 [0.5 credit]
Sensory Aspects of Design for User Experience
An exploration of multi-sensory qualities derived from and designed into products to optimize product-interaction experiences. Visual, tactile, auditory, and other related sensory aspects of design and design principles that contribute to the product multi-sensory characteristics while adding meaning and emotional value.
Includes: Experiential Learning Activity
Precludes additional credit for IDES 2203 (no longer offered).
Prerequisite(s): IDES 1001 or permission of the School of Industrial Design.
Lectures and tutorials three hours a week.

IDES 2300 [0.5 credit]
Projects II A
Principles of design sketching used in the industrial design process. Topics include: sketching as a tool for problem definition; idea exploration and form development; rendering techniques and the communication of design concepts; basic physical prototyping and modeling-making techniques.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 1001 and IDES 1301, or permission of the School of Industrial Design.
Studio and lectures six hours a week.
IDES 2302 [0.5 credit]
Projects IIB
Introduction to the design principles associated with adapting products to an existing product semantic. Topics covered: principles of design, product semantics, design analysis, design synthesis, design evaluation, and modeling techniques. The design project(s) explore some or all of the design principles covered in the lectures. Includes: Experiential Learning Activity
Prerequisite(s): IDES 2300 or permission of the School of Industrial Design.
Studio and lectures six hours a week.

IDES 2600 [0.5 credit]
Human Factors/Ergonomics in Design
Foundation course in human factors/ergonomics providing an overview of physical and cognitive considerations in product design and related design fields. Anthropometrics, biomechanical considerations, cognition, social interaction, and emotional interaction are introduced in relation to supporting user experience, health and safety, performance and productivity. Includes: Experiential Learning Activity
Prerequisite(s): PSYC 1001 and PSYC 1002, or PSYC 1000.
Lectures and discussion three hours a week.

IDES 3104 [0.5 credit]
Exhibition Design
Exhibition design is explored through lectures, case studies, field trips and guest lectures. Students participate in exercises and apply design skills to a variety of exhibition design realms. Introduces students to the potential of the built environment for exploring a range of diverse exhibit applications. Includes: Experiential Learning Activity
Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.
Lectures and tutorials three hours a week.

IDES 3105 [0.5 credit]
Visual Communication and Package Design
A survey of visual communication and package design principles relevant to industrial designers. Product/brand definition and corporate identity through package design. Includes: Experiential Learning Activity
Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.
Lectures and tutorials three hours a week.

IDES 3106 [0.5 credit]
Advanced Computer Applications
Examination of complex product geometry utilizing 3D computer applications. Topics include spline, surface and solids construction, surface verification tools, and rendering tools and techniques. Workflow, robust design, reverse design techniques and 3D printing will be explored through exercises. Includes: Experiential Learning Activity
Prerequisite(s): IDES 2105.
Lecture and tutorials three hours a week.

IDES 3107 [0.5 credit]
Design and Sustainability
Explores the industrial designer's role in creating more environmentally and socially responsible products. Addresses imperatives and drivers for integrating sustainability into products. Includes: sustainable design strategies, strategies and tools, sustainable design business case, circular economy model for designed products, and case studies. Includes: Experiential Learning Activity
Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.
Lectures and tutorials three hours a week.

IDES 3202 [0.5 credit]
Advanced Studies in Form and Colour
Students may continue the research and study encountered in IDES 2205, IDES 2300 and IDES 2302 by doing advanced research in the phenomena of form and/or colour and their communicative functions in products. Directed Study. Includes: Experiential Learning Activity
Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.
Lecture and tutorials three hours a week.

IDES 3302 [0.5 credit]
Projects IIIB
Introduction to the principles of innovation as found in industrial design. Invention, innovation, entrepreneurship, basic mechanisms. The design project(s) explore some or all of the design principles covered in the lectures. Includes: Experiential Learning Activity
Precludes additional credit for IDES 3301 (no longer offered).
Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.
Studio and lectures six hours a week.

IDES 3305 [0.5 credit]
Special Studies
Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves. Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.
Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 3306 [0.5 credit]
Special Studies
Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves. Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.
Lectures, tutorials, laboratory and studio three hours a week or equivalent.
IDES 3310 [0.5 credit]
Projects IIIA
Introduction to the design principles associated with the evaluation and re-design of an existing product. Topics include: user/machine relationship, component packaging, and manufacturability. The design project(s) explore some or all of the design principles covered in the lectures. Includes: Experiential Learning Activity
Precludes additional credit for IDES 3300 (no longer offered).
Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.
Studio and lectures twelve hours a week.

IDES 3502 [0.5 credit]
Contextual Nature of Products
Cultural subjects which have an influence on contemporary industrial design. The perspective of the course is anthropological: the context and cultural relevance of industrial design.
Prerequisite(s): IDES 1000 (ARCH 2006).
Lectures and tutorials three hours a week.

IDES 3601 [0.5 credit]
Research for Design
Basic design research techniques to foster design exploration. Methods focus on understanding context and user experience to produce meaningful, actionable insights and design opportunities. Processes include qualitative and quantitative research, as well as creative and evaluative research with people. Teamwork and collaboration are explored.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2600.
Lectures or laboratory three hours a week.

IDES 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

IDES 4001 [0.5 credit]
Industrial Design Seminar
Topics vary yearly and address key contemporary industrial design issues. There is a focus on writing, discussion, and debate. Students organize a seminar with design professionals and other community experts including student and professional presentations, interaction, and discussion.
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Seminar three hours a week.

IDES 4002 [0.5 credit]
Professional Practice
The organizational aspects of consultancies and client responsibilities within the framework of corporate management. Topics include: the form of contracts for consultancy, determination of fees, legal implications, patents and copyrights. Guest lecturers.
Precludes additional credit for IDES 3503 (no longer offered).
Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.
Lectures and discussion three hours a week.

IDES 4101 [0.5 credit]
Adv. Studies in Manufacturing
Advanced manufacturing concepts and workflows are examined through a series of workshops and minor projects utilizing state-of-the-art equipment.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2101 and IDES 2102.
Lectures or laboratory three hours a week.

IDES 4200 [0.5 credit]
Form Organization
Using form organization as a tool to design, the definition and prescription of monolithic solids by means of an abstract system; making and verifying materialized approximations of such solids.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 2300 and IDES 2302 or permission of the School of Industrial Design.
Lectures, tutorials and laboratory six hours a week.

IDES 4301 [0.5 credit]
Minor Projects
Advanced skills-based course that enhances student experience in novel, experimental processes and techniques in design. Workshop-style activities and short projects focus on increasing skill competence and versatility in a variety of fields. Emphasis on time management and the ability to work independently.
Includes: Experiential Learning Activity
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Studio and lectures six hours a week.

IDES 4305 [0.5 credit]
Special Studies
Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Lectures, tutorials, laboratory and studio three hours a week or equivalent.
IDES 4306 [0.5 credit]
Special Studies
Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves. Prerequisite(s): IDES 3302 or permission of the School of Industrial Design. Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 4310 [1.5 credit]
Capstone Project
Application of design principles in a comprehensive design project. Problem area should be product-oriented and of sufficient complexity. Normally undertaken in consultation with off-campus organizations and/or industry. Supervised by faculty and/or sessional members. Includes: Experiential Learning Activity
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Studio and lectures six hours a week in Fall and twelve hours a week in Winter.

IDES 4400 [0.5 credit]
Internship Field Report
Work experience related to industrial design. Following the internship period, normally 12 weeks, a comprehensive report describing observations and insights will be submitted. Graded Sat or Uns. Includes: Experiential Learning Activity
Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.
Tutorial hours arranged.

Information Resource Management (IRM)

Information Resource Management (IRM) Courses
IRM 1002 [0.5 credit]
Reference and Information Services
Introduction to the theory and techniques needed to conduct reference interviews and interpret reference queries. Students learn to select and use general reference sources such as dictionaries, encyclopedias, directories, bibliographies, periodical indexes, almanacs, and handbooks in print, and electronic formats. Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1003 [0.5 credit]
Collections management
Introduction to the principals of collections management including techniques and procedures for selecting, ordering and receiving library materials, accounting, collection development and automated acquisitions. Students also learn policies and procedures required for circulation, document delivery and interlibrary loans. Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1004 [0.5 credit]
Reader's Advisory Services
Students become familiar with fiction and non-fiction materials available to various categories of clients and learn how to market them. In addition, students further develop through various assignments their researching, writing, speaking, listening and communication skills. Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week.

IRM 1005 [0.5 credit]
Web Interface Development
Combining graphics, text, audio and video to develop websites on an individual basis and in groups, using latest versions of HyperText Markup Language(HTML), Cascading Style Sheets (CSS), JavaScript and data interchange formats such as Extensible Markup Language(XML) and JavaScript Object Notation(JSON). Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

IRM 1006 [0.5 credit]
Subject Analysis and Indexing
Students learn the basic theory of subject analysis and indexing methods used to provide access to library materials and literature. Practical instruction makes use of thesauri, as well as standard subject heading lists, such as Sears and Library of Congress. Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hour a week.
IRM 1007 [0.5 credit]
Cataloguing
The catalogue is the main finding aid to the collection of the library. Students learn the basic principles and concepts of international standards used to describe library materials. In-class exercises, lectures and practical experience help students apply these cataloguing standards. Includes: Experiential Learning Activity
Precludes additional credit for IRM 1001 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. program.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1008 [0.5 credit]
Introduction to Information Resource Management
Students develop understanding of the concepts of information retrieval, creation, evaluation, organization and client service. Knowledge of legal and ethical implications of information and current trends in the field is studied. Through in-class lectures and hands-on activities, students gain an overview of the field. Precludes additional credit for IRM 1000 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week.

IRM 2002 [0.5 credit]
Legal and Business Information
Students develop skills in planning and executing information searches and evaluating print and electronic resources. Students learn to locate information on selected topics, compile subject-specific annotated bibliographies and instruct library clients in the use of specialized materials and databases. Includes: Experiential Learning Activity
Prerequisite(s): IRM 1002.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 2003 [0.5 credit]
Classification
How to interpret and apply Dewey Decimal and Library of Congress Classification systems. Also includes analysis of the subject content of materials, building notation, using tables, shelf-listing techniques and creating unique book numbers. Includes: Experiential Learning Activity
Prerequisite(s): IRM 1006.
Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 2004 [0.5 credit]
Information Management and Digital Preservation
Essentials of information management in an organization including the life cycle management of files in paper and the electronic environment. This course will also cover contemporary issues in information management and digital preservation. Includes: Experiential Learning Activity
Prerequisite(s): IRM 1008.
Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 2005 [0.5 credit]
Advanced Cataloguing
Libraries purchase and provide access to a wide variety of print and electronic resources. Building on work done in IRM 1007, students learn to interpret international cataloguing standards to describe more complex materials. In-class exercises, lectures and practical experience help students apply these cataloguing standards. Includes: Experiential Learning Activity
Precludes additional credit for IRM 2001.
Prerequisite(s): IRM 1007.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3001 [0.5 credit]
Scientific and Medical Information
Students enhance their knowledge of print and electronic reference sources in science and technology. Students learn to compile specialized subject-specific bibliographies and assignments provide training in the use of science and technology reference sources. Includes: Experiential Learning Activity
Prerequisite(s): IRM 2002.
Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3003 [0.5 credit]
Legal Issues in Information Resource Management
In-depth analysis and assessment of copyright and other forms of intellectual property. Legal issues related to information technology. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, Charter and human rights issues, and security. Includes: Experiential Learning Activity
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week.
**IRM 3004 [0.5 credit]**  
**Project management**  
Identification, selection, initiation, and organization of projects. Risk assessment, budget issues, communication, project scheduling, performance monitoring and control. Emphasis on practical techniques related to the field of information management using case studies.  
Includes: Experiential Learning Activity  
Prerequisite(s): third year standing in the Information resource management program.  
Lectures two hours a week, tutorial/laboratory two hours a week.

**IRM 3006 [0.5 credit]**  
**Data Analysis and Research Methodology**  
Introduction to the logic and design of research. Qualitative and quantitative research methodology with emphasis on the application and interpretation of statistical techniques for data analysis. These may include, but are not limited to, bivariate and multivariate analysis, distribution analysis, visual data analysis, market basket analysis.  
Includes: Experiential Learning Activity  
Precludes additional credit for IRM 3002 (no longer offered).  
Prerequisite(s): BIT 2000.  
Lectures three hours a week.

**IRM 3007 [0.5 credit]**  
**Practicum for IRM**  
Students will design and complete a project related to information management under the supervision of a faculty member or librarian. This course provides the opportunity to apply knowledge gained in previous courses.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in the Information resource management program.  
Tutorial/laboratory eight hours a week.

**IRM 3008 [0.5 credit]**  
**Metadata for IRM**  
Students develop an understanding of key metadata schema and apply standards to describe range of digital resources. The metadata schemes include focus on Dublin Core (DC) and MODS with select coverage of specialist schema. Through in-class lectures and hands-on activities, students apply metadata schemes.  
Includes: Experiential Learning Activity  
Precludes additional credit for IRM 3000 (no longer offered).  
Prerequisite(s): IRM 2005.  
Lectures two hours a week, tutorial/laboratory two hours a week.

**IRM 4000 [0.5 credit]**  
**Library Software**  
Using skills and knowledge of automated systems already developed in introductory courses, students learn the theory and receive the hands-on practice needed to use library databases. A component on choosing and comparing library software is included.  
Includes: Experiential Learning Activity  
Prerequisite(s): Restricted to students in the B.I.T. degree program.  
Lectures two hours a week, tutorial/laboratory one hour a week.

**IRM 4001 [0.5 credit]**  
**Archives and Special Collections**  
Principles and methods used by archivists and record managers in organizing their collections for better access and retrieval. Students also learn aspects of physical bibliography, the book trade, preservation and conservation of books and how to exhibit such material.  
Includes: Experiential Learning Activity  
Prerequisite(s): Restricted to students in the B.I.T. degree program.  
Lectures three hours a week.

**IRM 4002 [0.5 credit]**  
**Network Technology**  
Foundation knowledge for computer networks and communications. Topics include basic network design, layered communications models, IP addressing and subnets, and industry standards for networking media and protocols, with an emphasis on TCP/IP protocol suite and Ethernet environments.  
Includes: Experiential Learning Activity  
Lectures two hours a week, tutorial/laboratory one hour a week.

**IRM 4004 [0.5 credit]**  
**Applied Big Data and Artificial Intelligence**  
Introduction to applied Big Data, Machine Learning and Artificial Intelligence. Topics include: Association Rule Mining, Classification, Clustering, Regression, basics of Artificial Neural Networks, Hadoop Distributed File System, and related technologies. Applications on other domains like networks, finance, and/or business.  
Includes: Experiential Learning Activity  
Prerequisite(s): IRM 3006.  
Lectures three hours a week.

**IRM 4900 [1.0 credit]**  
**IRM Capstone Project**  
Student-initiated project developed in association with a project supervisor and external information resource management advisor. Project is supported by a written report, seminar discussions and final presentation. All proposals must be approved by the IRM Program Project Committee.  
Includes: Experiential Learning Activity  
Prerequisite(s): IRM 3004, IRM 3007 or LIB 2030 and LIB 2047 and fourth year standing in the IRM program.  
Tutorial hours arranged.
Information Technology (BIT)

Information Technology (BIT) Courses

BIT 1000 [0.5 credit]
Mathematics I for NET
Tailored for students in the Network Technology program, this course covers basic concepts in functions (polynomials, exponential, logarithmic) and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.

Includes: Experiential Learning Activity
Precludes additional credit for BIT 1100, BIT 1200, ECON 1401, ECON 1402, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401, MATH 1402.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1001 [0.5 credit]
Mathematics II for NET
Tailored for students in the Network Technology program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.

Includes: Experiential Learning Activity
Precludes additional credit for BIT 1101, BIT 1201, ECON 1401, ECON 1402, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401, MATH 1402.
Prerequisite(s): BIT 1000.
Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1002 [0.5 credit]
Physics for Information Technology I
An introductory course on energy, thermodynamics, sound and electromagnetic waves, optics, and modern physics. Practical skills are learned in the laboratory, which is a required part of the course.

Includes: Experiential Learning Activity
Precludes additional credit for BIT 1203, PHYS 1001, PHYS 1003, PHYS 1007.
Prerequisite(s): BIT 1100.
Lectures three hours a week, tutorial three hours/ laboratory three hours alternate weeks.

BIT 1006 [0.5 credit]
Achieving Success in Changing Environments
Students explore the possibilities ahead, assess their own aptitudes and strengths, and apply critical thinking and decision-making tools to help resolve some of the important issues in our complex society with its competing interests.
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week.

BIT 1007 [0.5 credit]
Physics for NET
An introductory course on energy, electrical networks (AC and DC circuits, resistance, impedance, capacitance), electrostatics (electric fields, static electricity), electromagnetism, electromagnetic waves, optics, and other topics in modern physics. Practical skills are learned in the laboratory, which is a required part of the course.
Precludes additional credit for BIT 1003 (no longer offered), BIT 1204, PHYS 1002, PHYS 1004, PHYS 1008.
Prerequisite(s): BIT 1000, Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial three hours/ laboratory three hours alternate weeks.

BIT 1100 [0.5 credit]
Mathematics I for IMD
Tailored for students in the Interactive Multimedia Design program, this course covers basic concepts in functions (polynomials, exponential, logarithmic) and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.

Includes: Experiential Learning Activity
Precludes additional credit for BIT 1000, BIT 1200, ECON 1401, ECON 1402, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401, MATH 1402.
Prerequisite(s): BIT 1100.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1101 [0.5 credit]
Mathematics II for IMD
Tailored for students in the Interactive MultiMedia Design program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.

Includes: Experiential Learning Activity
Precludes additional credit for BIT 1001, BIT 1201, ECON 1401, ECON 1402, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401, MATH 1402.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1003 [0.5 credit]
Physics for IMD
An introductory course on energy, electrical networks (AC and DC circuits, resistance, impedance, capacitance), electrostatics (electric fields, static electricity), electromagnetism, electromagnetic waves, optics, and other topics in modern physics. Practical skills are learned in the laboratory, which is a required part of the course.
Precludes additional credit for BIT 1002, BIT 1203, PHYS 1002, PHYS 1004, PHYS 1008.
Prerequisite(s): BIT 1100, Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial three hours/ laboratory three hours alternate weeks.
BIT 1200 [0.5 credit]
Calculus
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1000, BIT 1100, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401/ECON 1401, MATH 1402/ECON 1402.
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions; or MATH 0005 and MATH 0006; or equivalent. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1201 [0.5 credit]
Linear Algebra
Systems of linear equations; vector space of n-tuples, subspaces and bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product. Complex numbers (including de Moivre’s Theorem, and n-th roots). Eigenvalues, diagonalization and applications. Note: MATH 1119 is not an acceptable substitute for BIT 1201.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1001, BIT 1101, MATH 1102, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401/ECON 1401, MATH 1402/ECON 1402.
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1203 [0.5 credit]
Newtonian Physics
Mechanics, properties of matter, thermodynamics. Applications chosen in part from the life sciences.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1002, PHYS 1001, PHYS 1003, PHYS 1007.
Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent; or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or MATH 1007 or BIT 1200 (may be taken concurrently); or (iii) permission of the Department. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1204 [0.5 credit]
Electromagnetism & Modern Physics
Electricity and magnetism, DC and AC circuits, wave motion and light. Elements of modern physics. Applications chosen in part from the life sciences.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, PHYS 1002, PHYS 1004, PHYS 1008.
Prerequisite(s): BIT 1203 or PHYS 1001 or PHYS 1003 or PHYS 1007 or permission of the Department. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1400 [0.5 credit]
Introduction to Programming and Problem Solving
Introduction to basic concepts of procedural programming and algorithm design in C. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, structures, arrays, pointers, debugging, algorithmic thinking and pseudocode, computer architecture, operating systems, and libraries.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 1005, COMP 1405, ITEC 1400, ITEC 1401.
Prerequisite(s): Restricted to students in the B.I.T. degree program.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 2000 [0.5 credit]
Introduction to Statistics
This course covers data analysis, introduction to probability theory, some standard discrete and continuous distributions and their application to interval estimation and significance testing, computational aspects of statistics.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GECO 2006, STAT 2507, STAT 2606, and STAT 3502.
Prerequisite(s): restricted to students in the BIT degree program.
Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 2001 [0.5 credit]
Introduction to Business
An overview of the most fundamental business functions. The management of people, human resources, marketing, accounting and finances, business law and operations.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures: three hours a week.
BIT 2002 [0.5 credit]
Marketing in the IT sector
Basic problems and practices in marketing. Marketing strategies, planning, packaging, branding and promotion at the level of the individual firm; distribution channels. Includes: Experiential Learning Activity
Precludes additional credit for BUSI 2204.
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week.

BIT 2006 [0.5 credit]
Elective
Students must choose from among a list of approved Electives at Algonquin College.
Precludes additional credit for BIT 3003 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, or as arranged.

BIT 2008 [0.5 credit]
Multimedia Data Management
Concepts and fundamentals of database systems.
Design of relational databases, normalisation, referential integrity, structured query language (SQL), server-side scripting, organisation of multimedia content, dynamic page loading, storage and compression of media, media network considerations, digital watermarking and rights management.
Includes: Experiential Learning Activity
Precludes additional credit for ITEC 2000, IMD 2000 (no longer offered).
Prerequisite(s): BIT 1400 and IMD 1005 or IRM 1005.
Lecture three hours a week, tutorial/laboratory two hours a week.

BIT 2009 [0.5 credit]
Statistics for Technology
This course covers statistical data analysis with an emphasis on hypothesis testing including parametric tests (e.g., t-tests, ANOVA) and non-parametric tests (e.g., Kruskal-Wallis, Friedman, chi-square), correlation and linear regression. Provides an introduction to probability theory and distributions (e.g. binomial, normal).
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2000, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606, and STAT 3502.
Prerequisite(s): Restricted to students in the BIT degree program.
Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2010 [0.5 credit]
Differential Equations & Multivariate Calculus
Prerequisite(s): BIT 1200.
Lectures three hours a week, tutorial one hour a week.

BIT 2400 [0.5 credit]
Intermediate Programming
Introduction to object-oriented programming and algorithm design in C++. Topics include code and data encapsulation using classes and objects, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists and searching.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 1006, COMP 1406, ITEC 2400, ITEC 2401.
Prerequisite(s): BIT 1400. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory three hours a week.

BIT 3999 [0.0 credit]
Cooperative Work Term
Includes: Experiential Learning Activity

BIT 4000 [0.5 credit]
Directed Studies
Independent study under the supervision of a member of the School of Information Technology, open only to students in the B.I.T. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to one such course in their program.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the School of Information Technology.

BIT 4001 [0.5 credit]
Selected Topics in Information Technology
Topics not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.
Prerequisite(s): third-year standing in the BIT Program or permission of the department.
Lecture three hours a week.
**Interactive Multimedia and Design (IMD)**

### Interactive Multimedia and Design (IMD) Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Workload</th>
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<tbody>
<tr>
<td>IMD 1000</td>
<td>Introduction to Interactive Multimedia Design</td>
<td>Overview of interactive multimedia design including copyright, user-centred design, web design and markup languages, general logic design, multimedia project management, design processes for animated film, video game development, visual effects in movies, ethics and current trends in the field. Includes: Experiential Learning Activity Precludes additional credit for ITEC 1100.</td>
<td>Restricted to students in the B.I.T. degree program. Lecture three hours a week.</td>
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<tr>
<td>IMD 1001</td>
<td>Visual Communication</td>
<td>Visual communication techniques commonly used to draft concepts and ideas to support scripts for film, animation, HCI, and/or game development. Topics include: storyboarding, composition, vanishing point, line quality, visual timing, perspective, depth of field, body language and life drawing. A digital drawing tablet is required. Includes: Experiential Learning Activity</td>
<td>IMD 1000 and IMD 1002. Workshop three hours a week.</td>
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<tr>
<td>IMD 1002</td>
<td>Visual Dynamics</td>
<td>Fundamentals of composition with emphasis on realistic rendering. Students learn how to execute thumbnails and design comprehensives. Topics include: illustration, type, colour, texture, proximity and unity, alignment, repetition and continuity, contrast, size relationships, balance, rhythm, negative space, cropping and view selection. Includes: Experiential Learning Activity</td>
<td>Restricted to students in the B.I.T. degree program. Workshop three hours a week.</td>
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<tr>
<td>IMD 1004</td>
<td>Design Processes</td>
<td>Design fundamentals using industry standard software techniques and workflow are explored. Topics include: gestalt principles, grids systems, colour, texture, raster and vector image production, and typography. Students design for publication to output such as Web, print, and electronic book formats. Required digital drawing tablet. Includes: Experiential Learning Activity</td>
<td>Restricted to students in the B.I.T. degree program. Workshop three hours a week.</td>
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<tr>
<td>IMD 1005</td>
<td>[0.5 credit] Web Development</td>
<td>Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid xHTML, cascading style sheets (CSS), JavaScript and XML structures. Includes: Experiential Learning Activity Precludes additional credit for ITEC 1005.</td>
<td>IMD 1000 and IMD 1004. Workshop five hours a week.</td>
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<tr>
<td>IMD 2003</td>
<td>Audio and Video</td>
<td>The creation, production and editing of audio and video for multimedia applications. Topics include single camera recording and capture techniques through to post-production editing. Emphasis is placed on production and operation skills while adhering to industry standard costs and deadlines. Includes: Experiential Learning Activity</td>
<td>IMD 1000 and IMD 1002. Workshop four hours a week.</td>
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<tr>
<td>IMD 2006</td>
<td>Introduction to Game Design and Development</td>
<td>Basic concepts in the design and development of computer games, including: fundamentals of production cycle, genres, gameplay and game mechanics, story and character development, level design, artificial intelligence for games, game user interface, and common development tools. Includes: Experiential Learning Activity</td>
<td>BIT 2400 and second-year standing in the IMD program. Lecture three hours a week, tutorial/laboratory two hours a week.</td>
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<tr>
<td>IMD 2007</td>
<td>Intro to 3D Animation</td>
<td>Introduction to the basics of 3D computer animation. Topics include: introduction of 3D animation packages, 12 Principles of Animation, character design, character animation (walking/locomotion, motion, and poses), soft-body animation (shape interpolation and facial animation), and acting for animators. Includes: Experiential Learning Activity Precludes additional credit for IMD 2005 (no longer offered).</td>
<td>BIT 1002 and second-year standing in the IMD program. Lecture/workshop three hours a week.</td>
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IMD 2900 [1.0 credit]  
**Design Studio 1**  
Advanced practical studio-based sessions in project management and web development. Topics include: project management styles, team collaboration techniques, prototyping, project and content management, marketing, testing, and product evaluation culminating into a major group web project using client-side and server-side technologies.  
Includes: Experiential Learning Activity  
Prerequisite(s): second-year standing in the IMD program.  
Studio/lecture eight hours a week.

IMD 3002 [0.5 credit]  
**3D Computer Graphics**  
Technical aspects of 3D computer graphics. Homogeneous transformations, viewing pipeline, cinematography, modeling techniques (explicit and implicit), scene composition, level of detail methods, advanced lighting techniques (BRDF, IBL, subsurface-scattering), 2D/3D texturing, local/global illumination, rendering methods, and shaders.  
Includes: Experiential Learning Activity  
Prerequisite(s): BIT 1101, BIT 2400 and IMD 3900.  
Lectures three hours a week, tutorial/laboratory two hours per week.

IMD 3004 [0.5 credit]  
**Human Computer Interaction and Design**  
Introduction to concepts centered on Human-Computer Interaction from hardware and software perspectives. Topics include design principles, usability principles and engineering, solving user-centred problems, device interaction, and graphical user interface design (2D and 3D interfaces).  
Includes: Experiential Learning Activity  
Prerequisite(s): BIT 2009 and third-year standing in the IMD program.  
Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 3005 [0.5 credit]  
**Sensor-Based Interaction**  
Development of interactive applications that connect the physical and virtual space. Topics include using external devices and sensor hardware, sensing objects and people, gestural input, computer vision, processing of live audio input, and networked software and devices.  
Includes: Experiential Learning Activity  
Precludes additional credit for IMD 2001 (no longer offered).  
Prerequisite(s): BIT 2400.  
Lecture/workshop four hours a week.

IMD 3006 [0.5 credit]  
**Software Design for Multimedia Applications**  
Provides students with knowledge and expertise to design and develop complex software systems and programs for common multimedia applications. Topics include: data structures, system and requirement analysis, component identification, common design patterns, and working with reusable components.  
Includes: Experiential Learning Activity  
Prerequisite(s): BIT 2400.  
Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 3900 [1.0 credit]  
**Design Studio 2**  
Intermediate practical studio sessions covering the creative aspects of 3D graphics and animation. Topics include: environment and character modeling, texturing, using bump/displacement maps, advanced materials, 3D cameras, various lighting, keyframe animation, and rendering methods.  
Includes: Experiential Learning Activity  
Prerequisite(s): IMD 2007 and third-year standing in the IMD program.  
Studio/lecture eight hours a week.

IMD 3901 [1.0 credit]  
**Design Studio 3**  
Studio-based course focuses on interdisciplinary group work, and the use of reality-based/natural-based interfaces for multiuser interaction, understanding social and environmental context in physical design, basic networking, advanced sound design, and haptic feedback.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in the IMD program, IMD 2900 and IMD 3005.  
Studio/lecture eight hours a week.

IMD 4002 [0.5 credit]  
**Technology and Culture**  
An examination of the relationship between communication technology and society. The course examines the factors that contribute to changes in the collection, storage and distribution of information and the cultural implications of these changes.  
Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing in the IMD program.  
Seminar three hours a week.

IMD 4005 [0.5 credit]  
**Advanced Topics in Multimedia**  
Advanced topics in multimedia industry not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.  
Includes: Experiential Learning Activity  
Precludes additional credit for IMD 4004 (no longer offered).  
Prerequisite(s): fourth-year standing in the IMD program.  
Lecture three hours a week.
IMD 4006 [0.5 credit]
**Advanced Game Design and Development**
Provides students with knowledge and expertise to design and develop professional computer games with advanced and novel features. Topics include: target audience and inclusive/accessible design, interaction design and emerging technologies, artificial intelligence, interactive stories, procedural content generation, serious games and gamification.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 2006 and IMD 3002.
Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4008 [0.5 credit]
**Mobile User Interface Design and Development**
Design, development, and evaluation of user interfaces for mobile applications. Topics include: user-centered design methods and develop mobile applications employing the various input and output capabilities available on mobiles, e.g., multi-touch, device motion/rotation, video/audio capture, vibration.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 3004 and IMD 3006.
Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4901 [1.5 credit]
**IMD Capstone Project**
Student-initiated digital media project, under the supervision of a project advisor, consisting of complete end-to-end production, from design to final product. Development will be assessed via design documents, project plans, progress presentations, culminating in a final exposition in front of a panel of industry experts.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 2900, IMD 3004, IMD 3900, IMD 3901 and fourth-year standing in the IMD program.
Tutorial hours arranged.

**Network Technology (NET)**

**Network Technology (NET) Courses**

NET 1001 [0.5 credit]
**Computer Technology Basics**
Construction and function of PCs. Introduces technical concepts and terminology relating to system boards, system busses, input/output devices, memory, microprocessors and peripherals. Interaction of software and hardware; data storage; performance issues.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

NET 1002 [0.5 credit]
**Networking Fundamentals**
Foundation knowledge for computer networks and communications. Topics include basic network design, layered communications models, IP addressing and subnets, and industry standards for networking media and protocols, with an emphasis on TCP/IP protocol suite and Ethernet environments.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 1006 [0.5 credit]
**Routing and Switching**
Introduction to routing and switching concepts including, static and dynamic routing, trunking and VLANs. Topics include configuring routers and switches and resolving common configuration and reachability issues.
Includes: Experiential Learning Activity
Precludes additional credit for NET 1005 (no longer offered).
Prerequisite(s): NET 1002.
Lecture three hours a week, tutorial/laboratory three hours a week.

NET 2000 [0.5 credit]
**Intermediate Networking**
Architecture, components and operations of routers and switches in Enterprise networks. Topics include configuration and troubleshooting of OSPF, including Multi-area, redundancy, NAT and troubleshooting techniques.
Includes: Experiential Learning Activity
Prerequisite(s): NET 1006.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 2007 [0.5 credit]
**Basics of Transmission Systems**
Introduction to the fundamentals of information transmissions systems used in physical layer of the Internet. Covers time- and frequency-domain concepts, digital and analog transmission, signal encoding, sampling, modulation, demodulation, error detection and correction. Examples: DSL, Cable modem, and wireless LAN. Includes: Experiential Learning Activity.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 1001 and BIT 1007.
Lectures three hours a week, tutorial/laboratory three hours a week.

NET 2008 [0.5 credit]
**DevOps**
Exposure to unifying software development (Dev) and software operation (Ops). Use of Python to monitor and automate network management tasks.
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory three hours a week.
**NET 2010 [0.5 credit]**

**Desktop and Server Environments I**
Using Linux and Windows Server, study of the basic features such as file system, system utilities, memory management, boot process troubleshooting and UI customizations. Client-Server architecture is examined with a focus on basic Server configuration and administration. Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity
Precludes additional credit for NET 2002 (no longer offered).
Prerequisite(s): NET 1001.
Lecture two hours a week, tutorial/laboratory two hours a week.

**NET 2011 [0.5 credit]**

**Desktop and Server Environments II**
Using Unix and Linux Operating systems, study of the command line and network Server operating environments. Configuring Services and Protocols such as DNS, NTP, SSH, SMB, SMTP, POP3, IMAP, HTTP, and DHCP. Basic Server security using firewalls is also introduced. Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity
Precludes additional credit for NET 2003 (no longer offered).
Prerequisite(s): NET 2010.
Lecture two hours a week, tutorial/laboratory two hours a week.

**NET 2012 [0.5 credit]**

**Networking Technologies and Automation**
Enterprise technologies and QoS mechanisms used for networks access. Topics include virtualization, and automation concepts. Software-defined networking, controller-based architectures and how application programming interfaces (APIs) enable network automation.

Includes: Experiential Learning Activity
Precludes additional credit for NET 2001 (no longer offered).
Prerequisite(s): NET 2000.
Lectures three hours a week, tutorial/laboratory two hours a week.

**NET 2013 [0.5 credit]**

**Computer Systems Foundations**
Introduction to the design and implementation of digital circuits and microprocessors. Topics include: binary numbers and arithmetic, fundamentals of boolean algebra, combinational circuits, sequential circuits, computer architecture and organization: CPU, cache, memory, input/output, bus structures, interrupts, computer arithmetic, CPU assembly instruction sets.

Includes: Experiential Learning Activity
Precludes additional credit for NET 1004 (no longer offered), PLT 2009 (no longer offered), OSS 2009.
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory one hour a week.

**NET 3000 [0.5 credit]**

**Database Concepts and SQL**
Concepts and fundamentals of relational database systems. Students learn how to design relational databases starting from a conceptual data model, following accepted logical and physical design principles. Topics include normalisation, referential integrity, SQL, DDL and SQL DML & ODBC and data extraction/filtering techniques.

Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the Networking program.
Lecture two hours a week, tutorial/laboratory two hours a week.

**NET 3001 [0.5 credit]**

**Real-time Systems**

Includes: Experiential Learning Activity
Also listed as OSS 3001.
Prerequisite(s): NET 2013.
Lectures three hours a week, tutorial/laboratory two hours a week.

**NET 3004 [0.5 credit]**

**Data Structures**

Includes: Experiential Learning Activity
Also listed as OSS 3004.
Precludes additional credit for PLT 3010 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory two hours a week.

**NET 3006 [0.5 credit]**

**Network Management and Measurements**
Key network management models (FCAPS, TMN), protocols and standards, such as SNMP. Introduction to and use of various management tools and methodologies. Current trends in network management and measurement. Security issues in collecting networking management information.

Includes: Experiential Learning Activity
Prerequisite(s): NET 3000 and NET 3004.
Lectures three hours a week, tutorial/laboratory two hours a week.
NET 3007 [0.5 credit]
Network Security
Basics of network security. Students are introduced to the goals of IT security, common threats and countermeasures including firewalls, intrusion detection and prevention systems (IDPS) and virtual private networks. Several operating environments will be studied as examples. Also includes a section on computer ethics.
Includes: Experiential Learning Activity
Prerequisite(s): NET 2012.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3008 [0.5 credit]
Advanced Network Routing
Routing IP at the enterprise level, within and between, autonomous systems. Advanced control and optimization of routing protocols and manipulation of traffic paths with multiple routing protocols. Working knowledge of Internet reachability via BGP.
Includes: Experiential Learning Activity
Prerequisite(s): NET 2012.
Lectures three hours a week, tutorial/laboratory three hours a week.

NET 3009 [0.5 credit]
Web Programming
Architectures, protocols and languages used to develop dynamic Web content, including HyperText Markup Language (HTML, DHTML), Universal Resource Identifiers (URI) and HyperText Transport Protocol (HTTP) and Common Gateway Interface (CGI). JavaScript and Java are used to model cross-platform Web programming.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2400, NET 3000.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3010 [0.5 credit]
Advanced Network Switching
Includes: Experiential Learning Activity
Prerequisite(s): NET 2012.
Lectures three hours a week, tutorial/laboratory three hours a week.

NET 3011 [0.5 credit]
IP Architectures and Solutions
An exploration of deployment options that can be implemented atop of a MPLS network. The focus is on technologies and architectures that serve to enhance IP delivery, or IP service leveraging the MPLS infrastructure. Includes Layer 2 and 3 tunneling techniques. Includes: Experiential Learning Activity.
Prerequisite(s): NET 3008.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3012 [0.5 credit]
Wireless Networks
Design and configuration of Wi-Fi networks as used in commercial and enterprise venues. Topics include 802.11 family of protocols, wireless transmission, RF design, security methods and protocols, and system design. Topologies include campus, bridge and remote access.
Includes: Experiential Learning Activity
Prerequisite(s): NET 2007.
Lectures two hours a week, tutorial/laboratory three hours a week.

NET 3013 [0.5 credit]
Emerging Network Technologies
Overview of technologies, protocols and techniques related to Information Technology networking that are either in their early stage of adoption or are not yet mainstream (i.e. beta or prototype stage). Focus will vary from year to year to reflect the evolutionary nature of this domain.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Networking program or permission of the instructor.
Also offered at the graduate level, with different requirements, as ITEC 5110, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3014 [0.5 credit]
Network Simulation
Introduction to discrete event simulation; fundamental stochastic models for networking; queueing theory; deterministic algorithms for networking; confidence intervals; introduction to network modeling. Use of simulation tools to develop and test scenarios including traffic monitoring, congestion, routing protocols, resource utilization and growth planning.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2000.
Also offered at the graduate level, with different requirements, as ITEC 5113, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory two hours a week.
NET 4003 [0.5 credit]
Computer Systems Architecture
Includes: Experiential Learning Activity
Prerequisite(s): third year standing in the Networking program, NET 2003 and NET 3001.
Lectures three hours a week, tutorial/laboratory one hour a week.

NET 4005 [0.5 credit]
Networked Applications
Architectures for computing in modern data networks that adopt the Internet architecture. Topics covered include socket programming, RPC and RMI. Client-server and peer-to-peer models. Emerging application architectures.
Includes: Experiential Learning Activity
Prerequisite(s): NET 3004 and NET 3010.
Also offered at the graduate level, with different requirements, as ITEC 5114, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4007 [0.5 credit]
Multimedia Networking
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in Networking program or permission of the instructor.
Also offered at the graduate level, with different requirements, as ITEC 5111, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4009 [0.5 credit]
Troubleshooting IP Networks
Integrates planned maintenance and troubleshooting techniques, including, tools, applications and formalized methodologies. Study of issues in focused areas (such as routed vs. switched environments, addressing services, performance, security, VPN), culminating in problem resolution throughout a complex enterprise network.
Includes: Experiential Learning Activity
Prerequisite(s): NET 3011, NET 3008.
Lectures three hours a week, tutorial/laboratory three hours a week.

NET 4010 [0.5 credit]
Secure Mobile Networking
The concept, principle and rationale of mobile networking. Mobile network architecture, protocols, mobility management, routing and mobile TCP/IP; Security challenges, vulnerabilities and threats in mobile networks; Security defense techniques and countermeasures in mobile networks.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in Networking program or permission of the instructor.
Also offered at the graduate level, with different requirements, as ITEC 5112, for which additional credit is precluded.
Lectures three hours a week, tutorial/laboratory one hour a week.

NET 4011 [0.5 credit]
Advanced Topics in Network Security
Prerequisite(s): NET 3007.
Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4901 [1.0 credit]
NET Capstone Project
This course provides the opportunity to apply knowledge gained in previous courses towards the design and implementation of a major Networking related project. Working in teams or as individuals under the direction of faculty members, students undertake projects internally or in collaboration with industry.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Networking program.
Tutorial hours arranged.

Optical Systems and Sensors (OSS)

Optical Systems and Sensors (OSS) Courses

OSS 1002 [0.5 credit]
Applications in Photonics & Optoelectronics
Survey of the history and future of photonics. Photonics benefits and impact on technology and society. Emerging applications of photonics in industry and commercial products. The forces (business, social, political, economic, technical, and educational) that influence the development, adoption and success or failure of technologies.
Includes: Experiential Learning Activity
Prerequisite(s): restricted to students in the B.I.T. degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.
**OSS 1003 [0.5 credit]
Optics/Optical Fibers (Principles)**
Principles of optics, optical fiber, waveguides and hands-on experience with optical components. Optical fiber manufacturing and variety of industrial applications. Topics covered include: optical sources, detectors, fiber modes and mode-coupling, couplers, multiplexers, optical amplifiers, physical layer of optical networks, dispersion and nonlinear effects management.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1003 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

**OSS 1005 [0.5 credit]
Introduction to Optics**
Physics of waves, optics and light propagation through lectures and lab experiments. Geometrical optics, refraction and reflection, interference, diffraction and polarization, thin lens equation, laser beams, Michelson interferometer, birefringence, and Abbe theory of imaging. Electromagnetic spectrum, quantum nature of light, photons, and photoelectric effect.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1005 (no longer offered).
Prerequisite(s): BIT 1203, restricted to students in the B.I.T degree program.
Lectures two hour a week, tutorial/laboratory three hours a week.

**OSS 1006 [0.5 credit]
Introduction to Automation and Simulation**
Introduction to basic programming in both the Matlab and Labview environments. Program development, basic structures (loops, control structures), I/O, data visualization and graphing will be covered. Students will learn to use Labview to develop basic applications and model simple physical systems with Matlab.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1006 (no longer offered).
Prerequisite(s): restricted to students in the B.I.T degree program.
Lectures two hour a week, tutorial/laboratory two hours a week.

**OSS 2001 [0.5 credit]
Fundamentals of Light Sources**
Introduction to incoherent light sources and lasers. Lasers operation, energy levels, quantum mechanics basics. Pumping/excitation, population inversion, laser cavity design, gain and loss, and characteristics of laser emission. An extensive lab manual of relevant experiments, variety of lasers, spectrometers, and detection equipment will be used.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2001 (no longer offered).
Prerequisite(s): BIT 1201. Restricted to students in the BIT degree program.
Lectures two hours a week, tutorial/laboratory two hours a week.

**OSS 2002 [0.5 credit]
Optical Communication Networks I**
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2002 (no longer offered).
Prerequisite(s): OSS 1003.
Lectures two hours a week, tutorial/laboratory three hours a week.

**OSS 2003 [0.5 credit]
Laser Systems**
Laser theory, devices and systems. Safety procedures, laser power supplies, and laser system applications. Solid state, gas, and other types of lasers. Basic material processing, micro machining, bio/medical, and military applications will be covered. Hands-on experience with advanced laser equipment in lab.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2003 (no longer offered).
Prerequisite(s): OSS 2001 or PLT 2001 (no longer offered).
Lectures two hours a week, tutorial/laboratory two hours a week.
OSS 2005 [0.5 credit]
Circuits and Signals
Students learn properties of electricity and measurement techniques. Topics covered include RMS, average, applied, peak-to-peak and instantaneous values. Lab experiments deal with RC and RL circuits and LC filters. RLC circuits, and series and parallel resonance are also covered.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2005 (no longer offered).
Prerequisite(s): BIT 1204 or PHYS 1004 or PHYS 1002.
Restricted to students in the BIT degree program.
Lectures two hours a week, laboratory and problem analysis three hours a week.

OSS 2006 [0.5 credit]
Integrated Circuits
Fundamentals of logic circuitry in digital systems are studied including basic logic gates, Boolean algebra, signal decoding, logic circuit design, flip-flop circuits, timers and counters. The proper use of semi-conductor components is demonstrated through the use of laboratory experiments.
Includes: Experiential Learning Activity
Precludes additional credit for ELEC 2507, PLT 2006 (no longer offered).
Prerequisite(s): OSS 2005 or PLT 2005 (no longer offered). Restricted to students in the B.I.T. degree program.
Lectures two hours a week, laboratory and problem analysis three hours a week.

OSS 2008 [0.5 credit]
Manufacturing Photonics Components
Manufacturing techniques and methods used to produce photonics components and devices/systems. Micro assembly, adhesives, optical tests and measurement, lean manufacturing and quality control standards (Telcordia). Laboratory exposure to optical component production processes: grinding, polishing, coating, mounting, tolerance and accuracy.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 1004 and PLT 2008 (no longer offered).
Prerequisite(s): OSS 1002 or PLT 1002 (no longer offered). Restricted to students in the B.I.T. degree program.
Lectures two hours a week, laboratory two hours a week.

OSS 2009 [0.5 credit]
Assembly and Machine Language
Structured approach to assembly language programming. Topics include data and address registers, data and address busses, condition code register and stack pointers, machine code format, instruction sizes, operand encoding, translation of source code into machine language, and how the processor executes instructions.
Includes: Experiential Learning Activity
Precludes additional credit for NET 1004 (no longer offered), NET 2013, PLT 1007 (no longer offered), PLT 2009 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory one hour a week.

OSS 2010 [0.5 credit]
Signals and Systems
This course provides a solid theoretical foundation for the analysis and processing of experimental data, and real-time experimental control methods. Topics include various properties of signals and systems, convolution, the Fourier transform, sampling theorem, z-transform, spectral analysis, filter design, and system identification.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 2010 (no longer offered).
Prerequisite(s): BIT 1200 and BIT 1201. Restricted to students in the B.I.T. degree program.
Lectures three hours a week, tutorial one hour a week.

OSS 3000 [0.5 credit]
Optical Communication Networks II
Operation, management and maintenance of metro/long-haul optical network elements and systems. Hands-on skills using GUI, Transaction Language One (TL1), optical network management to perform: alarm provisioning, line and path protection switching, security, data communications management, optical network backup and restore, load upgrade and installation management.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3000 (no longer offered).
Prerequisite(s): OSS 2002.
Lectures two hours a week, tutorial/laboratory three hours a week.
OSS 3001 [0.5 credit]
Real-time Systems
Includes: Experiential Learning Activity
Also listed as NET 3001.
Precludes additional credit for PLT 3002 (no longer offered).
Prerequisite(s): OSS 2009 or PLT 2009 (no longer offered).
Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 3002 [0.5 credit]
Design of Optical Components and Systems
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3004 (no longer offered).
Prerequisite(s): OSS 1003 or PLT 1003 (no longer offered).
Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 3003 [0.5 credit]
Fundamentals of Electromagnetics
Review of basic vector calculus followed by an introduction to electrostatics and magnetostatics. Maxwell's equations and EM wave solutions. EM waves in dielectrics media, refraction, reflection, Fresnel relations and Brewster angle. Introduction to guided waves emphasizing slab waveguides.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3003 (no longer offered).
Prerequisite(s): BIT 1204 and BIT 2010.
Lecture and tutorial three hours a week.

OSS 3004 [0.5 credit]
Data Structures
Includes: Experiential Learning Activity
Also listed as NET 3004.
Precludes additional credit for PLT 3010 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 3009 [0.5 credit]
Project Management
Identification, selection, initiation, and organization of projects. Risk assessment, budget issues, communication, project scheduling, performance monitoring and control. Emphasis on practical techniques related to the field of photonics using case studies.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3009 (no longer offered).
Prerequisite(s): third year standing in the Optical Systems and Sensors program.
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 3012 [0.5 credit]
Digital Signal Processing
Operations-related topics including: sampling/reconstruction of continuous time signals, Fourier and Z-transforms, Discrete Fourier Transform (DFT), Fast Fourier Transform (FFT). Examination of other time and frequency domain techniques for designing and applying infinite impulse response (IIR) and finite impulse response (FIR) digital filters.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3012 (no longer offered).
Prerequisite(s): OSS 2010 or PLT 2010 (no longer offered).
Lectures three hours a week, tutorial one hour a week.

OSS 3013 [0.5 credit]
Software Design for Optical Systems and Sensors
Provides students with knowledge and expertise to design and develop complex software systems and programs for common optical systems and sensors. Topics include: system and requirement analysis, algorithms, component identification, common design patterns, and working with reusable components.
Includes: Experiential Learning Activity
Precludes additional credit for PLT 3013 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial two hours a week.
OSS 3014 [0.5 credit]
Optical Waves, Waveguides, and Sensors
Analysis of guided-wave propagation and sensors. Topics include Maxwell's time-dependent wave equations, dielectric waveguides (slab, planar, segmented, rib, strip), optical fibres (modes, dispersion relations, propagation in dispersive media, nonlinear fibres), beam propagation methods, free space beam propagation, waveguide devices, and study of sensors technology. Includes: Experiential Learning Activity
Precludes additional credit for PLT 3014 (no longer offered).
Prerequisite(s): OSS 3003 or PLT 3003 (no longer offered).
Lectures three hours a week, tutorial two hours a week.

OSS 4001 [0.5 credit]
Optoelectronic Devices
Precludes additional credit for PLT 4001 (no longer offered).
Prerequisite(s): OSS 3004 or PLT 3004 (no longer offered).
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 4004 [0.5 credit]
Medical Imaging and Biosensors
Biological and medical photonics. Effect of light on biological systems, medical imaging, medical treatments, biological research and bio/medical applications. Laser manipulation of cells, laser surgery, and photo-therapy. Biophotonic lab experiments with scanning confocal microscopes, endoscopes, DNA scanners. Includes: Experiential Learning Activity
Precludes additional credit for PLT 4004 (no longer offered).
Prerequisite(s): OSS 3003 or PLT 3003 (no longer offered).
Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 4006 [0.5 credit]
Image Processing
Developing and evaluating algorithms for extracting the necessary information signals. Topics include filter design, fast transforms, adaptive filters, spectrum estimation and modeling, sensor array processing, image processing, motion estimation from images, applications in biomed, computer-aided tomography, image restoration, robotic vision, and pattern recognition. Includes: Experiential Learning Activity
Precludes additional credit for PLT 4006 (no longer offered).
Prerequisite(s): BIT 2400.
Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 4008 [0.5 credit]
Remote Sensing
Introduction to the basics of remote sensing, characteristics of remote sensors, and applications. Topics include: image acquisition and data collection, LIDAR sensors and platforms and derived digital products, imagery analysis, topographic mapping, and 3D modeling of urban infrastructure for autonomous vehicles. Includes: Experiential Learning Activity
Precludes additional credit for PLT 4008 (no longer offered).
Prerequisite(s): OSS 3014 or PLT 3014 (no longer offered).
Lectures three hours a week, tutorial two hours a week.

OSS 4009 [0.5 credit]
Computer Vision
Introduction to topics in computer vision, including: fundamentals of image formation, camera imaging geometry, camera models, camera calibration, structure from motion, feature detection and matching, depth and stereo, image stabilization, image classification, automated alignment, scene understanding, recognition, and image searching. Includes: Experiential Learning Activity
Precludes additional credit for PLT 4009 (no longer offered).
Prerequisite(s): OSS 4006 or PLT 4006 (no longer offered).
Lectures three hours a week, tutorial two hours a week.

OSS 4900 [1.0 credit]
OSS Capstone Project
Research project develops students' ability to direct own learning and pursue advanced study in variety of subjects. Select topic, perform literature search, theoretical background, preliminary measurements, calculations, and design. Present findings in a preliminary thesis. Encourage writing technical papers. Research opportunities with industry and academia. Includes: Experiential Learning Activity
Precludes additional credit for PLT 4900 (no longer offered).
Prerequisite(s): fourth-year standing.
Tutorial hours arranged.
Information Technology (ITEC)

Information Technology (ITEC) Courses

ITEC 1005 [0.5 credit]
Web Development
Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid HTML5, cascading style sheets (CSS3), JavaScript and XML structures.
Precludes additional credit for IMD 1005.
Lectures and tutorials five hours a week.

ITEC 1100 [0.5 credit]
Introduction to Interactive Media Design
Overview of interactive multimedia design: user-centred and web design, mark-up languages, project management, design processes for video games, visual effects in movies, ethics, current trends in the field.
Precludes additional credit for IMD 1000.
Prerequisite(s): For students not enrolled in CSIT programs.
Lectures three hours a week.

ITEC 1400 [0.5 credit]
Introduction to Programming and Problem Solving
Introduction to basic concepts of procedural programming and algorithm design in C. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, structures, arrays, pointers, debugging, algorithmic thinking and pseudocode, computer architecture, operating systems, and libraries.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1400, COMP 1005, COMP 1405, ITEC 1401.
Lectures/tutorials six hours a week.

ITEC 1401 [0.5 credit]
Introduction to Scripting and Problem Solving
Introduction to basic concepts of object-oriented scripting and algorithm design in Python. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, arrays, tuples, lists, debugging, algorithms and pseudocode, computer architecture, operating systems, and libraries.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1400, COMP 1005, COMP 1405, ITEC 1401.
Lectures/tutorials six hours a week.

ITEC 2000 [0.5 credit]
Multimedia Data Management
Issues involving the back-end organization of information focusing on databases and database design, server-side scripting, the structured query language (SQL), digital rights management, and watermarking.
Lectures and tutorials five hours a week.

ITEC 2100 [0.5 credit]
Data Visualization
Web-based data visualization techniques and systems. Good design practices for visualization, tools for visualization of data from a variety of fields, and programming of interactive web-based visualizations focusing on JavaScript, CSS, SVG and the D3 library.
Includes: Experiential Learning Activity
Lectures/labs five hours a week.

ITEC 2400 [0.5 credit]
Intermediate Programming
Introduction to object-oriented programming and algorithm design in C++. Topics include code and data encapsulation using classes and objects, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists and searching.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2400, COMP 1006, COMP 1406, ITEC 2401.
Prerequisite(s): ITEC 1400.
Lectures three hours a week, tutorial three hours a week.

ITEC 2401 [0.5 credit]
Intermediate Scripting
Introduction to advanced object-oriented scripting and algorithm design in Python. Topics include class design and encapsulation, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists, sorting, and searching.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2400, COMP 1006, COMP 1406, ITEC 2400.
Prerequisite(s): ITEC 1401.
Lectures/tutorials six hours a week.

ITEC 3100 [0.5 credit]
Immersive Storytelling
The craft of digital storytelling, creating compelling online and game-engine packages. Using a variety of narrative formats, interactive tools, and digital content, including blogs and RSS feeds, developing an in-depth story using leading edge technologies and techniques.
Includes: Experiential Learning Activity
Workshop three hours a week.
ITEC 4007 [0.5 credit]
Dynamics and Physics-Based Animation
This course deals with the essentials of physics-based animations and dynamics; topics include basics of animation mechanics, collision detection, particle systems, and dynamic systems (cloth, fluid, and hair).
Includes: Experiential Learning Activity
Precludes additional credit for IMD 4007 (no longer offered).
Prerequisite(s): IMD 3002 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4009 [0.5 credit]
Rigging and Advanced Character Animation
This course covers the elements of rigging and advanced character animation; topics include the basics of forwards/inverse kinematics, controls, and weighting, essentials of human and creature rigging, retargeting, face and body motion capture, and motion studies for advanced keyframe animation.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 3002 and IMD 3900 or equivalent.
Lectures three hours a week, tutorial two hours a week.

ITEC 4010 [0.5 credit]
Visual Effects and Compositing
This course covers the essentials of Visual FX and compositing, topics include camera setups (motion control systems), set issues, match-moving, image-based lighting, chroma-keying and object extraction, colour correction, 2D tracking, and rotoscoping.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 3002 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4011 [0.5 credit]
Artificial Intelligence for Digital Media
This course covers the basics of artificial intelligence in games and animation, including behaviour and crowd systems (e.g. boids, reciprocal velocity obstacles, social forces, agent-based modelling, cellular automata), path finding and route planning, as well as procedural animation systems.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2400 or ITEC 2401 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4012 [0.5 credit]
Web Application Frameworks
A detailed look at web application frameworks, focusing on client and server-side frameworks that enable more advanced user interactions, including configuration, understanding functionality, and develop with them effectively.
Includes: Experiential Learning Activity
Prerequisite(s): ITEC 1005 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4014 [0.5 credit]
User Experience Design and Accessibility
User experience (UX) of interactive systems, including product and service design, usability and UX research. Emphasis on accessibility, with topics including creating accessible systems for users with a range of abilities, accessibility standards, and validation of designs in a practical context.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 3004 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4015 [0.5 credit]
Digital Audio and Music
Introduces the concepts of digital audio & music specifically how it relates to digital media (games, film, mobile, etc). Topics include, digital audio recording, multitrack production and mixing, foley effects, musical interference and intonations, signal processing for effect, time & spatial variations, and studio recording.
Includes: Experiential Learning Activity
Studio five hours a week.

ITEC 4016 [0.5 credit]
Virtual and Augmented Reality
Design, development, and evaluation of virtual and augmented reality systems. Topics include VR/AR history, applications, hardware (display and input devices), software, interaction techniques for navigation, selection, manipulation, human factors, and empirical validation. Projects will use modern 3D game engines and VR/AR devices.
Includes: Experiential Learning Activity
Prerequisite(s): IMD 2006 and IMD 3002 or equivalent.
Lecture three hours a week, tutorial two hours a week.

ITEC 4017 [0.5 credit]
Photo and Non-Photo-Realistic Rendering
This course deals with physically-based rendering methods and techniques in the global illumination field; topics include the rendering equation, ray and path tracing, radiosity rendering, photon mapping, final gather methods, materials and shaders, as well taking a look at non-photo-realistic rendering.
Includes: Experiential Learning Activity
Lecture three hours a week, tutorial two hours a week.

ITEC 4018 [0.5 credit]
GPU Programming and Real-Time Rendering
This course deals with the programming of the Graphics Processing Unit (GPU); topics include real-time rendering, shaders, and other advanced programming techniques that utilise single-instruction / multiple thread parallel processing units.
Includes: Experiential Learning Activity
Prerequisite(s): BIT 2400 or equivalent.
Lecture three hours a week, tutorial two hours a week.
ITEC 4019 [0.5 credit]
Directing and Cinematography for Digital Storytelling
This course covers the basics of being a director in a
digital storytelling environment, including the basics of
direction, dealing with actors, following scripts, and dealing
with elements of cinematography; including lighting,
cameras, shade, and shadow.
Includes: Experiential Learning Activity
Lecture three hours a week, tutorial two hours a week.

ITEC 4020 [0.5 credit]
Environment and Architectural Modelling
The course deals with the creation, development, and
use of assets for digital environments; with specific focus
on the workflows associated with scene construction and
architectural modelling for a variety of real-time and non-
real-time systems.
Includes: Experiential Learning Activity
Lecture three hours a week, tutorial two hours a week.

Integrated Science (INSC)

Integrated Science (INSC) Courses

INSC 3907 [0.5 credit]
Topics in Integrated Science
Assignment(s) reviewing current research topics.
Prerequisite(s): at least 0.5 credit at the 3000-level or
higher (may be taken concurrently) and permission of the
Institute Director.

INSC 3909 [0.5 credit]
Independent Study
The student, under the supervision of a faculty member,
prepares a study in the focus areas of the student's
program. Prior to or immediately upon registration,
the student must consult with the ISI Director for topic
approval and course regulations.
Includes: Experiential Learning Activity
Prerequisite(s): at least 0.5 credit at the 3000-level or
higher (may be taken concurrently) and permission of the
Institute Director.

INSC 4907 [1.0 credit]
Honours Essay and Research Proposal
A review of current research, and a research proposal,
under the supervision of a faculty advisor. (Note: the
research project is not actually carried out.) Graded on
the literature review, the research proposal, and an oral
defense. The student arranges for a faculty advisor.
Includes: Experiential Learning Activity
Precludes additional credit for INSC 4908 [1.0].
Prerequisite(s): fourth-year standing in Honours Integrated
Science and permission of the Institute.

INSC 4908 [1.0 credit]
Honours Project
Under the supervision of a faculty adviser, the student
carries out a research project in the IS areas of study.
Prior to or immediately upon registration, the student must
consult with the ISI Director for topic approval and course
regulations.
Includes: Experiential Learning Activity
Precludes additional credit for INSC 4907 [1.0].
Prerequisite(s): permission of the Institute Director.

Interdisciplinary Public Affairs (IPAF)

Interdisciplinary Public Affairs (IPAF) Courses

IPAF 1001 [0.5 credit]
Investigations in Public Affairs
An introductory course emphasizing the development
of writing, research, and analytical skills through the
concentrated investigation of selected topics in Public
Affairs. Topics will be offered by various Departments
within the Faculty of Public Affairs. Topics may vary from
year to year.
Prerequisite(s): permission of the Department within the
Faculty of Public Affairs.
Seminar three hours per week.

IPAF 2000 [0.5 credit]
Quantitative Approaches to Policy Analysis
Related approaches to collecting, interpreting, and
presenting quantitative information in the context of
specific public policy issues such as immigration,
globalization, discrimination, health care, and the
environment. Development of fundamental logical,
numerical, and statistical skills.
Prerequisite(s): open to students in any program other
than those leading to one of the following degrees:
Lectures three hours a week, tutorials one and half hours
a week.

IPAF 2800 [0.5 credit]
Selected Topics in Public Affairs
Specialized topics in the area of public affairs. Topics vary
from year to year and are posted at carleton.ca/fpa in
advance of the registration period.
Prerequisite(s): Normally restricted to students in the
second year of a B.P.A.P.M., B.G.In.S., B.Econ, B.J.,
B.Co.M.S., B.S.W., or B.A. program in the Faculty of
Public Affairs.
Lecture three hours per week.

IPAF 3800 [0.5 credit]
Selected Topics in Public Affairs
Specialized topics in the area of public affairs. Topics vary
from year to year and are posted at carleton.ca/fpa in
advance of the registration period.
Prerequisite(s): Normally restricted to students in the third
year of a B.P.A.P.M., B.G.In.S., B.Econ, B.J., B.Co.M.S.,
B.S.W., or B.A. program in the Faculty of Public Affairs.
Lecture three hours per week.
IPAF 4800 [0.5 credit]
Selected Topics in Public Affairs
Seminar on a specialized topic in the area of public affairs. Topics will vary from year to year and are posted at carleton.ca/fpa in advance of the registration period.
Prerequisite(s): fourth-year Honours standing or permission of the instructor.
Seminar three hours per week.

IPAF 4900 [0.5 credit]
Research Experience Course
This course gives students an opportunity to participate in a research project designed by a faculty member. Students gain work experience, learn new materials, and acquire research-oriented skills. Course expectations, learning outcomes and evaluation criteria are established by the supervising faculty member.
Includes: Experiential Learning Activity
Prerequisite(s): third year honours standing, GPA of 9.5 and permission of department.

Interdisciplinary Science (ISCI)

Interdisciplinary Science (ISCI) Courses

ISCI 1001 [0.5 credit]
Introduction to the Environment
The nature of the biosphere: scientific bases of important environmental issues; evolution of life; properties and dynamics of populations and ecosystems; biodiversity; introduction to identification skills; sustainability of renewable resources, including food. Not acceptable for credit in a Bachelor of Science program.
Precludes additional credit for ISCI 1000.
Prerequisite(s): a knowledge of Grade 10 advanced level Mathematics will be assumed.
Lectures/demonstrations three hours a week and project assignments.

ISCI 2000 [0.5 credit]
Natural Laws
Fundamental concepts and their environmental application for the non-science student: properties of atoms and molecules, chemical reactions, nuclear processes, mechanics, thermodynamics, electricity and magnetism; applications to energy production and consumption.
Precludes additional credit for ISCI 1002 (no longer offered). Not acceptable for credit in a Bachelor of Science program.
Prerequisite(s): ISCI 1001 or GEOG 1010 or permission of the Institute.
Lecture/demonstrations three hours a week, a one-hour tutorial a week, and project assignments.

ISCI 2002 [0.5 credit]
Human Impacts on the Environment
Air and water pollution; global climatic change; waste management; industrial chemicals; sources and uses of energy; nuclear energy and radiation; risk assessment of technological hazards. Acceptable only as a free elective in a Bachelor of Science program.
Prerequisite(s): ISCI 2000 or ISCI 1002 or two experimental science grade 12 U/M courses or one first year university experimental science credit.
Lectures/demonstrations three hours a week and project assignments.

Interdisciplinary Science and Practice (ISAP)

Interdisciplinary Science and Practice (ISAP) Courses

ISAP 1001 [0.5 credit]
Introduction to Interdisciplinary Science
What is interdisciplinarity and what are the challenges and opportunities of collaboration within and across disciplines in science and beyond? Topics include types of biases, public datasets and science communication.
Lectures and discussion three hours per week.

ISAP 1002 [0.5 credit]
Seminar in Interdisciplinary Science
Exploring the role of interdisciplinarity in discovery and innovation, and discussion of selected issues facing society and the role of science. Topics include finding information, collaboration and science communication tools.
Prerequisite(s): ISAP 1001.
Seminar three hours per week.

ISAP 2001 [0.5 credit]
Foundations in Critical Inquiry
What is science and the scientific method? Topics include the scientific method, credible sources of information, knowledge gaps, the impact of scientific discoveries, and discussion of their local and global implications.
Prerequisite(s): ISAP 1002 or permission of the Institute.
Lecture three hours per week, workshop two hours per week.

ISAP 2002 [0.5 credit]
Research Principles for Interdisciplinary Science
Exploring how research is conducted. Topics include publicly available databases, the role of communication in research, stakeholders and participants, and the process of identifying knowledge gaps and developing research questions.
Prerequisite(s): ISAP 2001 or permission of the Institute.
Lecture three hours per week.
ISAP 3001 [0.5 credit]
Principles and Applications in Data Analysis
Development of strategies for obtaining and analyzing data. Topics include: survey of publicly available science-data resources; identification of coincidental, correlational and causal relationships; statistical data-analysis techniques; concepts of risk and error propagation in measured and calculated values. Applications in the physical and biological sciences.
Prerequisite(s): ISAP 2002, COMP 1005 and STAT 2507 or permission of the Institute.
Lecture three hours per week, workshop two hours per week.

ISAP 3002 [0.5 credit]
Applications in Interdisciplinary Research
Application of skills from Interdisciplinary Science and Practice (ISAP) courses to develop a research proposal. Topics include: research ethics; identification of stakeholders; inclusive consultation, collaboration and dissemination strategies.
Prerequisite(s): ISAP 2002 or permission of the Institute.
Lecture three hours per week, workshop two hours per week.

ISAP 3003 [0.5 credit]
Science Communication
How is science perceived and how has science been communicated? Students will use case studies to assess examples of science communication with varying outcomes. Topics include the principles of effective science communication, the range of tools available, and knowing the audience.
Includes: Experiential Learning Activity
Prerequisite(s): ISAP 2002 or permission of the Institute.
Lecture and seminar three hours per week.

ISAP 3004 [0.5 credit]
Science Policy
Exploration of how science-related policy is developed and the impact of policy on science. Topics include policy frameworks, stakeholder roles, power relationships, commercialization and the funding of science.
Prerequisite(s): ISAP 3003 or permission of the Institute.
Lecture and seminar three hours per week.

ISAP 3700 [0.5 credit]
Topics in Interdisciplinary Science
Specific topics of current interest. Topics may vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): Second year standing in the Interdisciplinary Science and Practice program or permission of the Institute.
Seminar/workshop three hours per week.

ISAP 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

ISAP 4700 [0.5 credit]
Topics in Interdisciplinary Science
Specific topics of current interest. Topics may vary from year to year.
Includes: Experiential Learning Activity
Prerequisite(s): Third year standing in the Interdisciplinary Science and Practice program or permission of the Institute.
Seminar three hours per week.

ISAP 4901 [0.5 credit]
Directed Studies
Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the Interdisciplinary Science and Practice (ISAP) program and permission of the instructor.

ISAP 4906 [1.0 credit]
Capstone Course - Group Research Project
Students will collaborate on a project that addresses a real-world issue in a team environment. Focus includes: design and completion of a research project; development of communication, critical inquiry, data analysis and research skills; and the opportunity to develop initiative, creativity and self-reliance.
Includes: Experiential Learning Activity
Precludes additional credit for ISAP 4907, ISAP 4908.
Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program and permission of the Institute.
Lecture, seminar and workshop four hours per week, as scheduled by the instructor.

ISAP 4907 [1.0 credit]
Capstone Course - Research Essay
A substantial, independent essay or research proposal-based critical review and research proposal, using library, database and/or bioinformatic resources, under the direct supervision of the instructor. Topics include identification and critical review of resources, development of writing skills and formulation of research question and strategy.
Includes: Experiential Learning Activity
Precludes additional credit for ISAP 4906, ISAP 4908.
Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program.
Lecture, seminar and workshop four hours per week, as scheduled by the instructor.
ISAP 4908 [1.0 credit]
Capstone Course - Individual Research Project
An independent research project under the direct supervision of a faculty adviser. Evaluation is based on a written thesis and a poster presentation.
Includes: Experiential Learning Activity
Precludes additional credit for ISAP 4906, ISAP 4907.
Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program, a major CGPA of 9.0 or higher, and permission of the Institute.
Lectures and discussion as scheduled by the course coordinator; other hours as arranged with the faculty advisor.

Interdisciplinary Studies (DIST)

Directed Interdisciplinary Studies (DIST) Courses

DIST 3901 [0.5 credit]
Themes in Interdisciplinary Inquiry
Examination of topics of interest to a number of disciplines, along with various methods and styles of thought used to study them. Students will synthesize the various perspectives. Open only to students in Directed Interdisciplinary Studies and Child Studies.
Prerequisite(s): third-year standing in Child Studies or Directed Interdisciplinary Studies.
Seminar three hours a week.

DIST 3902 [0.5 credit]
Selected Topics in Interdisciplinary Studies
An examination of one or more interdisciplinary topics selected by faculty to present interdisciplinary thought and research not available elsewhere in the university curriculum.
Prerequisite(s): third-year standing or permission of the Institute.
Seminar three hours a week.

DIST 4901 [0.5 credit]
Directed Reading
Individual or small-group tutorial related to the theme of a Directed Interdisciplinary Studies program. Written permission from the Director of Interdisciplinary Studies is required before registering; please contact the DIS administrator.
Prerequisite(s): for Directed Interdisciplinary Studies students with fourth year Honours standing and a CGPA of 9.00 or better or permission of the Institute.

DIST 4902 [0.5 credit]
Directed Reading
Individual or small-group tutorial related to the theme of a Directed Interdisciplinary Studies program. Written permission from the Director of Interdisciplinary Studies is required before registering; please contact the DIS administrator.
Prerequisite(s): for Directed Interdisciplinary Studies students with fourth year Honours standing and a CGPA of 9.00 or better or permission of the Institute.

DIST 4904 [0.5 credit]
Selected Topics in Interdisciplinary Studies
An examination of one or more interdisciplinary topics selected by faculty to present interdisciplinary thought and research not available elsewhere in the university curriculum.
Prerequisite(s): fourth-year standing or permission of the Institute.
Seminar three hours a week.

DIST 4905 [0.5 credit]
Directed Interdisciplinary Studies Fieldwork I
Fieldwork related to the theme of a Directed Interdisciplinary Studies program. A proposal with a fieldwork research question and a supervisor must be approved prior to registration. A paper relating the fieldwork to the student’s DIS program must be submitted. Graded as Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Directed Interdisciplinary Studies or permission of the Institute.

DIST 4906 [0.5 credit]
Directed Interdisciplinary Studies Fieldwork II
Fieldwork related to the theme of a Directed Interdisciplinary Studies program. A proposal with a fieldwork research question and a supervisor must be approved prior to registration. A paper relating the fieldwork to the student’s DIS program must be submitted. Graded as Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Directed Interdisciplinary Studies or permission of the Institute.

DIST 4907 [0.5 credit]
Honours Essay
Interdisciplinary research project designed to develop research and writing skills. Topics must be approved by the Program Coordinator also charged with marking the essay.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year standing.

DIST 4908 [1.0 credit]
Honours Project
Interdisciplinary project for Honours Directed Interdisciplinary Studies students. In selecting a project, students must consult with the D.I.S. Program Coordinator. Students will work closely with a supervisor. Approval from the Program Coordinator to register for this course is necessary.
Includes: Experiential Learning Activity
Prerequisite(s): fourth year standing in the B.A. Honours Directed Interdisciplinary Studies program and a 9.0 CGPA or higher.
International Affairs (INAF)

International Affairs (INAF) Courses

INAF 3001 [0.5 credit]
Understanding Policy in a Global Context
Analysis of international policy processes relevant to governments, non-governmental organizations, international organizations and multinational corporations, drawing upon theories of international relations, political science, law and economics. Emphasis on analytical and normative aspects of public policy processes in international relations.
Prerequisite(s): third-year standing in the B.P.A.P.M. program and registration in the International Studies Specialization.
Lectures or seminars three hours per week.

INAF 3002 [0.5 credit]
Applied Policy in a Global Context
Applications of policy analysis to specific international problems with an emphasis on institutions, multiple levels of governance, the role of non-governmental actors, and complex interconnected policy issues. Cases are drawn from international problems such as security, economics, development, the environment, migration, and health.
Prerequisite(s): third-year standing in the B.P.A.P.M. program and registration in the International Studies Specialization, and successful completion of INAF 3001.
Lectures or seminars three hours per week.

INAF 4101 [0.5 credit]
Topics in Conflict and Conflict Management
An interdisciplinary course examining selected issues and policies in the area of conflict and conflict management. Topics include subjects such as sources and causes of conflict, conflict mediation, and peacekeeping and peacebuilding.
Prerequisite(s): fourth-year standing in the B.P.A.P.M. program and registration in the International Relations and Conflict Concentration of the International Policy Studies Specialization, or permission from Kroeger College and NPSIA.
Lecture or seminar three hours per week.

INAF 4201 [0.5 credit]
Topics in Security and Intelligence
An interdisciplinary course examining selected issues and policies in the area of security and intelligence. Topics include subjects such as intelligence oversight and privacy, comparative defence and security policy, terrorism, and counterterrorism.
Prerequisite(s): fourth-year standing in the B.P.A.P.M. program and registration in the Security and Intelligence Concentration of the International Policy Studies Specialization or permission from Kroeger College and NPSIA.
Lecture or seminar three hours per week.

INAF 4301 [0.5 credit]
Topics in Rights and Human Development
An interdisciplinary course examining selected issues and policies in the area of rights and human development. Topics include subjects such as food security, access to water, income distribution and inequality, health and education.
Prerequisite(s): fourth-year standing in the B.P.A.P.M. program and registration in the Rights and Human Development Concentration of the Development Policy Studies Specialization, or permission from Kroeger College and NPSIA.
Lecture or seminar three hours per week.

INAF 4401 [0.5 credit]
Topics in Global Economic Relations
An interdisciplinary course examining selected issues and policies in the area of globalization and global economic relations. Topics include trade and development, multinationals and corporate social responsibility, debt and finance, intellectual property, and migration.
Prerequisite(s): fourth-year standing in the B.P.A.P.M. program and registration in the Global Economic Relations Concentration of the Development Policy Studies Specialization, or permission from Kroeger College and NPSIA.
Lecture or seminar three hours per week.

Italian (ITAL)

Italian (ITAL) Courses

Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

ITAL 1010 [0.5 credit]
First-Year Italian I
For students with no knowledge of Italian. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for ITAL 1110.
Four hours a week.
ITAL 1020 [0.5 credit]
First-Year Italian II
Continuation of first-year Italian. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for ITAL 1110.
Prerequisite(s): grade of C or higher in ITAL 1010, or permission of the School.
Four hours a week.

ITAL 1110 [1.0 credit]
Intensive First-Year Italian
For students with no knowledge of Italian. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for ITAL 1010 and ITAL 1020.
Eight hours a week (one term).

ITAL 2010 [0.5 credit]
Second-Year Italian I
Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for ITAL 2110.
Prerequisite(s): grade of C or higher in ITAL 1020 or ITAL 1110, or permission of the School.
Four hours a week.

ITAL 2020 [0.5 credit]
Second-Year Italian II
Continuation of second-year Italian. Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for ITAL 2110.
Prerequisite(s): grade of C or higher in ITAL 2010, or permission of the School.
Four hours a week.

ITAL 2110 [1.0 credit]
Intensive Second-Year Italian
Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for ITAL 2010 or ITAL 2020.
Prerequisite(s): grade of C or higher in ITAL 2010, ITAL 1110, or permission of the School.
Eight hours a week (one term).

ITAL 3110 [1.0 credit]
Intensive Third-Year Italian
Further study of Italian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in ITAL 2000 (no longer offered), ITAL 2020, ITAL 2110, or permission of the School.
Six hours a week (one term).

ITAL 4110 [1.0 credit]
Intensive Fourth-Year Italian
Advanced spoken and written Italian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Prerequisite(s): grade of C or higher in ITAL 3110, or permission of the School.
Six hours a week (one term).

ITAL 4900 [1.0 credit]
Independent Study
Research in a topic in Italian language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Italian, grade of C or higher in ITAL 3110 or equivalent, or permission of the School.

ITAL 4901 [0.5 credit]
Independent Study
Research in a topic in Italian language, literature or linguistics under the supervision of a member of the School.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Italian, grade of C or higher in ITAL 3110 or equivalent, or permission of the School.

Japanese (JAPA)

Japanese (JAPA) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

JAPA 1010 [0.5 credit]
First-Year Japanese I
For students with no knowledge of Japanese. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for JAPA 1110.
Four hours a week.
JAPA 1020 [0.5 credit]
First-Year Japanese II
Continuation of first-year Japanese. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for JAPA 1110.
Prerequisite(s): grade of C or higher in JAPA 1010, or permission of the School.
Four hours a week.

JAPA 1110 [1.0 credit]
Intensive First-Year Japanese
For students with no knowledge of Japanese. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for JAPA 1010 and JAPA 1020.
Eight hours a week (one term).

JAPA 2110 [1.0 credit]
Intensive Second-Year Japanese
Further study of Japanese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 1020 or JAPA 1110, or permission of the School.
Eight hours a week (one term).

JAPA 3010 [0.5 credit]
Third-Year Japanese I
Further study of Japanese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 2110, or permission of the School.
Three hours a week.

JAPA 3011 [0.5 credit]
Reading in Japanese – Kanji I
Intended for students taking JAPA 3010 and those who want to learn kanji in depth and become proficient in reading various Japanese texts. The course is intended primarily for students who do not use Chinese characters in their first language.
Prerequisite(s): grade of C or higher in JAPA 2110 or permission of the School.
Three hours a week.

JAPA 3020 [0.5 credit]
Third-Year Japanese II
Continuation of third-year Japanese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 3010, or permission of the School.
Three hours a week.

JAPA 3021 [0.5 credit]
Reading in Japanese – Kanji II
Prerequisite(s): grade of C or higher in JAPA 3011 or permission of the School.
Three hours a week.

JAPA 4010 [0.5 credit]
Fourth-Year Japanese I
Development of speaking and writing abilities more complex than those used in daily communication.
Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 3020, or permission of the School.
Three hours a week.

JAPA 4020 [0.5 credit]
Fourth-Year Japanese II
Continuation of fourth-year Japanese. Further development of speaking and writing abilities more complex than those used in daily communication.
Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.
Prerequisite(s): grade of C or higher in JAPA 4010, or permission of the School.
Three hours a week.

JAPA 4210 [0.5 credit]
Functional Contemporary Japanese I
Further study of Japanese to reach a more advanced level, aimed at developing speaking and writing abilities more complex than those used in daily communication.
Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Prerequisite(s): grade of C or higher in JAPA 4020 or permission of the School.
Three hours a week.

JAPA 4220 [0.5 credit]
Functional Contemporary Japanese II
Continuation of JAPA 4210. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Prerequisite(s): grade of C or higher in JAPA 4210 or permission of the School.
Three hours a week.
JAPA 4900 [1.0 credit]  
Independent Study  
Research in a topic in Japanese language, literature or linguistics under the supervision of a member of the School.  
Includes: Experiential Learning Activity  
Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Japanese, a grade of C or higher in JAPA 4020 or equivalent, or permission of the School.

JAPA 4901 [0.5 credit]  
Independent Study  
Research in a topic in Japanese language, literature or linguistics under the supervision of a member of the School.  
Includes: Experiential Learning Activity  
Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Japanese, JAPA 4020 or equivalent, or permission of the School.

Journalism (JOUR)  

Journalism (JOUR) Courses  

JOUR 1001 [0.5 credit]  
Foundations: Journalism in Context  
This course charts a history of the fourth estate in the West from the invention of the printing press to the ascendance of networked digital communication, focusing on the political, economic and technological contexts that have shaped the news media as institutions and industries.  
Includes: Experiential Learning Activity  
Precludes additional credit for JOUR 1000.  
Prerequisite(s): for Journalism Honours students only.  
Lectures and discussion three hours a week.

JOUR 1002 [0.5 credit]  
Foundations: Practicing Journalism in a Diverse Society  
The course introduces students to the concepts, issues and challenges in the contemporary Canadian media environment that will shape their professional role as practicing journalists. It will also provide students with an initial opportunity to practice some basic journalistic skills.  
Includes: Experiential Learning Activity  
Precludes additional credit for JOUR 1000.  
Prerequisite(s): for Journalism Honours students only.  
Lectures and discussion three hours a week.

JOUR 1003 [0.5 credit]  
Discovering Journalism: Traditional Tales to Tweets  
Journalism’s evolution as community creator and guardian of democracy; its greatest scoops and worst misdeeds. From ancient news-sharing to 21st-century expression in blogs, tweets and investigative masterpieces, this course surveys ethical, political and economic contexts of journalism. Not open to Journalism majors.  
Lecture three hours a week.

JOUR 2003 [0.5 credit]  
Delivering Journalism: Innovators v. Imposters  
Activists, imposters and innovators increasingly crowd in on traditional journalism’s role of presenting reliable news and fair discussion. How is public awareness now shaped – and misshaped – and how must journalism reshape, update and defend its borders to serve communities better?.  
Prerequisite(s): JOUR 1001, JOUR 1002, JOUR 1003, or permission of the School of Journalism and Communication.  
Lecture and discussion three hours a week.

JOUR 2106 [0.5 credit]  
The Documentary  
Examination of the work of individual film makers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered.  
Also listed as FILM 2106.  
Precludes additional credit for JOUR 2105, FILM 2105.  
Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.  
Lecture and screening three hours a week, lecture one hour a week.

JOUR 2201 [1.0 credit]  
Fundamentals of Reporting  
Introduction to the techniques journalists use to gather information quickly, accurately and ethically, and to present reports and features in clear, engaging ways. Newsroom exercises provide experience in reporting, writing, editing and using digital tools, including photography and social media.  
Includes: Experiential Learning Activity  
Precludes additional credit for JOUR 2202 and second year standing in the Bachelor of Journalism program.  
Lectures, discussion and practicum six hours a week.

JOUR 2202 [0.5 credit]  
Digital Journalism Toolkit  
An introduction to the digital tools and social media journalists use to gather, verify and present material to audiences. Lab exercises provide experience producing photographs, audio, and video for journalistic storytelling and the use of social media tools and platforms for reporting and publishing.  
Includes: Experiential Learning Activity  
Prequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.  
Students must be enrolled in this course concurrently with JOUR 2201.  
Lectures and lab three hours a week.
JOUR 2501 [0.5 credit]
**Media Law**
A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court. Also listed as COMS 2501, MPAD 2501. Precludes additional credit for COMM 2501 (no longer offered).
Prerequisite(s): JOUR 1001, JOUR 1002, COMS 1001, COMS 1002, or JOUR 1003 and enrollment in the Minor in News Media and Information, or enrollment in the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School of Journalism and Communication.
Lectures and discussion three hours a week.

JOUR 3105 [0.5 credit]
**Questions of Documentary Practice**
Theoretical implications of documentary film and documentary television practice. Also listed as FILM 3105.
Prerequisite(s): 1.0 credit in Film Studies at the 2000-level, or permission of the School.

JOUR 3207 [0.5 credit]
**Audio Journalism**
In this workshop students will build on the principles and practices of audio journalism to produce stories and audio in various formats suitable for radio and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and labs six hours a week.

JOUR 3208 [0.5 credit]
**Video Journalism**
In this workshop students will build on the principles and practices of video journalism to produce stories and video in various formats suitable for television and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and labs six hours a week.

JOUR 3225 [0.5 credit]
**Reporting in Depth**
Long-form journalistic writing skills development; techniques for thorough investigation of timely public issues. Study of outstanding feature and investigative writing examples. Students will pursue their own reporting projects.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 3205 (no longer offered).
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and practicum three hours a week.

JOUR 3235 [0.5 credit]
**Digital Journalism**
Further development of digital journalism skills. Students will produce journalism for online audiences using formats including written and spoken language, still and moving images.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 3205 (no longer offered).
Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.
Lectures and labs three hours a week.

JOUR 3300 [0.5 credit]
**Media Ethics in a Digital World**
Ethical issues related to production and dissemination of news and other forms of content as they relate to digital environments. Different approaches to ethical decision-making and their application in contemporary settings. Also listed as MPAD 3300.
Precludes additional credit for JOUR 3215 (no longer offered).
Prerequisite(s): JOUR 2201, JOUR 2202 and JOUR 2501 with a grade of C or higher in each, or JOUR 1003, JOUR 2003 and JOUR 2501 with a grade of C or higher in each and enrollment in the Minor in News Media and Information.
Lectures three hours a week.

JOUR 3400 [0.5 credit]
**Selected Topic in Journalism**
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 3401 [0.5 credit]
**Selected Topic in Journalism**
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.
JOUR 3402 [0.5 credit]
**Selected Topic in Journalism**
Examination of a topic in journalism not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 3407 [0.5 credit]
**Comparative Media Studies**
The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.
Also listed as COMS 3407.
Precludes additional credit for COMM 3407 (no longer offered).
Prerequisite(s): third-year standing in B.J. Hons. or permission of the School of Journalism and Communication.
Lectures three hours a week.

JOUR 4001 [0.5 credit]
**Journalism Now - and Next**
Changes occurring in the media, in the public’s relationship with the media and how journalists and news organizations respond. Practical issues and challenges in the professional life of a journalist.
Also listed as MPAD 4001.
Precludes additional credit for JOUR 4000 (no longer offered).
Prerequisite(s): fourth-year standing in the Bachelor of Journalism or in the Bachelor of Media Production and Design, or fourth-year standing and enrollment in the Minor in News Media and Information, or fourth-year standing in the Strategic Public Opinion stream of the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management.
Lectures and discussion three hours a week.

JOUR 4003 [0.5 credit]
**The Digital Hub: Advanced Multimedia**
A workshop designed to give students instruction in digital reporting and publishing as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3235 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5003, for which additional credit is precluded.
Workshops averaging eight hours a week.

JOUR 4004 [0.5 credit]
**The Digital Hub: Advanced Audio**
A workshop designed to give students instruction in audio journalism as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4206 (no longer offered).
Prerequisite(s): JOUR 3207 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5004, for which additional credit is precluded.
Workshops averaging eight hours per week.

JOUR 4005 [0.5 credit]
**The Digital Hub: Advanced Video**
A workshop designed to give students instruction in video journalism as they produce stories from across the city and beyond.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4207 (no longer offered).
Prerequisite(s): JOUR 3208 with a grade of C or higher and fourth-year standing in B.J. Hons.
Also offered at the graduate level, with different requirements, as JOUR 5005, for which additional credit is precluded.
Workshops averaging eight hours a week.

JOUR 4100 [0.5 credit]
**Special Topic**
Examination of a topic in journalism not covered in depth in other courses. Seminar three hours a week.

JOUR 4101 [0.5 credit]
**Special Topic**
An examination of a topic in journalism not covered in depth in other courses. Topics may vary from year to year. Seminar three hours a week.

JOUR 4300 [0.5 credit]
**Specialized Journalism: Special Topic**
Examination of a topic not covered in depth in other specialized journalism courses. Topics may vary from year to year. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.
Also listed as MPAD 4300.
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5300, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.
JOUR 4301 [0.5 credit]
Specialized Journalism: Business and the Markets
Core skills development for business journalism: reading financial documents, covering activities of corporations, functioning of stock and other markets, trade policy and the broader economy, focus on contemporary business news and local publicly-traded companies. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5301, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4302 [0.5 credit]
Specialized Journalism: Business and Canadian Society
The intersection between business and public policy, from climate change to taxation, pensions, labour and corporate social responsibility. What business does and how the media covers it. Emphasis on explanatory/analytical reporting, production of a related data project as an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5302, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4303 [0.5 credit]
Specialized Journalism: Health and Science
The culture of health science research and major trends; key challenges confronting researchers and health science journalists around the world. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5303, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4304 [0.5 credit]
Specialized Journalism: Environment and Science
Major trends and research culture in climate and environmental sciences, focusing on key global concerns. Issues facing researchers and journalists. Focus on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5304, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4305 [0.5 credit]
Specialized Journalism: Canada and the U.S.
Exploration of the unique issues in Canada-U.S. relations, from diplomacy to trade. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5315, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4306 [0.5 credit]
Specialized Journalism: Canada and the World
Diplomacy, war, terrorism, migration, the international economy, development and other issues of interest to journalists who want to write about Canada and international affairs. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5306, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4308 [0.5 credit]
Specialized Journalism: Sports and Sport Culture
Workshop equipping students with the skills to move beyond the clichés of sports writing and live event coverage. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5308, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.
JOUR 4309 [0.5 credit]
Specialized Journalism: Arts and Culture
Students are introduced to arts and culture journalism, exploring issues and trends that are key to understanding and covering the arts and related cultural policy in Canada. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5309, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4310 [0.5 credit]
Specialized Journalism: Justice and the Law
Areas of law that journalists may encounter along with a practical explanation of how law works. Students gain the language and tools needed to successfully analyze and write about legal issues. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5310, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4311 [0.5 credit]
Specialized Journalism: Justice and The Supreme Court
Examination of the Supreme Court of Canada, and the role of journalists in covering it. Students attend hearings and gain insight into the court’s role in the making and shaping of Canada. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.
Includes: Experiential Learning Activity
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.
Also offered at the graduate level, with different requirements, as JOUR 5311, for which additional credit is precluded.
Lectures, discussion and seminars three hours a week.

JOUR 4400 [0.5 credit]
Professional Skills: Special Topic
Examination of a topic in journalism not covered in depth in other courses.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.
Seminar three hours a week.

JOUR 4401 [0.5 credit]
Professional Skills: Data Storytelling
Instruction in telling stories from data. Focus on searching for, analyzing and mapping data, turning numbers into powerful narratives.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Lecture and practicum three hours a week.

JOUR 4402 [0.5 credit]
Professional Skills: Longform Writing
Instruction in longform story production. Focus on researching and writing, including the art and craft of writing for magazines.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Lecture and practicum three hours a week.

JOUR 4403 [0.5 credit]
Professional Skills: Strategic Communication
Workshop pairing student teams with non-profit groups that are in need of strategic communication advice. Instruction in planning and implementation.
Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4208 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.
Also offered at the graduate level, with different requirements, as JOUR 5508, for which additional credit is precluded.
Lecture and practicum three hours a week.

JOUR 4500 [0.5 credit]
Investigating Journalism: Special Topic
Examination of a topic in journalism not covered in depth in other courses.
Also listed as MPAD 4500.
Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.
Seminar three hours a week.
JOUR 4501 [0.5 credit]
Investigating Journalism: Gender, Identity and Inequality
How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis. Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations. Includes: Experiential Learning Activity
Also listed as MPAD 4501.
Precludes additional credit for JOUR 4307 (no longer offered).
Prerequisite(s): third- or fourth-year standing in B.J. Hons. or permission of the School.
Seminar three hours a week.

JOUR 4502 [0.5 credit]
Investigating Journalism: Journalism and Conflict
For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research. Includes: Experiential Learning Activity
Also listed as MPAD 4502.
Prerequisite(s): fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4503 [0.5 credit]
Investigating Journalism: Journalism, Indigenous Peoples and Canada
Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous peoples in the era of reconciliation. Includes: Experiential Learning Activity
Also listed as MPAD 4503.
Prerequisite(s): third-or fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4504 [0.5 credit]
Investigating Journalism: The Media and International Development
A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda?.
Includes: Experiential Learning Activity
Also listed as MPAD 4504.
Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.
Seminar three hours a week.

JOUR 4505 [1.0 credit]
Investigating Journalism: The Power and Politics of Government
In-depth exploration of Canada’s government, public policy and politics; parliamentary debate and committee hearings. Explanatory/analytical reporting; production of an extended work of journalism. Includes: Experiential Learning Activity
Precludes additional credit for JOUR 4201 (no longer offered).
Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year B.J. Honours standing, or permission of the School.
Seminar three hours a week.

JOUR 4900 [1.0 credit]
Honours Tutorial
Students analyze some major achievements in contemporary journalism, through individual or group research. Students also have the opportunity to acquire background and experience in the managerial aspects and production of print and broadcast journalism.
Prerequisite(s): fourth-year B.J. (Honours) standing.

Korean (KORE)

KORE 1010 [0.5 credit]
First-Year Korean I
For students with no knowledge of Korean. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for LANG 1010, when the language of instruction was Korean.
Four hours a week.

KORE 1020 [0.5 credit]
First-Year Korean II
Continuation of first-year Korean. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for LANG 1020, when the language of instruction was Korean.
Prerequisite(s): grade of C or higher in KORE 1010, or in LANG 1010 (when the language of instruction was Korean), or permission of the School.
Four hours a week.
KORE 2010 [0.5 credit]
Second-Year Korean I
Further study of Korean to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for LANG 2010, when the language of instruction was Korean.
Prerequisite(s): grade of C or higher in KORE 1020, or in LANG 1020 (when the language of instruction was Korean), or permission of the School.
Four hours a week.

KORE 2020 [0.5 credit]
Second-Year Korean II
Continuation of second-year Korean. Further study of Korean to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for LANG 2020, when the language of instruction was Korean.
Prerequisite(s): grade of C or higher in KORE 2010, or in LANG 2010 (when the language of instruction was Korean), or permission of the School.
Four hours a week.

KORE 3010 [0.5 credit]
Third-Year Korean I
Continuation of the study of Korean to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Precludes additional credit for LING 3009 (when the language of instruction was Korean).
Prerequisite(s): grade of C or higher in KORE 2020 or LANG 2020 (if taken in winter 2017), or permission of the School.
Seminar three hours a week.

KORE 3020 [0.5 credit]
Third-Year Korean II
Continuation of third-year Korean. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Precludes additional credit for LING 3009 (when the language of instruction was Korean).
Prerequisite(s): grade of C or higher in KORE 3010, or permission of the School.
Seminar three hours a week.

KORE 4010 [0.5 credit]
Fourth-Year Korean I
Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in KORE 3020, or permission of the School.
Seminar three hours a week.

KORE 4020 [0.5 credit]
Fourth-Year Korean II
Continuation of Fourth-Year Korean. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.
Prerequisite(s): grade of C or higher in KORE 4010, or permission of the School.
Seminar three hours a week.

Language Studies (LANG)

Language Studies (LANG) Courses

Placement for Language Students

Note: a placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

LANG 1010 [0.5 credit]
Introduction to a Language I
Introductory study of a selected language. Oral skills; basic reading and writing skills. The language taught will vary from year to year. Compulsory attendance.
Precludes additional credit for LANG 1110 (when offered in the same language).
Seminars four hours a week.

LANG 1020 [0.5 credit]
Introduction to a Language II
Continuation of LANG 1010. Oral skills; basic reading and writing skills. Compulsory attendance.
Precludes additional credit for LANG 1110 (when offered in the same language).
Prerequisite(s): grade of C or higher in LANG 1010, or permission of the School.
Seminars four hours a week.

LANG 1110 [1.0 credit]
Intensive Introduction to a Language
Introductory study of a selected language. Oral skills; basic reading and writing skills. The language taught will vary from year to year. Compulsory attendance.
Precludes additional credit for LANG 1010 and LANG 1020, when taken in the same language.
Seminar eight hours a week (one term).
LANG 2010 [0.5 credit]
Second-Year Language I
Further study of a selected language to reach a more advanced level of proficiency in a range of situations.
Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for LANG 2110, when taken in the same language.
Prerequisite(s): grade of C or higher in LANG 1020 or LANG 1110, or permission of the School.
Four hours a week.

LANG 2020 [0.5 credit]
Second-Year Language II
Continuation of second-year of a selected language.
Further study of this language to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for LANG 2110, when taken in the same language, and LANG 2900.
Prerequisite(s): grade of C or higher in LANG 2010 or permission of the School.
Four hours a week.

LANG 2110 [1.0 credit]
Continuing Intensive Study of a Language
Further study of a selected language to reach a more advanced level of proficiency in a range of situations.
Equal emphasis on oral and written language. The language taught will vary from year to year. Compulsory attendance.
Precludes additional credit for LANG 2110, when taken in the same language and LANG 2900.
Prerequisite(s): grade of C or higher in LANG 2010 or permission of the School.
Seminars eight hours a week (one term).

LANG 2900 [1.0 credit]
Supervised Autonomous Language Learning
Supervised autonomous language learning in a language for which second-year instruction is not available.
Guidance in compiling a language portfolio (oral and written skills) to document competence equivalent to completion of the 2020 level. Setting learning objectives, selecting materials, developing methods, strategies and learning tools.
Precludes additional credit for LANG 2020, LANG 2110. 
Prerequisite(s): grade of C or higher in LANG 1020 or LANG 1110, and permission of the School.

Latin (LATN)

LATN 1005 [0.5 credit]
Introduction to Latin I
A course for beginners in Latin, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Latin.
Includes: Experiential Learning Activity
Lectures and practice periods four hours a week.

LATN 1006 [0.5 credit]
Introduction to Latin II
A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.
Includes: Experiential Learning Activity
Prerequisite(s): LATN 1005 or equivalent.
Lectures and practice periods four hours a week.

LATN 2200 [0.5 credit]
Intermediate Latin I
Further study of the language; introduction to the reading of Latin authors.
Includes: Experiential Learning Activity
Prerequisite(s): LATN 2001.
Precludes additional credit for LATN 2001.
Tutorials three hours a week.

LATN 2201 [0.5 credit]
Intermediate Latin II
Continued study of the language; reading of selected prose and poetry by Latin authors; development of translation skills.
Precludes additional credit for LATN 2001.
Prerequisite(s): LATN 2200 or equivalent.
Tutorials three hours a week.

LATN 3900 [0.5 credit]
Advanced Latin I
Reading and critical discussion of selections from Latin poetry.
Prerequisite(s): LATN 2200, LATN 2201 or equivalent.
Tutorials three hours a week.

LATN 3901 [0.5 credit]
Advanced Latin II
Reading and critical discussion of selections from Latin prose.
Prerequisite(s): LATN 2200, LATN 2201 or equivalent.
Tutorials three hours a week.

LATN 4900 [0.5 credit]
Directed Study

LATN 4901 [0.5 credit]
Directed Study
Latin American and Caribbean Studies (LACS)

Latin American and Caribbean Studies (LACS) Courses

LACS 1001 [0.5 credit]
Introduction to Latin American and Caribbean Studies I
An introduction to the history, culture, societies, and literatures of the region. Students will get a broad overview of the region and will be introduced to the disciplines used to study these societies.
Lectures three hours per week.

LACS 1002 [0.5 credit]
Introduction to Latin American and Caribbean Studies II
An interdisciplinary introduction to the major political, economic, environmental, and geographical issues confronting the region.
Lectures three hours per week.

LACS 4001 [0.5 credit]
Issues in Latin American and Caribbean Studies
An examination of the major issues confronting Latin America and the Caribbean including democratization, economic integration, indigenous and women’s movements, human rights, social justice, and political change.
Prerequisite(s): fourth-year standing or permission from Latin American and Caribbean Studies.
Seminar three hours per week.

LACS 4819 [0.5 credit]
Latin America and the World
Latin America’s changing relations with states, international institutions and non-state actors in the Global North and South. Topics may include security, South-South cooperation, trade, investment and transnational migration and drug trafficking.
Also listed as PSCI 4819.
Prerequisite(s): fourth-year standing or permission from Latin American and Caribbean Studies.
Seminar three hours a week.

Law (LAWS)

Law (LAWS) Courses

Note: some graduate courses may also be open to interested fourth-year students with permission of the Department.

LAWS 1001 [0.5 credit]
Introduction to Legal Studies 1
Introduction to legal studies: concepts, sources, nature and functions of law; historical, cultural and constitutional foundations of Canadian legal system; common and civil law traditions; statutory interpretation; precedent; legal institutions; frameworks for analyzing formal and informal conceptions of law and its role in society.
Precludes additional credit for LAWS 1000 (no longer offered).
Lectures and discussion three hours a week.

LAWS 1002 [0.5 credit]
Introduction to Legal Studies 2
Introduction to legal rules and theoretical approaches for critically understanding the creation, interpretation and enforcement of those rules; the role of judges, juries, lawyers, and lay persons; adjudication and alternative dispute resolution; relationship of law with social change and justice; challenges of access to justice.
Precludes additional credit for LAWS 1000 (no longer offered).
Lectures and discussion three hours a week.

LAWS 2105 [0.5 credit]
Social Justice and Human Rights
Theories and practices of law and social justice. Issues examined may include: civil democracy and repression; global governance and the rule of law; democratic movements and social power; human rights instruments, regimes and remedies; armed conflict; and humanitarian intervention.
Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, PSCI 1100, PSCI 1200 or HUMR 1001 [1.0] or PAPM 1000 [1.0].
Lectures three hours a week.

LAWS 2201 [0.5 credit]
Persons and Property
Origins and scope of the concept of person in law and how concepts of legal personality change over time. Origins and scope of the concept of property and how concepts of property change over time.
Precludes additional credit for LAWS 2003 (no longer offered).
Prerequisite(s): LAWS 1001 and LAWS 1002.
Lectures three hours a week.

LAWS 2202 [0.5 credit]
Obligations
The concepts employed by the law for creating and enforcing legal obligations between persons within society, including contract, tort, fiduciary obligation and restitution. Consideration is given to the role of persons and the role of the state in ordering private legal obligations.
Precludes additional credit for LAWS 2003 (no longer offered).
Prerequisite(s): LAWS 1001 and LAWS 1002.
Lectures three hours a week.
LAWS 2301 [0.5 credit]
Criminal Justice System
The institutional and social production of criminal law in Canada. Processes, personnel, and agencies in the criminal legal system. The role of discretion and mechanisms of accountability. The accused and the place of the victim. Issues and problems in sentencing and punishment.
Precludes additional credit for LAWS 2004 (no longer offered).
Prerequisite(s): LAWS 1001 and LAWS 1002.
Lectures three hours a week.

LAWS 2302 [0.5 credit]
Criminal Law
The legal and social dimensions of criminal liability and responsibility in Canada, including issues and problems surrounding mens rea, actus reus, and the attachment of liability. Excuses and justifications, the Canadian Criminal Code and the role of the Charter in the criminal legal system.
Precludes additional credit for LAWS 2004 (no longer offered).
Prerequisite(s): LAWS 1001 and LAWS 1002.
Lectures three hours a week.

LAWS 2501 [0.5 credit]
Law, State and Constitution
Law relating to the state, society and the constitution, with a focus on the historical framework, federalism, and constitutional reform in Canada.
Precludes additional credit for LAWS 2005 (no longer offered).
Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, PSCI 1100, PSCI 1200, or PAPM 1000 [1.0].
Lectures three hours a week.

LAWS 2502 [0.5 credit]
Law, State and Citizen
Law relating to the state and its relationship to individuals and groups in society, with a focus on the administrative process, basic values and the Charter.
Precludes additional credit for LAWS 2005 (no longer offered).
Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, PSCI 1100, PSCI 1200, or PAPM 1000 [1.0].
Lectures three hours a week.

LAWS 2601 [0.5 credit]
Public International Law
Examination of the role of law in contemporary international relations. Nature, history and sources of international law; international personality of states; status of international organizations and individuals; creation and effect of international obligations; importance and functions of law in the settlement of international disputes.
Precludes additional credit for LAWS 3603 (no longer offered).
Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, PSCI 1100, PSCI 1200, or PAPM 1000 [1.0].
Lectures three hours a week.

LAWS 2908 [0.5 credit]
Methodological Approaches in Legal Studies 1
Introduction to the legal research process and analysis of legal methodology; finding and analyzing primary and secondary legal sources. Students are strongly encouraged to take this course in the second year of their program.
Includes: Experiential Learning Activity
Prerequisite(s): LAWS 1001 and LAWS 1002 or LAWS 1000 (no longer offered).
Lectures and tutorials three hours a week.

LAWS 3001 [0.5 credit]
Women and the Legal Process
How the legal process has affected the status of women. Areas of concentration within the Canadian context include the criminal law, citizenship and immigration, education, employment, and welfare and social services.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3003 [0.5 credit]
Contracts
The enforcement of promises and agreements; basic doctrines and underlying principles of the law of contract are studied from formation of the contract to remedies for breach of contract; role of contract for economic and social purposes is also considered.
Prerequisite(s): LAWS 2202 and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3005 [0.5 credit]
Law and Regulation
Definitions and goals of regulation; contemporary theories and debates about legal and non-legal approaches to regulation. Approaches studied may include market mechanisms, public agency regulation, self-regulation and governance in co-operation with associations in civil society.
Prerequisite(s): 1.0 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502.
Lectures three hours a week.

LAWS 3006 [0.5 credit]
Mediation
Theory and practice of mediation; historical roots and influences; contrasts with formal litigation and other dispute resolution processes; issues of social and legal control; critiques, including feminist, Marxist and critical race theory; issues of power, gender, race and class; application to contemporary issues and disputes.
Prerequisite(s): (LAWS 1001 and LAWS 1002) and (1.0 credit in LAWS at the 2000 level or 0.5 credit in LAWS at the 2000 level and BUSI 2601).
Lectures three hours a week.
LAWS 3101 [0.5 credit]
**Philosophy of Law: The Nature of Law**
The concept of law, leading theories of law and related concepts such as rules and obligations, power and authority, coercion, and justice.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3102 [0.5 credit]
**Philosophy of Law: The Logic of the Law**
Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession. Also listed as PHIL 3102.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3103 [0.5 credit]
**Law, Culture, and the Humanities: A Foundation**
Themes, approaches and debates in the field of law, culture and the humanities. Primary materials considered may include theoretical writings/cultural criticism/literary texts/films/video/photography and music. These texts present different modes and means of inquiring into the assumptions and aspirations that we ascribe to law.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3105 [0.5 credit]
**Theory of Law and Politics**
Theories of law and politics; prominent thinkers and schools of thought; influence on legal and political institutions. Topics include law and ethics, justice and equity, positivism and natural law, state absolutism, codifications, and anthropological and historical theories of law and society.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level, or 0.5 credit in LAWS at the 2000 level and PSCI 1100. Lectures three hours a week.

LAWS 3106 [0.5 credit]
**Law and Social Regulation**
A study of sociological theories of law as well as the nature of legal institutions. Impacts of legal regulation on various social institutions and on processes of social debate and conflict. Also listed as SOCI 3480.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3201 [0.5 credit]
**Business Enterprise Frameworks**
Forms of carrying on business activity: proprietorships, partnerships, corporations and Crown entities. The rights and obligations of such business enterprises both internally and in relation with other persons. The relationship between legal form and economic function. The role of state intervention.
Prerequisite(s): LAWS 2201 and LAWS 2202. Lectures three hours a week.

LAWS 3202 [0.5 credit]
**Intellectual Property**
Critical assessment of copyright, patents, trademarks, trade secrets and other forms of intellectual property; regulation and governance of information technology including self-regulation, standard setting, licensing, competition policy and international dimensions.
Prerequisite(s): 1.0 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502. Lectures three hours a week.

LAWS 3203 [0.5 credit]
**The Legal Nature of Property**
An examination of the nature and functions of property as a legal and social institution, with particular reference to theories of property, the scope of property interests, and the relationship between individual property rights and the state.
Prerequisite(s): LAWS 2201 and LAWS 2202. Lectures three hours a week.

LAWS 3205 [0.5 credit]
**Consumer Law**
Need for consumer protection in the provision of goods and services; traditional legal protection by statute and common law; legislative responses to consumer pressures; judicial response in recent Canadian, English and American law; reform of consumer law.
Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3206 [0.5 credit]
**Banking Law**
The law relating to banks and banking; the nature of the legal relationship created; legal rights and duties of the parties involved. Consumer and corporate aspects of banking (including computerization and electronic funds transfers); regulations of banking.
Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3207 [0.5 credit]
**International Transactions**
Topics may include: the international sale of goods, finance of transnational transactions, international carriage of goods, insurance, agency and trading houses; other forms of trade, e.g., counter-trade, foreign investment; settlement of international disputes by litigation and arbitration.
Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level. Lectures three hours a week.
LAWS 3208 [0.5 credit]
International Trade Regulation
International regulation of trade and investment through bilateral, regional and multilateral treaties and agreements. Topics may include: WTO, NAFTA, the EU, UNCTAD, intergovernmental commodity agreements, dispute settlement.
Prerequisite(s): (0.5 credit from LAWS 2202, LAWS 2501, LAWS 2601, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3209 [0.5 credit]
Canadian Correctional Policies in Historical Perspective
History of corrections in Canada in the context of the international evolution of western penal systems, Canadian corrections in the twentieth century and expansion of alternatives to prison after WWII; criminological debates about the theoretical and empirical significance of historical milestones in corrections.
Prerequisite(s): LAWS 2301 and LAWS 2302.
Lectures three hours a week.

LAWS 3303 [0.5 credit]
Torts
Principles of legal liability for harm caused to the person or property of others; examination of policy rationales justifying and limiting liability; responsiveness to changing social values and conditions. Particular focus on negligence law; may also consider nuisance, intentional torts and other topics.
Prerequisite(s): LAWS 2201 and LAWS 2202.
Lectures three hours a week.

LAWS 3305 [0.5 credit]
Crime and State in History
The history of the relationship between the criminal law system and society. Changing issues in the criminal law and the nature of institutional responses, covering medieval to early nineteenth-century England and nineteenth to early twentieth-century Canada.
Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3306 [0.5 credit]
Crime, Law, Process and Politics
Criminal law process in Canada; structure and use of the process examined for fairness, defects, and possible reform initiatives. Issues concerning gender, race and class bias in the implementation and application of the criminal law.
Prerequisite(s): LAWS 2301 and LAWS 2302.
Lectures three hours a week.

LAWS 3307 [0.5 credit]
Youth and Criminal Law
A review of the Youth Criminal Justice Act within the framework of the Canadian justice system, with particular emphasis on historical and philosophical developments and objectives. Current topics include: constitutional issues, procedure, confessions, transfers, sentencing options, alternative measures, reviews, and possible amendments.
Prerequisite(s): LAWS 2301 and LAWS 2302.
Lectures three hours a week.

LAWS 3308 [0.5 credit]
Punishment and the Law
This course explores justifications and practices of punishment and social control from a socio-legal perspective. Rationalizations and justifications for punishment are considered. Different forms of punishment and control within the law will be examined as well as different theoretical perspectives of punishment.
Prerequisite(s): LAWS 2301 and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3309 [0.5 credit]
Employment Law
Legal regulation of the employment relationship; its contractual basis; defining employment; rights and duties of employees and employers; termination of employment; statutory regulation through employment standards legislation, human rights codes, workers' compensation acts, occupational health and safety and related statutes.
Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3310 [0.5 credit]
Labour Law
Role of law in industrial relations; effect of law on collective bargaining relationships; recognition of bargaining agent; regulation of bargaining; administration of the collective agreement; methods of conflict resolution.
Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3311 [0.5 credit]
Constitutional Law
An investigation of the Canadian constitution. Sovereignty, the nature and units of executive, legislative, and judicial power in Canada as interpreted by the courts. The distribution of powers under the Canadian constitution, including an investigation of contemporary problems of federalism. Problems of judicial review.
Prerequisite(s): (LAWS 2501 or PSCI 2003) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.
LAWS 3501 [0.5 credit]
Law in the Information Society
Legal responses to challenges of the information society. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, control of objectionable content, Charter and human rights issues, and security.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3502 [0.5 credit]
Regulating Freedom of Expression in Canada
The claimed relationship between freedom of expression and Canadian democracy, including the historical development of the right and various limits on it, and the regulatory structures governing contemporary media, criminalized and commercial expression, and use of media in the courtroom.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3503 [0.5 credit]
Equality and Discrimination
Human rights issues and law in Canada; history and present day experiences of discrimination; critical exploration of laws effectiveness in responding to discrimination; meaning(s) of equality and discrimination; focus on Human Rights Codes - interpretation, administration, enforcement with some reference to s.15 of the Charter.
Prerequisite(s): (0.5 credit from LAWS 2105, LAWS 2302, LAWS 2502) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3504 [0.5 credit]
Law and Aboriginal Peoples
The legal situation of aboriginal peoples in Canada. Topics include status, aboriginal rights, treaties, legislative jurisdiction and the constitutional framework, aboriginal claims, and self-government. Comparative references to aboriginal policy in other countries.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3506 [0.5 credit]
Administrative Law
Structure and procedure of Canadian administrative authorities; policy, statutory and judicial environments in which they operate. Topics include techniques for implementing public policy and structuring public authorities; statutory interpretation; procedural safeguards; exercise of statutory discretion; reconciling efficiency and fairness.
Prerequisite(s): LAWS 2502 and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3508 [0.5 credit]
Health Law
Legal/ethical issues in health care regulation. Topics may include: regulation of health professions; economics of health care; informed consent/choice; regulation of drugs, devices and research; medical malpractice and other liability; mental health issues; patient/client records.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3509 [0.5 credit]
The Charter of Rights Topics
Selected issues in the Canadian Charter of Rights and Freedoms. The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): (0.5 Credit from LAWS 2105, LAWS 2201, LAWS 2302, LAWS 2502) and 0.5 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3602 [0.5 credit]
International Human Rights
The developing international law relating to the protection of human rights. General concepts, rules and institutions. Specific issues include self-determination, aboriginal rights, the refugee problem, and torture. The inherent problems and overall potential of international law.
Precludes additional credit for LAWS 4604 (no longer offered).
Prerequisite(s): (0.5 credit from LAWS 2105, LAWS 2502, LAWS 2601 or HUMR 2001) and 0.5 credit in LAWS at the 2000 level or PAPM 1000.
Lectures three hours a week.

LAWS 3604 [0.5 credit]
International Organizations
Prerequisite(s): LAWS 2601 and 0.5 credit in LAWS at the 2000 level or PAPM 1000.
Lectures three hours a week.

LAWS 3800 [0.5 credit]
Law of Environmental Quality
Various aspects of environmental law; pollution control, legal actions and remedies; legal foundations for participation in decision-making processes. Social, economic and political forces influencing the formulation and implementation of environmental law. Alternative forms of regulation that may articulate different demands.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.
LAWS 3804 [0.5 credit]
**Law of the Family**
Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes.
Also listed as SOWK 3804.
Prerequisite(s): LAWS 2201 and LAWS 2202.
Lectures three hours a week.

LAWS 3903 [0.5 credit]
**Selected Legal Topics**
The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level.
Lectures three hours a week.

LAWS 3904 [0.5 credit]
**Selected Legal Topics**
The topics of this course may vary from year to year, and are announced in advance of registration.
Prerequisite(s): 1.0 credit in LAWS at the 2000 level and permission of Department.
Lectures three hours a week.

LAWS 3908 [0.5 credit]
**Methodological Approaches in Legal Studies 2**
Advanced approaches to interdisciplinary research and analysis in law and legal studies. Methodological approaches considered will vary by section, and may include theoretical, quantitative, qualitative, literary, or historical approaches.
Prerequisite(s): LAWS 2908 and third-year Honours standing. Honours students are strongly encouraged to take this course in the third year of their program.
Lectures three hours a week.

LAWS 3999 [0.0 credit]
**Co-operative Work Term**
Includes: Experiential Learning Activity
Prerequisite(s): registration in the B.A. Honours (concentration in Business Law or concentration in Law, Policy and Government) Cooperative Program, completion of Co-op preparation classes offered by the Co-op office and permission of the Department.

LAWS 4001 [0.5 credit]
**Law, Family and Gender**
Relationship between family law and ideology of the family, gender roles and the reproduction of family structures. Social ramifications of family law; potential for family law reform as an agency of social change.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3001 or LAWS 3804, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4002 [0.5 credit]
**Feminist Theories of Law**
The literature comprising feminist perspectives on law; theoretical bases of these perspectives; place of feminist theories within other critiques of law; significance of different feminist theories for equality theory and law reform strategies; unique contributions of the various perspectives.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4006 [0.5 credit]
**Religion and State in Canada**
Legal nature of the interaction of religion and state within an historical framework. Emphasis on Canada after the Charter of Rights and Freedoms and on religious pluralism and resistance to state intervention in religion.
Interdisciplinary readings drawn from legal, historical and theological sources.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4100 [0.5 credit]
**Modern Legal Theory**
Realist and post-realist legal scholarship; emphasis on Canadian, American and British approaches. Topics include the Canadian treatise tradition, American legal realism, empirical approaches to legal problems, the sociological movement in law, critical and Canadian feminist legal scholarship, Marxian theories of law, normative economic theory.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4101 [0.5 credit]
**Contemporary Justice Theories**
Selected major contemporary theories of justice such as those associated with Rawls, Walzer, and Habermas, with emphasis on both their procedural and substantive elements and their concrete ramifications for law, policy and political practice.
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4102 [0.5 credit]
**Controversies in Rights Theory**
This course examines selected controversies in rights theories, practices, and/or historiography. Illustrative questions may include: Are rights universal or culturally relative? Can rights be justified after the demise of natural rights philosophy? Do rights undermine difference? Do communities benefit from a rights-based culture?
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.
Seminars three hours a week.
LAWS 4103 [0.5 credit]
Special Topic in the Philosophy of Law
Detailed study of a special topic in philosophy of law. Also listed as PHIL 4407.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4104 [0.5 credit]
Special Topic in the Philosophy of Law
Detailed study of a special topic in philosophy of law. Also listed as PHIL 4408.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4105 [0.5 credit]
Global Justice Theory
Selected theories of global justice as they pertain to legality, which may include questions such as the justice of military force and just war theory, global social justice and global inequality, sovereignty and cosmopolitan conceptions of justice, demands for global democracy and human rights.
Prerequisite(s): LAWS 2105, LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4106 [0.5 credit]
Law and Violence
Examination of how law defines, justifies, and addresses individual, collective and state violence: contemporary and historical case studies; theoretical inquiries into the relationship between law, legality and different forms of violence.
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4107 [0.5 credit]
Law in Modern Society
Sociological and legal theory accounts of the changing role and function of law in modern society with particular reference to advanced capitalist societies. Topics include: the welfare state and the use of regulatory law; juridification and legalization; counter-trends, deregulation, informalism, legal pluralism.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4200 [0.5 credit]
International Economic Law
Selected topics in international economic law. May include: the legal regulation of international economic activity; methods of dispute settlement; standardization and development of an autonomous international trade law; and selected conventions and institutions governing international economic law.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3207 or LAWS 3208, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4202 [0.5 credit]
Accountability of Management
Role, function, and legal regulation of persons managing business enterprises. Status, social responsibility, fiduciary obligations and rights. Control and accountability of managers, obligations owed to the enterprise unit itself, constitutional rights of members, standards imposed by statutory regulation.
Prerequisite(s): LAWS 2908, LAWS 3201 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4204 [0.5 credit]
Legal Issues in eCommerce
An examination of selected legal topics relevant to the conduct of electronic commerce. Topics include types of regulation, government support, jurisdiction challenges, contract disputes and consumer protection. Court and alternative dispute resolution policy of Domain Names challenges are also included.
Prerequisite(s): LAWS 2908, LAWS 2201, LAWS 2202 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4209 [0.5 credit]
Topics in Business Law
Examination of a selected advanced topic in business law. The topics of this course may vary from year to year and are announced in advance of registration.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 2201 or LAWS 2202, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4302 [0.5 credit]
Regulation of Corporate Crime
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4303 [0.5 credit]
Drugs, The User and The State
This course explores the state’s attempts to control drugs and drug users by exploring different aspects of national and international drug control. The Canadian experience of drug control, viewed from different perspectives, will be explored within a broader socio-legal context.
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002, and 0.5 credit from LAWS 2301 or LAWS 2302, and fourth-year Honours standing.
Seminars three hours a week.
LAWS 4304 [0.5 credit]
**Policing and Social Surveillance**  
Theoretical consideration of the emergence and transformation of "policing" activities through an examination of law and changes in social relations, with special attention to the myriad agencies involved in contemporary security provision. Evolving notions of risk, surveillance, the state, and the private-public dichotomy.  
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002, and 0.5 credit from LAWS 2301 or LAWS 2302, and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4305 [0.5 credit]
**Criminal Justice Reform**  
Social transformation and criminal justice reform. Theoretical and practical reasons for the use of criminal law as an instrument of social control. Specific reform initiatives and processes. Alternate responses to social problems.  
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4306 [0.5 credit]
**Criminal Law Issues**  
Selected issues and problems in the area of criminal law. The topics may vary from year to year depending on demand and interest and are announced in advance of registration.  
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4307 [0.5 credit]
**Medical Criminal Law Issues**  
Legal-medical issues, conflicts and relationships in the field of social control. Topics include mental disorder and criminal liability, diversion of offenders to civil commitment in hospital, insanity, automatism, fitness to stand trial, prediction of dangerousness, regulation of psychoactive drugs.  
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4308 [0.5 credit]
**Sentencing**  
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4309 [0.5 credit]
**State Security and Dissent**  
Historical and contemporary analysis of legal responses of Canadian governments to dissent, political opposition, insurrection, etc. Includes trial of political offences (treason, sedition, riot), national security measures (War Measures/Emergencies Act, Official Secrets Act), and other special powers (police, labour, immigration, parliamentary privilege, etc.).  
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and 0.5 credit from LAWS 3305, LAWS 3503, LAWS 3509, and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4311 [0.5 credit]
**Human Rights in Canadian Prisons**  
Correctional law in the Canadian criminal justice system; competing objectives of punishment and rehabilitation in the context of respect for the rule of law and human rights; protection of human rights of prisoners in Canada and in international and comparative contexts.  
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4402 [0.5 credit]
**Employment Dispute Resolution**  
Theory and practice of dispute resolution in employment relations; analysis of such techniques as negotiation, grievance and interest arbitration, mediation, investigation and litigation applied to a range of employment disputes such as collective agreements, termination of employment, discrimination, harassment, occupational health and safety.  
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3006, LAWS 3401, LAWS 3405, and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4503 [0.5 credit]
**Law, Disability and Society**  
Exploration of the ways in which law promotes or hinders the inclusion of disabled persons in society. Consideration of different theories of 'disability' and the creation of barriers faced by disabled persons. Topics may include barriers affecting education, employment, transportation, benefits, and life/death decisions.  
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.  
Seminars three hours a week.
LAWS 4504 [0.5 credit]
Indigenous Criminal Justice
Indigenous peoples and the administration of Canadian criminal justice including policing, courts, corrections and aftercare. Content and effects of past and present policies, processes and laws. Alternatives such as self-government and self-determination; potential approaches to an appropriate justice system for Indigenous peoples.
Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4507 [0.5 credit]
Administrative Law and Control
Examination of characteristics and selected problems of control of administrative action. Topics include: varieties of traditional and constitutional, legal and judicial control, impact of the Charter, reforms to administrative law control systems in Canada, and comparisons with developments outside Canada.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3005 or LAWS 3506, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4510 [0.5 credit]
Topics in Law, Policy and Government
Examination of a selected advanced topic in the area of law, policy and government. The topics of this course may vary from year to year and are announced in advance of registration.
Prerequisite(s): LAWS 2501, LAWS 2502, LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4601 [0.5 credit]
Transnational Law and Human Rights
Examination of the role of law in addressing human rights issues that transcend traditional categories of domestic and international law; the potential and limits of law in addressing human rights issues; the growth of transnational approaches to law and human rights.
Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3503 or LAWS 3602, and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4603 [0.5 credit]
Transitional Justice
Legal and ethical responses to human rights violations in the transition to democracy. Dilemmas of the rule of law; truth and reconciliation; prosecution and punishment; amnesty; retribution and revenge; restorative justice; administrative remedy; reparations; International case studies. Theoretical arguments about justice in context of country.
Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4605 [0.5 credit]
Topics in International Law
Topics vary from year to year and are announced in advance. May include transnational environmental issues; the international law of armed conflict, peacekeeping and neutrality; the law of international treaties and transnational agreements; state responsibility under international law.
Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4606 [0.5 credit]
International Law of Armed Conflict
Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4607 [0.5 credit]
Immigration and Refugee Law
Immigrants and refugees; demographics; Canadian, international and human rights law and policy. The Canadian Immigration Act. Legal and social problems including entry and removal, family reunion, citizenship, remedies, the rights of clandestine migrants; settlement rights; non-discrimination; asylum; a nation's right to determine membership.
Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2602 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4610 [0.5 credit]
Special Topics in Transnational Law and Human Rights
Examination of a selected advanced topic in the area of transnational law and human rights. The topics of this course may vary from year to year and are announced in advance of registration.
Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.
Seminars three hours a week.

LAWS 4701 [0.5 credit]
Special Topic in Criminal Justice and Social Policy
Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the Department of Law. Also listed as SOWK 4701.
Prerequisite(s): LAWS 2908 and fourth-year Honours standing.
Seminars three hours a week.
LAWS 4702 [0.5 credit]
Special Topic in Criminal Justice and Social Policy
Examination of a selected topic in criminal justice and social policy. Topics to be announced. Also listed as SOWK 4702 and SOCI 4702. Prerequisite(s): LAWS 2908 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4703 [0.5 credit]
Special Topic in Criminal Justice and Social Policy
Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the School of Social Work. Also listed as SOWK 4703. Prerequisite(s): LAWS 2908 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4800 [0.5 credit]
Environment and Social Justice
The potential of environmental law to protect the environment and people while promoting opportunities for informed participation in environmental decision making by groups traditionally excluded from these processes; contemporary issues of social justice raised by legal regulation of the environment. Prerequisite(s): LAWS 2908 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4801 [0.5 credit]
Risk and the Legal Process
Application of risk assessment and management in various legal arenas including insurance, liability and tort, litigation management, environmental protection, and sentencing and parole. Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4802 [0.5 credit]
Criminal Jury Trials
Critical analysis of the criminal jury system including its history and context, the role of the judge, jury dynamics and jury composition. Perspectives and roles of the accused, victims, police, defence counsel, Crown attorney, judges, juries, media, politicians and the public. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4901 [0.5 credit]
Tutorial in Law
Tutorials or reading courses conducted under the supervision of a faculty member of the Department of Law on a selected topic in which advanced courses are not available (guidelines are posted by the Department). Prerequisite(s): LAWS 3908, fourth-year Honours standing, written acceptance by a faculty member and permission of the Undergraduate Supervisor. Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LAWS 4902 [0.5 credit]
Tutorial in Law
Tutorials or reading courses conducted under the supervision of a faculty member of the Department of Law on a selected topic in which advanced courses are not available (guidelines are posted by the Department). Prerequisite(s): LAWS 3908, fourth-year Honours standing, written acceptance by a faculty member and permission of the Undergraduate Supervisor. Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LAWS 4903 [0.5 credit]
Advanced Legal Topics
The topics of this course vary from year to year and are announced in advance of registration. Prerequisite(s): LAWS 2908 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4904 [0.5 credit]
Advanced Legal Topics
The topics of this course vary from year to year and are announced in advance of registration. Prerequisite(s): LAWS 2908, fourth-year Honours standing, and permission of Department. Seminars three hours a week.

LAWS 4905 [1.0 credit]
Full-Year Service Learning Placement
This course gives students the opportunity to work with an organization whose focus relates to law. Participating students must identify a host organization and a faculty member to provide supervision (guidelines are posted by the Department). Includes: Experiential Learning Activity Prerequisite(s): LAWS 2908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher, written acceptance by a faculty member, permission of the Undergraduate Supervisor and the host organization. Work at placement site 7-10 hours per week. Regular weekly meetings with on-site supervisor or faculty supervisor.
LAWS 4906 [0.5 credit]
Service Learning Placement
This course gives students the opportunity to work with an organization whose focus relates to law. Participating students must identify a host organization and a faculty member to provide supervision (guidelines are posted by the Department).
Includes: Experiential Learning Activity
Prerequisite(s): LAWS 2908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher, written acceptance by a faculty member, permission of the Undergraduate Supervisor and the host organization. Work at placement site 7-10 hours per week. Regular weekly meetings with on-site supervisor or faculty supervisor.

LAWS 4908 [1.0 credit]
Honours Paper
Students in the BA Honours Law program may write an Honours paper under the supervision of a faculty member of the Department of Law (guidelines are posted by the Department). Students intending to undertake graduate studies are encouraged to complete an Honours paper. Includes: Experiential Learning Activity
Prerequisite(s): LAWS 3908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher and written acceptance by a faculty member. Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LING 1001 [0.5 credit]
Introduction to Linguistics I
Nature of language and linguistic knowledge. Formal description and analysis of language: phonetics, phonology, morphology, syntax and semantics. Lecture and tutorial three hours a week.

LING 1002 [0.5 credit]
Introduction to Linguistics II
Survey of topics in linguistics: language change, sociolinguistics, language acquisition and processing. May include language typology, language contact and writing systems. Prerequisite(s): LING 1001 (may be taken concurrently). Lectures three hours a week.

LING 1100 [0.5 credit]
The Mysteries of Language
This course explores some intriguing mysteries of language - whether it is unique to humans, how children master its complexities so easily, how the brain handles language, how languages are born and die. These questions lead us to interesting discoveries about the human mind. Lectures three hours a week.

LING 2005 [0.5 credit]
Linguistic Analysis
Phonological, morphological and syntactic analysis of linguistic data. Coursework consists primarily of practical exercises in data analysis. Includes: Experiential Learning Activity
Prerequisite(s): LING 1001. Lecture and tutorial three hours a week.

LING 2007 [0.5 credit]
Phonetics
Description of speech sounds; transcription systems; articulation; acoustics of speech sounds; perception of speech sounds; cross-linguistic diversity and phonetic universals; the role of phonetics in grammar. Includes: Experiential Learning Activity
Prerequisite(s): LING 1001. Precludes additional credit for LING 2001 (no longer offered). Lecture and tutorial three hours a week.

LING 2504 [0.5 credit]
Language and Communication
Some of the central topics in the study of language and communication as pursued by linguists and philosophers. Topics include: the nature of meaning; the connections between language, communication and cognition; language as a social activity. Also listed as PHIL 2504, COMS 2504. Prerequisite(s): second-year standing. Lectures three hours a week.

LING 2604 [0.5 credit]
Communication Disorders I
A survey course highlighting congenital, developmental and acquired disorders of speech, language, fluency, hearing and voice; prevalence, current research, assessment and intervention approaches for each disorder will be presented. Also listed as ALDS 2604. Prerequisite(s): second year standing or permission of the instructor. Lectures three hours a week.

LING 2802 [0.5 credit]
History of the English Language
A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions. Also listed as ENGL 2105. Prerequisite(s): second-year standing or permission of the department. Lectures three hours a week.
LING 3004 [0.5 credit]
Syntax I
Introduction to syntactic theory. Representation and analysis of sentence structure, syntactic relations and syntactic dependencies. Testing of grammatical hypotheses.
Includes: Experiential Learning Activity
Prerequisite(s): LING 2005.
Lecture and tutorial three hours a week.

LING 3005 [0.5 credit]
Morphology I
Introduction to word structure and morphological theory. Topics include inflectional and derivational morphology, morphological processes, and interaction of morphology with phonology and syntax.
Includes: Experiential Learning Activity
Prerequisite(s): LING 2005 and LING 2007.
Lectures three hours a week.

LING 3007 [0.5 credit]
Phonology I
The sound-systems of languages, analysis of phonological structure; generative phonology; phonological rules and derivations; cross-linguistic diversity and universals; segmental phonology; stress; tone.
Includes: Experiential Learning Activity
Precludes additional credit for LING 3002 (no longer offered).
Prerequisite(s): LING 2001 (no longer offered) or LING 2007.
Lecture and tutorial three hours a week.

LING 3009 [0.5 credit]
Special Topic in Linguistics
Selected topics in general linguistics not ordinarily treated in the regular course program. Contents of the course vary from year to year.
Lectures and discussion three hours per week.

LING 3004 [0.5 credit]
Pragmatics
The study of language in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker’s reference; speech acts. May include cross-cultural pragmatics.
Also listed as PHIL 3504.
Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/LING 2504/COMM 2504 or PHIL 3504/LING 3504, or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Lectures three hours a week.

LING 3505 [0.5 credit]
Semantics
Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.
Also listed as PHIL 3506.
Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/LING 2504/COMM 2504 or PHIL 3504/LING 3504, or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Lectures three hours a week.

LING 3601 [0.5 credit]
Language Processing and the Brain
Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.
Includes: Experiential Learning Activity
Also listed as PSYC 3709.
Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.
Lectures three hours a week.

LING 3603 [0.5 credit]
Child Language
Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.
Includes: Experiential Learning Activity
Also listed as PSYC 3508.
Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.
Lectures three hours a week.

LING 3604 [0.5 credit]
Communication Disorders II
In-depth evaluation of current psycholinguistic models of processes underlying communication disorders and the biomedical support for such models. Emphasis on contrasting developmental disorders with acquired disorders. Additional exploration of other modalities (sign language, reading).
Also listed as ALDS 3604.
Precludes additional credit for LING 3009 Section "A", if taken Winter 2013.
Prerequisite(s): LING 2604.
Lectures three hours a week.
LING 3701 [0.5 credit]
Corpus Linguistics
Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.
Includes: Experiential Learning Activity
Also listed as ALDS 3701.
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

LING 3702 [0.5 credit]
Sociolinguistics
The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.
Also listed as ALDS 3202.
Precludes additional credit for ALDS 2701 (no longer offered).
Prerequisite(s): ALDS 1001 and third-year standing.
Lecture three hours a week.

LING 3801 [0.5 credit]
Structure of a Specific Language
Description and analysis of the structure of a specific language applying phonology, morphology, syntax, and semantics. Language to be studied will be announced in advance by the School.
Prerequisite(s): LING 2001 (no longer offered) or LING 2005 or LING 2007.
Lectures three hours a week.

LING 3810 [0.5 credit]
Historical Linguistics I
Language change; sound change; analogy; the comparative method; internal reconstruction; the philological method; historical linguistics and pre-history; language change and theories of grammar.
Precludes additional credit for LING 3101.
Prerequisite(s): LING 2007.
Lectures three hours a week.

LING 3811 [0.5 credit]
Language Typology and Universals
Cross-linguistic survey of syntactic and morphological patterns found in the languages of the world. Typological classification and identification of language universals.
Includes: Experiential Learning Activity
Precludes additional credit for LING 3001.
Prerequisite(s): LING 2005.
Lectures three hours a week.

LING 3900 [1.0 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

LING 3901 [0.5 credit]
Independent Study
Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.

LING 4004 [0.5 credit]
Syntax II
Advanced topics in syntax.
Includes: Experiential Learning Activity
Precludes additional credit for LING 4002 (no longer offered).
Prerequisite(s): LING 3004 and third-year standing.
Seminars three hours a week.

LING 4005 [0.5 credit]
Morphology II
Advanced topics in morphology.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3005 and third-year standing.
Seminars three hours a week.

LING 4007 [0.5 credit]
Phonology II
Advanced topics in phonology.
Includes: Experiential Learning Activity
Precludes additional credit for LING 4001 (no longer offered).
Prerequisite(s): LING 3007, and third-year standing.
Seminars three hours a week.

LING 4009 [0.5 credit]
Special Topic in Linguistics
Examination of a topic or more specialized area in linguistics or language study. Topic to be announced.
Repeatable for credit when the topic changes.
Prerequisite(s): third- or fourth-year standing in Linguistics or permission of the instructor.
Also offered at the graduate level, with different requirements, as LING 5009, for which additional credit is precluded.
Seminars three hours a week.
LING 4412 [0.5 credit]

Diversité du français
Études des variétés du français, dans ses dimensions spatiales. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English. Also listed as FREN 4412.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded.
Seminars three hours a week.

LING 4413 [0.5 credit]

Diachronie du français
Étude du français, dans ses dimensions historiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English. Also listed as FREN 4413.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded.
Seminars three hours a week.

LING 4414 [0.5 credit]

Analyse du français
Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Course is taught in French, but students will submit written assignments in English. Also listed as FREN 4414.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.
Seminars three hours a week.

LING 4415 [0.5 credit]

Variation du français
Étude des variations internes de la langue, dans des dimensions orales/écrites. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Course is taught in French, but students submit assignments in English. Also listed as FREN 4415.
Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.
Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded.
Seminars three hours a week.

LING 4505 [0.5 credit]

Formal Semantics
Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.
Includes: Experiential Learning Activity
Also listed as PHIL 4505.
Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing, or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Seminars three hours a week.

LING 4510 [0.5 credit]

Lexical Semantics
Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.
Includes: Experiential Learning Activity
Also listed as PHIL 4055.
Precludes additional credit for LING 4055 (no longer offered).
Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing.
Also offered at the graduate level, with different requirements, as LING 5510, for which additional credit is precluded.
Seminars three hours a week.

LING 4601 [0.5 credit]

Cognitive Neuroscience of Language
Further study of psychological and neurolinguistic mechanisms of adult language processing. May include topics from first language acquisition.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3601 or permission of the instructor.
Also offered at the graduate level, with different requirements, as LING 5601, for which additional credit is precluded.
Seminars three hours a week.

LING 4603 [0.5 credit]

First Language Acquisition
Advanced topics in language acquisition and development and the relative contributions of the environment, cognitive development, and inborn knowledge.
Includes: Experiential Learning Activity
Prerequisite(s): LING 1001 and LING 3603.
Also offered at the graduate level, with different requirements, as LING 5603, for which additional credit is precluded.
Seminars three hours a week.
LING 4604 [0.5 credit]
Practicum in Speech Language Pathology
Through seven-hour-a-week field placements, students pursue personal learning objectives concerning the clinical application of the psycholinguistics of communication disorders and cognitive development. A term paper integrates experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the student’s program of study.
Includes: Experiential Learning Activity
Prerequisite(s): LING 3604, fourth-year Honours standing in B.A. or B.Sc. in Linguistics with a Concentration in Psycholinguistics and Communication Disorders with a CGPA of 10.0 in the major, and permission from the School of Linguistics and Language Studies. Field placement one day a week.

LING 4605 [0.5 credit]
Psycholinguistic Research Methods
Experimental methodologies used in current psycholinguistic studies. Topics include experimental design and techniques, descriptive statistics, and interpreting and reporting research findings.
Includes: Experiential Learning Activity
Precludes additional credit for LING 4009 Section "A" (2015-16 and 2016-17) and LING 4009 Section "B" (2013-14) and LING 4009 Section "C" (2017-18).
Prerequisite(s): third- or fourth-year Honours standing in Linguistics or Cognitive Science, or permission of the instructor.
Also offered at the graduate level, with different requirements, as LING 5605, for which additional credit is precluded.
Seminar three hours a week.

LING 4606 [0.5 credit]
Statistics for Language Research
Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.
Includes: Experiential Learning Activity
Also listed as ALDS 4606.
Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.
Prerequisite(s): Third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.
Also offered at the graduate level, with different requirements, as LING 5606 and ALDS 5604, for which additional credit is precluded.
Seminar three hours a week.

LING 4801 [0.5 credit]
Linguistic Field Methods
With a language consultant, students discover the phonological, morphological, and syntactic structures of the target language using linguistic elicitation. Language will vary from year to year, but will normally be a non-European language. Language documentation, data management, ethical issues surrounding research in Indigenous communities.
Includes: Experiential Learning Activity
Prerequisite(s): LING 2005 and LING 2007.
Also offered at the graduate level, with different requirements, as ALDS 5801, for which additional credit is precluded.
Lectures three hours a week.

LING 4802 [0.5 credit]
Historical Linguistics: English
A theory-intensive course that will study the development of English starting with Proto-Indo-European progressing through Common Germanic to the stages of English itself. Topics include phonological sound changes, phonemic inventories, and morphological and syntactic typology.
Precludes additional credit for LING 4101.
Prerequisite(s): LING 2005 and LING 2007, and one of LING 3005, LING 3810 or LING 3811.
Also offered at the graduate level, with different requirements, as LING 5802, ENGL 5101., for which additional credit is precluded.
Seminars three hours a week.

LING 4805 [0.5 credit]
Old English
Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.
Also listed as ENGL 4105.
Precludes additional credit for ENGL 3102 (no longer offered).
Prerequisite(s): fourth-year standing or permission of the department.
Seminars or lecture three hours a week.

LING 4900 [1.0 credit]
Independent Study in Linguistics
Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.
Prerequisite(s): permission of the instructor.

LING 4901 [0.5 credit]
Independent Study in Linguistics
Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.
Prerequisite(s): permission of the instructor.
LING 4905 [1.0 credit]
Honours Project in Experimental Linguistics
Students choose existing study in linguistic literature, replicate the study, present findings, compare to original study. Practical experience gathering and preparing materials, running experiments, analyzing data, interpreting findings; real, important contributions to the field of linguistics via replication studies (as mandated by the scientific method).
Includes: Experiential Learning Activity
Precludes additional credit for LING 4910.
Prerequisite(s): fourth-year Honours standing in Linguistics, with a Major CGPA of 9.0, and permission of the instructor.
Unscheduled.

LING 4910 [1.0 credit]
Honours Thesis in Linguistics
Open to all candidates for the B.A. (Honours) in Linguistics. A thesis project selected in consultation with the School and carried out under the direction of a faculty supervisor.
Includes: Experiential Learning Activity
Precludes additional credit for LING 4905.
Prerequisite(s): fourth-year Honours standing in Linguistics with a CGPA of 10.0 in the major; one of LING 3004, LING 3007, LING 3505, or LING 3601; and permission of the instructor.
Unscheduled.

Mathematics (MATH)

Mathematics (MATH) Courses
Note:
• See also the course listings under Statistics (STAT) in this Calendar.
Prerequisites for First-year Mathematics Courses in B.Math. Programs
Students who do not have the required Ontario Grade 12 Mathematics courses or equivalents may take MATH 0005 Precalculus: Functions and Graphs and MATH 0006 Precalculus: Trigonometric Functions and Complex Numbers in lieu of Advanced Functions, MATH 0107 Algebra and Geometry in lieu of the algebra component of Calculus and Vectors. These 0000-level mathematics courses serve as alternate prerequisites for MATH 1052 Calculus and Introductory Analysis I and MATH 1152 Introductory Algebra I. These courses would be in addition to the minimum 15.0 credits required for B.Math programs, or 20.0 credits required for B.Math Honours programs.

MATH 0005 [0.5 credit]
Precalculus: Functions and Graphs
Prerequisite(s): Grade 11 Functions (University/College Preparation), or equivalent.
Lectures three hours a week, tutorial one hour a week.

MATH 0006 [0.5 credit]
Precalculus: Trigonometric Functions and Complex Numbers
Prerequisite(s): Grade 11 Functions (University/College Preparation), or MATH 0005, or equivalent.
Lectures three hours a week, tutorial one hour a week.

MATH 0009 [0.5 credit]
Calculus and Vectors
Prerequisite(s): Grade 12 Mathematics (Advanced Functions); or both MATH 0005 and MATH 0006; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 0107 [0.5 credit]
Algebra and Geometry
Prerequisite(s): Grade 11 Functions (University/College Preparation) or equivalent.
Lectures three hours a week, tutorial one hour a week.
MATH 1004 [0.5 credit]  
Calculus for Engineering or Physics  
Limits. Differentiation of the elementary functions.  
Rules of differentiation. Inverse trigonometric functions.  
Applications of differentiation: max-min problems,  
curve sketching, approximations. Define and indefinite  
integrals, techniques of integration. Applications to areas  
and volumes.  
Precludes additional credit for BIT 1000, BIT 1100,  
BIT 1200, MATH 1002 (no longer offered), MATH 1007,  
MATH 1052.  
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced  
Functions, or MATH 0005 and MATH 0006, or equivalent.  
Restricted to students in the Faculty of Engineering, or in  
certain B.Sc. and B.A.S. programs where specified.  
Lectures three hours a week, tutorial one hour a week.

MATH 1005 [0.5 credit]  
Differential Equations and Infinite Series for  
Engineering or Physics  
First-order differential equations. Second-order linear  
equations with constant coefficients, undetermined  
coefficients, variation of parameters. Sequences and  
series, convergence tests, estimation of sums. Power  
series, Taylor series, remainders. Fourier series.  
Precludes additional credit for BIT 2004 (no longer  
offered), BIT 2007 (no longer offered), MATH 1002  
(no longer offered), MATH 2007, MATH 2052, and  
MATH 2404.  
Prerequisite(s): i) MATH 1004; and ii) MATH 1104  
(or MATH 1107), either previously or concurrently; or  
equivalents; or permission of the School. Restricted to  
students in the Faculty of Engineering, or in certain B.Sc.  
programs where specified.  
Lectures three hours a week, tutorial one hour a week.

MATH 1007 [0.5 credit]  
Elementary Calculus I  
Limits. Differentiation of the elementary functions,  
including trigonometric functions. Rules of differentiation.  
Applications of differentiation: max-min problems, curve  
sketching, approximations. Introduction to integration:  
definite and indefinite integrals, areas under curves,  
fundamental theorem of calculus.  
Precludes additional credit for BIT 1000, BIT 1100,  
BIT 1200, MATH 1002 (no longer offered), MATH 1004,  
MATH 1401/ECON 1401, MATH 1402/ECON 1402,  
MATH 1052.  
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced  
Functions; or MATH 0005 and MATH 0006; or equivalent.  
Lectures three hours a week, tutorial one hour a week.

MATH 1009 [0.5 credit]  
Mathematics for Business  
An introductory course of mathematics for business.  
Thorough review of basic arithmetic and algebra.  
Elementary functions, their graphs, properties and  
applications in business models. Limits. Derivatives  
of elementary functions. Systems of linear equations/  
inequalities. Geometric series.  
Precludes additional credit for BIT 1000, BIT 1100,  
BIT 1200, BUSI 1705 (no longer offered), MATH 1401/  
ECON 1401, MATH 1402/ECON 1402, MATH 1052. This  
course is not acceptable for (substitute) credit in any of  
the following degree programs: B.Math., and also B.Sc.,  
B.C.S., B.Eng., B.I.D.  
Prerequisite(s): Restricted to B.Com. and B.I.B students.  
Lectures three hours a week, tutorial one hour a week.

MATH 1009 [0.5 credit]  
Mathematics for Business  
An introductory course of mathematics for business.  
Thorough review of basic arithmetic and algebra.  
Elementary functions, their graphs, properties and  
applications in business models. Limits. Derivatives  
of elementary functions. Systems of linear equations/  
inequalities. Geometric series.  
Precludes additional credit for BIT 1000, BIT 1100,  
BIT 1200, BUSI 1705 (no longer offered), MATH 1401/  
ECON 1401, MATH 1402/ECON 1402, MATH 1052. This  
course is not acceptable for (substitute) credit in any of  
the following degree programs: B.Math., and also B.Sc.,  
B.C.S., B.Eng., B.I.D.  
Prerequisite(s): Restricted to B.Com. and B.I.B students.  
Lectures three hours a week, tutorial one hour a week.

MATH 1052 [0.5 credit]  
Calculus and Introductory Analysis I  
Properties of the real numbers. Limits. Sequences and  
Extreme values. Mean Value Theorem. L'Hospital's rules.  
Antiderivatives. An emphasis is placed on proofs and  
theory.  
Precludes additional credit for BIT 1000, BIT 1100,  
BIT 1200, MATH 1002 (no longer offered), MATH 1004,  
MATH 1007, MATH 1009, MATH 1401/ECON 1401,  
MATH 1402/ECON 1402.  
Prerequisite(s): i) Grade 12 Mathematics: Advanced  
Functions, and Grade 12 Mathematics: Calculus  
and Vectors, with grades of at least 75% in each; or  
MATH 0005 and MATH 0006 with grades of at least B  
in each; or equivalents; and ii) MATH 1800 (may be taken  
currently); or permission of the School of Mathematics  
and Statistics.  
Lectures three hours a week, tutorial one and one half  
hours a week.

MATH 1104 [0.5 credit]  
Linear Algebra for Engineering or Science  
Invertible matrix theorem. Cramer's rule. Vector space  
R^n; subspaces, bases. Eigenvalues, diagonalization.  
Linear transformations, kernel, range. Complex numbers  
(including De Moivre's theorem). Inner product spaces and  
orthogonality. Applications.  
Precludes additional credit for BIT 1001, BIT 1101,  
BIT 1201, MATH 1102 (no longer offered), MATH 1107,  
MATH 1119, MATH 1401/ECON 1401, MATH 1402/  
ECON 1402, MATH 1152. Note: MATH 1119 is not an  
acceptable substitute for MATH 1104.  
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced  
Functions, or MATH 0005, or equivalent, or permission  
of the School. Restricted to students in the Faculty of  
Engineering, the School of Computer Science, or in certain  
B.Sc. and B.A.S. programs where specified.  
Lectures three hours a week and tutorial one hour a week.
MATH 1107 [0.5 credit]
Linear Algebra I
Systems of linear equations; vector space of n-tuples, subspaces, bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product. Complex numbers (including de Moivre's Theorem, and n-th roots). Eigenvalues, diagonalization and applications. Note: MATH 1119 is not an acceptable substitute for MATH 1107.
Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152.
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School.
Lectures three hours a week and tutorial one hour a week.

MATH 1119 [0.5 credit]
Linear Algebra: with Applications to Business
Introduction to systems of linear equations, geometric interpretation in two and three dimensions, introduction to matrices, vector addition and scalar multiplication, linear dependence, matrix operations, rank, inversion, invertible matrix theorem, determinants. Use of illustrative examples related to business.
Precludes additional credit for, but is not an acceptable substitute for: BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1107. BUSI 1704 (no longer offered), MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. This course is not acceptable for (substitute) credit in any of the following degree programs: B.Math., and also B.Sc., B.C.S., B.Eng., B.I.D.
Prerequisite(s): Ontario Grade 12 Mathematics of Data Management; or Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 1152 [0.5 credit]
Introductory Algebra I
Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1107, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402.
Prerequisite(s): i) Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005, MATH 0006, and MATH 0107 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.
Lectures three hours a week, tutorial one and a half hours a week.

MATH 1401 [0.5 credit]
Elementary Mathematics for Economics I
Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model.
Also listed as ECON 1401.
Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201; MATH 1007, MATH 1009, MATH 1052, MATH 1104, MATH 1107, MATH 1119, MATH 1152.
Prerequisite(s): Ontario Grade 12 U Advanced Functions, or MATH 0005, or equivalent; and ECON 1000 or FYSM 1003, which may be taken concurrently with MATH 1401/ECON 1401.
Lectures three hours a week, tutorial one hour a week.

MATH 1402 [0.5 credit]
Elementary Mathematics for Economics II
Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model.
Also listed as ECON 1402.
Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201; MATH 1007, MATH 1009, MATH 1052, MATH 1104, MATH 1107, MATH 1119, MATH 1152.
Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401/MATH 1401 with a grade of C- or higher.
Lectures three hours a week, tutorial one hour a week.

MATH 1800 [0.5 credit]
Introduction to Mathematical Reasoning
Elementary logic, propositional and predicate calculus, quantifiers, sets and functions, bijections and elementary counting, the concept of infinity, relations, well ordering and induction. The practice of mathematical proof in elementary number theory and combinatorics.
Precludes additional credit for MATH 1805/COMP 1805.
Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent.
Lectures three hours a week, tutorial one hour a week.
MATH 1007 [0.5 credit]
Discrete Structures I
Introduction to discrete mathematics and discrete structures. Topics include: propositional logic, predicate calculus, set theory, complexity of algorithms, mathematical reasoning and proof techniques, recurrences, induction, finite automata and graph theory. Material is illustrated through examples from computing. Includes: Experiential Learning Activity
Precludes additional credit for MATH 1800.
Prerequisite(s): one Grade 12 university preparation Mathematics course; and one of: COMP 1005 or COMP 1405 or SYSC 1100 (which may be taken concurrently).
Lectures three hours a week, tutorial one hour a week.

MATH 2000 [1.0 credit]
Multivariable Calculus and Fundamentals of Analysis
Higher dimensional calculus, chain rule, gradient, line and multiple integrals with applications. Use of implicit and inverse function theorems. Real number axioms, limits, continuous functions, differentiability, infinite series, uniform convergence, the Riemann integral.
Precludes additional credit for BIT 2005 (no longer offered), MATH 2004, MATH 2008, and MATH 3009.
Prerequisite(s): i) MATH 2052 with a grade of C+ or higher, or (MATH 2007 or MATH 1005 with a grade of B+ or higher and permission of the School); and ii) MATH 2152 with a grade of C+ or higher, or MATH 1107 or MATH 1104 with a grade of B+ or higher; and iii) MATH 1800 with a grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 2004 [0.5 credit]
Multivariable Calculus for Engineering or Physics
Prerequisite(s): i) MATH 1005 or MATH 2007; and ii) MATH 1104 or MATH 1107; or permission of the School.
Restricted to students in the Faculty of Engineering, or in certain B.Sc. programs where specified.
Lectures three hours a week, tutorial one hour a week.

MATH 2007 [0.5 credit]
Elementary Calculus II
Precludes additional credit for BIT 2007 (no longer offered), MATH 1002 (no longer offered), MATH 1005, MATH 2052.
Prerequisite(s): i) MATH 1004, or a grade of C- or higher in MATH 1007; or MATH 1052 and permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 2008 [0.5 credit]
Intermediate Calculus
Partial differentiation, chain rule, gradient, line and multiple integrals with applications, transformations of multiple integrals.
Precludes additional credit for BIT 2005 (no longer offered), MATH 2000, and MATH 2004.
Prerequisite(s): one of MATH 1005, MATH 2052, or MATH 2007, and one of MATH 1104, MATH 1107, or MATH 1152.
Lectures three hours a week and one hour tutorial.

MATH 2052 [0.5 credit]
Calculus and Introductory Analysis II
Precludes additional credit for BIT 2007, MATH 1002 (no longer offered), MATH 1005, MATH 2007.
Prerequisite(s): (i) MATH1052 with a grade of C- or higher or (MATH1007 or MATH1004 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one and one half hours a week.

MATH 2100 [1.0 credit]
Algebra
Introduction to group theory: permutation groups, Lagrange's theorem, normal subgroups, homomorphism theorems. Introduction to ring theory: ring of polynomials, integral domains, ideals, homomorphism theorems. Hermitian forms, spectral theorem for normal operators, bilinear and quadratic forms, classical groups.
Precludes additional credit for MATH 2108 and MATH 3101.
Prerequisite(s): i) MATH 2152 with a grade of C+ or higher, or (MATH 2107 with a grade of B+ or higher and permission of the School); and ii) MATH 1800 with a grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 2107 [0.5 credit]
Linear Algebra II
Precludes additional credit for MATH 1102 (no longer offered), MATH 2152.
Prerequisite(s): i) MATH 1104, or a grade of C- or higher in MATH 1107 or MATH 1109; and ii) a grade of C- or higher in MATH 1007 or equivalent; or MATH 1152 and permission of the School. Note: in item i), MATH 1119 is NOT acceptable as a substitute for MATH 1109.
Lectures three hours a week and one hour tutorial.
MATH 2108 [0.5 credit]
Abstract Algebra I
Sets and relations, number theory, group theory, ring theory, cardinal numbers.
Precludes additional credit for MATH 3101 and MATH 2100.
Prerequisite(s): i) MATH 2152 or MATH 2107; and ii) MATH 1800 (MATH 1800 may be taken concurrently, with permission of the School); or COMP 1805; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 2152 [0.5 credit]
Introductory Algebra II
Linear transformations. Determinants. Eigenvalues and eigenspaces. Diagonalization and other canonical forms. Inner products. An emphasis is placed on proofs and theory.
Precludes additional credit for MATH 1102 (no longer offered) and MATH 2107.
Prerequisite(s): (i) MATH1152 with a grade of C- or higher or (MATH1107 or MATH1104 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one and a half hours a week.

MATH 2210 [0.5 credit]
Introduction to Geometry
An introduction to classical geometry; Euclidean plane geometry; plane tiling; polytopes in three and four dimensions; curved surfaces; Euler characteristic. This course is intended for a general audience, and is available to B.Math. students for credit only as a free elective.
Prerequisite(s): Grade 12 Mathematics and second-year standing.
Lectures three hours a week, tutorial one hour a week.

MATH 2404 [0.5 credit]
Ordinary Differential Equations I
First-order equations, linear second- and higher-order equations, linear systems, stability of second-order systems.
Precludes additional credit for BIT 2004 (no longer offered), MATH 1005, MATH 2454.
Prerequisite(s): MATH 2052 and MATH 1152 (or MATH 1107 and MATH 2007).
Lectures three hours a week and one hour tutorial.

MATH 2454 [0.5 credit]
Ordinary Differential Equations (Honours)
Existence and uniqueness theorems. First-order equations, linear second- and higher-order equations, linear systems, stability of second-order systems.
Precludes additional credit for MATH 2404, BIT 2004 (no longer offered).
Prerequisite(s): MATH 2052 or MATH 2007 or MATH 1005 with a grade of C+ or higher, and MATH 2152 or MATH 2107 with a grade of C+ or higher.
Lectures three hours a week, tutorial one hour a week.

MATH 2800 [0.5 credit]
Discrete Mathematics and Algorithms
Also listed as CMPS 2800.
Precludes additional credit for Only one of MATH 1805/COMP 1805 or MATH 2800/CMPS 2800 may count for credit in a B.Math. program.
Prerequisite(s): COMP 1006 and at least one of MATH 1007, MATH 1107, or STAT 2507.
Lectures three hours a week.

MATH 2907 [0.5 credit]
Directed Studies (Honours)
Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 3001 [0.5 credit]
Real Analysis I (Honours)
Metric spaces and their topologies, continuous maps, completeness, compactness, connectedness, introduction to Banach spaces.
Prerequisite(s): MATH 2000 with a grade of C- or higher; or (MATH 3009 and MATH 1800) each with a grade of B or higher, and permission of the instructor; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3002 [0.5 credit]
Real Analysis II (Honours)
Function spaces, pointwise and uniform convergence, Weierstrass approximation theorem, Lebesgue measure and Lebesgue integral on the real line, Hilbert space, Fourier series.
Prerequisite(s): MATH 3001 with a grade of C- or higher, or (MATH 3009 and MATH 1800) each with a grade of B or higher, and permission of the instructor; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3003 [0.5 credit]
Advanced Differential Calculus (Honours)
Prerequisite(s): MATH 3001 with a grade of C- or higher, or permission of the School.
Lectures three hours a week, tutorial one hour a week.
MATH 3007 [0.5 credit]
Functions of a Complex Variable
Analytic functions, contour integration, residue calculus, conformal mapping. Intended for non-engineering students.
Precludes additional credit for MATH 3057 and PHYS 3807.
Prerequisite(s): one of MATH 2004, MATH 2008 or MATH 2009, or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3008 [0.5 credit]
Ordinary Differential Equations (Honours)
Prerequisite(s): i) MATH 2000 with a grade of C- or higher, or (MATH 3009 with a grade of B or higher, and permission of the instructor); and ii) MATH 2454 with a grade of C- or higher, or (MATH 2404 with a grade of B or higher, and permission of the instructor).
Lectures three hours a week and one hour tutorial.

MATH 3009 [0.5 credit]
Introductory Analysis
The real number system, sequences and series, functions of a single real variable, derivatives, the definite integral, uniform convergence. Precludes additional credit for MATH 2000.
Prerequisite(s): one of MATH 2004, MATH 2008, MATH 2009, or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3057 [0.5 credit]
Functions of a Complex Variable (Honours)
Analytic functions, contour integration, residue calculus, conformal mappings.
Precludes additional credit for MATH 3007 and PHYS 3807.
Prerequisite(s): MATH 2000 with a grade of C- or higher; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3101 [0.5 credit]
Algebraic Structures with Computer Applications
Introduction to algebraic structures: groups, rings, fields, lattices, and Boolean algebras; with applications of interest to students in Computer Science. This course may not be used to meet the 3000-level course requirements in any B.Math or B.Math Honours program in Mathematics and Statistics.
Precludes additional credit for MATH 2108 and MATH 2100.
Prerequisite(s): i) MATH 2107 or MATH 2152; and ii) either COMP 1805 or MATH 1800 (MATH 1800 may be taken concurrently, with permission of the School); or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3106 [0.5 credit]
Introduction to Group Theory (Honours)
Homomorphism theorems; groups acting on sets; permutation groups and groups of matrices; Sylow theory for finite groups; finitely generated abelian groups; generators and relations; applications.
Precludes additional credit for MATH 3108.
Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B or higher; and MATH 1800 with a grade of B or higher; and permission of the instructor); or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3107 [0.5 credit]
Linear Algebra III
Prerequisite(s): i) a grade of C- or higher in MATH 2152 or MATH 2107; and ii) credit in MATH 2052 or MATH 2007; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3108 [0.5 credit]
Abstract Algebra II
Precludes additional credit for MATH 3106 and MATH 3158.
Prerequisite(s): MATH 2108, or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3158 [0.5 credit]
Rings and Fields (Honours)
Rings, integral domains, Euclidean and principal ideal domains, fields, polynomial rings over a field, algebraic extensions of fields, the fundamental theorem of Galois theory, finite fields, applications.
Precludes additional credit for MATH 3108.
Prerequisite(s): MATH 2100 with a grade of C- or higher, or (MATH 2108 or MATH 3101 with a grade of B or higher and MATH 1800 with a grade of B or higher and permission of the instructor), or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3206 [0.5 credit]
Plane Projective Geometry
Axioms of Desarguesian geometry, principle of duality; projectivities, perspectivities, and the fundamental theorem; collineations (homologies and elations); correlations (polarities and conics); algebraic model; projective curves; introduction to finite projective planes.
Precludes additional credit for MATH 3256.
Prerequisite(s): MATH 2100 or MATH 2108 or MATH 3101.
Lectures three hours a week and one hour tutorial.
MATH 3210 [0.5 credit]
Euclidean and Non-Euclidean Geometry
Euclidean isometry and similarity groups; geometry of circles; inversion; hyperbolic geometry: Poincare disk model of the hyperbolic plane.
Precludes additional credit for MATH 3205.
Prerequisite(s): MATH 2100 or MATH 2108 or MATH 3101.
Lectures three hours a week, tutorial one hour a week.

MATH 3306 [0.5 credit]
Elements of Set Theory (Honours)
Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B- or higher; and MATH 1800 with a grade of B or higher; and permission of the instructor); or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3355 [0.5 credit]
Number Theory and Applications (Honours)
Congruences, distribution of primes, arithmetic functions, primitive roots, quadratic residues, quadratic reciprocity law, continued fractions, Diophantine equations, and applications; public key cryptography, primality testing and factoring in relation to cryptography.
Precludes additional credit for MATH 3809.
Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B- or higher; and permission of the instructor); or permission of the School.
Lectures three hours a week, tutorial one hour a week.

MATH 3404 [0.5 credit]
Ordinary Differential Equations II
Precludes additional credit for MATH 3008.
Prerequisite(s): MATH 2404, MATH 2008; and MATH 2152 or MATH 2107.
Lectures three hours a week and one hour tutorial.

MATH 3705 [0.5 credit]
Mathematical Methods I
Precludes additional credit for PHYS 3808. This course may be taken for credit as a 3000-level Honours Mathematics course by students in any Honours program in the School of Mathematics and Statistics.
Prerequisite(s): i) MATH 1005 or MATH 2404, and ii) MATH 2004 or MATH 2008 or MATH 2009; or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3800 [0.5 credit]
Mathematical Modeling and Computational Methods
Includes: Experiential Learning Activity Also listed as CMPS 3800.
Precludes additional credit for MATH 3806/COMP 3806.
Prerequisite(s): i) MATH 1107 or MATH 1104; ii) MATH 1005 or MATH 2007; and iii) knowledge of a computer language.
Lectures three hours a week, laboratory one hour a week.

MATH 3801 [0.5 credit]
Linear Programming
Systems of linear inequalities, formulation of linear programming problems, geometric method, the simplex method, duality theory, complementary slackness, sensitivity analysis, branch-and-bound method and cutting plane method for integer linear programming, applications and extensions.
Precludes additional credit for ECON 4004, SYSC 3200.
Prerequisite(s): MATH 2152 or MATH 2107, or permission of the School.
Lectures three hours a week and one hour tutorial.

MATH 3802 [0.5 credit]
Combinatorial Optimization
Prerequisite(s): MATH 3801 or permission of the School.
Lectures three hours a week, tutorial one hour a week.
MATH 3804 [0.5 credit]
Design and Analysis of Algorithms I
An introduction to the design and analysis of algorithms.
Topics include: recurrence relations, sorting and searching, divide-and-conquer, dynamic programming, greedy algorithms, NP-completeness.
Also listed as COMP 3804.
Prerequisite(s): i) one of COMP 2402 or SYSC 2100; and ii) one of COMP 2804 or MATH 3855 or MATH 3825 or COMP 3805.
Lectures three hours a week.

MATH 3806 [0.5 credit]
Numerical Analysis (Honours)
Elementary discussion of error, polynomial interpolation, quadrature, linear systems of equations and matrix inversion, non-linear equations, difference equations and ordinary differential equations. Implementation of numerical methods using a computer language.
Includes: Experiential Learning Activity
Precludes additional credit for MATH 3800.
Prerequisite(s): i) MATH 2000 with a grade of C- or higher; and ii) MATH 1152 with a grade of C- or higher, or (MATH 1107 or MATH 1104 with a grade of B or higher and permission of the instructor).
Lectures three hours a week, laboratory one hour a week.

MATH 3807 [0.5 credit]
Mathematical Software (Honours)
Implementation of numerical methods using numerical software packages. Development of scientific and/ or operations research applications using application programming interfaces of numerical or optimization libraries. Functional programming for data analysis and machine learning. Experience working with Python, C++, or Java is essential.
Includes: Experiential Learning Activity
Also listed as COMP 3807.
Prerequisite(s): A grade of C- or higher in MATH 3806 or COMP 3806.
Lectures three hours a week, laboratory one hour a week.

MATH 3808 [0.5 credit]
Mathematical Analyses of Games of Chance
This course covers mathematics used in the modern casino gaming industry. The topics include probabilities, odds, house advantages, variance and risks, optimal strategies, random walks and gambler’s ruin, and gaming revenue estimation. Examples are taken from various games such as Roulette, Blackjack, and Poker.
Prerequisite(s): one of STAT 2655, STAT 2605, STAT 2507, STAT 2606, STAT 3502, or MATH 3825 or MATH 3855.
Lectures three hours a week, tutorial one hour a week.

MATH 3809 [0.5 credit]
Introduction to Number Theory and Cryptography
Congruences, distribution of primes, general cryptographic systems, public key cryptographic systems and authentication using number theory, primality testing and factoring in relation to cryptography, continued fractions and Diophantine equations.
Prerequisite(s): MATH 2108 or MATH 3101 or MATH 2100; knowledge of a computer language.
Lectures three hours a week and one hour tutorial.

MATH 3819 [0.5 credit]
Modern Computer Algebra
Algorithms for multiplication, division, greatest common divisors and factorization over the integers, finite fields and polynomial rings. Basic tools include modular arithmetic, discrete Fourier transform, Chinese remainder theorem, Newton iteration, and Hensel techniques. Some properties of finite fields and applications to cryptography.
Includes: Experiential Learning Activity
Prerequisite(s): MATH 2108 or MATH 3101 or MATH 2100, COMP 1005 or equivalent; or permission of the School.
Lectures three hours a week, tutorial/laboratory one hour a week.

MATH 3825 [0.5 credit]
Discrete Structures and Applications
Enumeration: elementary methods, inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory and algorithms: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes.
Precludes additional credit for MATH 3805 (no longer offered), and MATH 3855 and COMP 3805.
Prerequisite(s): MATH 2108 or MATH 3101.
Lectures three hours a week, tutorial one hour a week.

MATH 3855 [0.5 credit]
Discrete Structures and Applications (Honours)
Also listed as COMP 3805.
Precludes additional credit for MATH 3805 (no longer offered) and MATH 3825.
Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101) with a grade of B or higher.
Lectures three hours a week, tutorial one hour a week.

MATH 3907 [0.5 credit]
Directed Studies
Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.
MATH 3999 [0.0 credit]
Co-operative Work Term Report (Honours)
On completion of each work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.
Includes: Experiential Learning Activity
Prerequisite(s): registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, and permission of the School.

MATH 4002 [0.5 credit]
Fourier Analysis (Honours)
Fourier series, Fourier integrals; introduction to harmonic analysis on locally compact abelian groups, Plancherel Theorem, Pontryagin duality; selected applications.
Prerequisite(s): MATH 3001 or permission of the School. Lectures three hours a week.

MATH 4003 [0.5 credit]
Functional Analysis (Honours)
Banach spaces and bounded linear operators, Hahn-Banach extension and separation, dual spaces, bounded inverse theorems, uniform boundedness principle, applications. Compact operators.
Prerequisite(s): MATH 4007 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5008, for which additional credit is precluded.
Lectures three hours a week.

MATH 4007 [0.5 credit]
Measure and Integration Theory (Honours)
Lebesgue measure and integration on the real line; sigma algebras and measures; integration theory; Lp spaces; Fubini's theorem; decomposition theorems and Radon-Nikodym derivatives.
Prerequisite(s): MATH 3001 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5007, for which additional credit is precluded.
Lectures three hours a week.

MATH 4008 [0.5 credit]
Group Theory (Honours)
Fundamental principles as applied to abelian, nilpotent, solvable, free and finite groups; representations.
Prerequisite(s): MATH 3106 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5106, for which additional credit is precluded.
Lectures three hours a week.

MATH 4009 [0.5 credit]
Commutative Algebra (Honours)
Fields, including algebraic and transcendental extensions, Galois theory, valuation theory; Noetherian commutative rings, including Noether decomposition theorem and localization.
Prerequisite(s): MATH 3158 or permission of the School. Lectures three hours a week.

MATH 4010 [0.5 credit]
Homological Algebra and Category Theory (Honours)
Axioms of set theory; categories, functors, natural transformations; free, projective, injective and flat modules; tensor products and homology functors, derived functors; dimension theory.
Prerequisite(s): MATH 3158 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5108, for which additional credit is precluded.
Lectures three hours a week.

MATH 4011 [0.5 credit]
Fields and Coding Theory (Honours)
Introduction to field theory, emphasizing the structure of finite fields, primitive elements and irreducible polynomials. The influence of computational problems will be considered. Theory and applications of error-correcting codes: algebraic codes, convolution codes, decoding algorithms, and analysis of code performance.
Prerequisite(s): MATH 2100, or MATH 3101 or MATH 2108 or equivalent; or permission of the School. Lectures three hours a week.

MATH 4102 [0.5 credit]
Group Representations and Applications (Honours)
An introduction to the group representations and character theory, with selected applications.
Prerequisite(s): MATH 3106, or a grade of B or higher in MATH 3108.
Also offered at the graduate level, with different requirements, as MATH 5102, for which additional credit is precluded.
Lectures three hours a week.

MATH 4105 [0.5 credit]
Rings and Modules (Honours)
Fundamental concepts in rings and modules, structure theorems, applications.
Prerequisite(s): MATH 3158 or permission of the School. Lectures three hours a week.
MATH 4206 [0.5 credit]
Introduction to Algebraic Topology (Honours)
An introduction to homotopy theory. Topics include the fundamental group, covering spaces and the classification of two-dimensional manifolds.
Prerequisite(s): MATH 3106 and MATH 4205; or permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5206, for which additional credit is precluded.
Lectures three hours a week.

MATH 4207 [0.5 credit]
Foundations of Geometry (Honours)
A study of at least one modern axiom system of Euclidean and non-Euclidean geometry, embedding of hyperbolic and Euclidean geometries in the projective plane, groups of motions, models of non-Euclidean geometry.
Prerequisite(s): MATH 3106 (may be taken concurrently) or permission of the School.
Lectures three hours a week.

MATH 4208 [0.5 credit]
Introduction to Differentiable Manifolds (Honours)
Introduction to differentiable manifolds; Riemannian manifolds; vector fields and parallel transport; geodesics; differential forms on a manifold; covariant derivative; Betti numbers.
Prerequisite(s): MATH 3002 or permission of the School.
Lectures three hours a week.

MATH 4305 [0.5 credit]
Analytic Number Theory (Honours)
Dirichlet series, characters, Zeta-functions, prime number theorem, Dirichlet's theorem on primes in arithmetic progressions, binary quadratic forms.
Prerequisite(s): MATH 3057 or permission of the School.
Lectures three hours a week.

MATH 4306 [0.5 credit]
Algebraic Number Theory (Honours)
Algebraic number fields, bases, algebraic integers, integral bases, arithmetic in algebraic number fields, ideal theory, class number.
Prerequisite(s): MATH 3158 (may be taken concurrently) or permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5306, for which additional credit is precluded.
Lectures three hours a week.

MATH 4600 [0.5 credit]
Case Studies in Operations Research (Honours)
Applications of the principles of Operations Research to practical problems in business, management, and science. Students present at least one case and analyze cases in the published literature. Cases may also be presented by visiting practitioners.
Includes: Experiential Learning Activity
Precludes additional credit for Students in Honours Mathematics/Statistics programs may only take course as a free option.
Prerequisite(s): STAT 2509 (or STAT 2559) and MATH 3801; or permission of the School.
Seminars three hours a week.

MATH 4700 [0.5 credit]
Partial Differential Equations (Honours)
First-order partial differential equations. Classification of second-order linear partial differential equations; the diffusion equation, wave equation and Laplace's equation; separation of variables; Fourier and Laplace transform methods for the solution of initial/boundary value problems; Green's functions.
Prerequisite(s): MATH 3057 and one of MATH 3008 or MATH 3705, or permission of the School.
Lectures three hours a week.

MATH 4701 [0.5 credit]
Topics in Differential Equations (Honours)
Topics in the theory and application of differential equations; for example, hyperbolic systems, fluid dynamics, nonlinear wave equations, optimal mass transport, control theory, calculus of variations.
Prerequisite(s): i) MATH 3001; and ii) one of MATH 3008 or MATH 3705; or permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5407, for which additional credit is precluded.
Lectures three hours a week.

MATH 4703 [0.5 credit]
Dynamical Systems (Honours)
Prerequisite(s): MATH 3001 and MATH 3008 or permission of the School.
Lectures three hours a week.
MATH 4708 [0.5 credit]
Asymptotic Methods of Applied Mathematics
(Honours)
Asymptotic series: properties, matching, application to
differential equations. Asymptotic expansion of integrals:
elementary methods, methods of Laplace, stationary
phase and steepest descent, Watson’s lemma, Riemann-
Lebesgue lemma. Perturbation methods: regular and
singular perturbation for differential equations, multiple
scale analysis, boundary layer theory, WKB theory.
Prerequisite(s): MATH 3057 and at least one of
MATH 3008 or MATH 3705, or permission of the School.
Also offered at the graduate level, with different
requirements, as MATH 5408, for which additional credit is
precluded.
Lectures three hours a week.

MATH 4801 [0.5 credit]
Topics in Combinatorics (Honours)
An in-depth study of one or more topics from: generating
functions, Polya’s theory of counting, block designs,
coding theory, partially ordered sets and Ramsey theory.
Prerequisite(s): MATH 2100 and MATH 3855 or
permission of the School.
Lectures three hours a week.

MATH 4802 [0.5 credit]
Introduction to Mathematical Logic (Honours)
Symbolic logic, propositional and predicate calculi, set
theory and model theory, completeness.
Prerequisite(s): MATH 2100 or permission of the School.
Lectures three hours a week.

MATH 4803 [0.5 credit]
Computable Functions (Honours)
Recursive functions and computability, algorithms,
Church’s thesis, Turing machines, computational logic,
NP-completeness.
Also listed as COMP 4803.
Prerequisite(s): MATH 2100 or MATH 3855 or permission of the School.
Lectures three hours a week.

MATH 4805 [0.5 credit]
Theory of Automata (Honours)
Finite automata and regular expressions, properties of
regular sets, context-free grammars, pushdown automata,
deterministic context-free languages. Turing machines, the
Chomsky hierarchy. Undecidability, intractable problems.
Also listed as COMP 4805.
Prerequisite(s): MATH 3106 or MATH 3158 or MATH 3855 or permission of the School.
Lectures three hours a week.

MATH 4806 [0.5 credit]
Numerical Linear Algebra (Honours)
Matrix computations, conditioning/stability, direct methods
for linear systems, classical iterative methods: Jacobi,
Gauss-Seidel; modern iterative methods, Arnoldi
decomposition, GMRES and other Krylov subspace-based
methods for sparse and structured matrices; numerical
solution of eigenvalue problems, implementation using
suitable programming language, application to differential
equations/optimization problems.
Also listed as COMP 4806.
Prerequisite(s): MATH 2152 or MATH 2107; MATH 2000
and MATH 3806; or permission of the School.
Lectures three hours a week.

MATH 4807 [0.5 credit]
Game Theory (Honours)
One-player games, two-player zero-sum games,
multi-player games, games in normal form, games in
extensive form, utility theory, Nash equilibrium and Nash
arbitration scheme, games in characteristic function form,
cooperative solutions, dominating solutions, stable sets, core,
Shapley value, applications of game theory.
Prerequisite(s): MATH 3801 or permission of the School.
Also offered at the graduate level, with different
requirements, as MATH 5607, for which additional credit is
precluded.
Lectures three hours a week.

MATH 4808 [0.5 credit]
Graph Theory and Algorithms (Honours)
Paths, circuits, Eulerian and Hamiltonian graphs,
connectivity, colouring problems, matching, Ramsey
theory, network flows.
Prerequisite(s): MATH 3106 or MATH 3158 or MATH 3855
or permission of the School.
Lectures three hours a week.

MATH 4809 [0.5 credit]
Mathematical Cryptography (Honours)
Topics covered include: a general survey of public key
cryptography; classical applications of finite fields and
number theory; relevant background in geometry and
algebraic curves; computational issues concerning elliptic
curves; elliptic curve cryptosystems; security issues.
Prerequisite(s): MATH 3158, or permission of the School.
Lectures three hours a week.

MATH 4811 [0.5 credit]
Combinatorial Design Theory (Honours)
Existence and construction of combinatorial designs:
finite geometries, pairwise balanced designs, balanced
incomplete block designs, Steiner triple systems,
symmetric designs, PBD closure, latin squares,
transversal designs, and applications to information theory.
Prerequisite(s): MATH 3855, or permission of the School.
Lectures three hours a week.
MATH 4816 [0.5 credit]
Numerical Analysis for Differential Equations (Honours)
Floating point arithmetic; numerical solution of ODEs; finite difference methods for PDEs; stability, accuracy and convergence; von Neumann analysis, CFL condition, Lax Theorem. Finite element methods: boundary value problems and elliptic PDEs. Spectral and pseudo-spectral methods.
Prerequisite(s): MATH 2454 and MATH 3806, or permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5806, for which additional credit is precluded.
Lectures three hours a week.

MATH 4821 [0.5 credit]
Quantum Computing (Honours)
Prerequisite(s): MATH 2152 (or MATH 2107) with a grade of C+ or better, and permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5821, for which additional credit is precluded.
Lectures three hours a week.

MATH 4822 [0.5 credit]
Wavelets and Digital Signal Processing (Honours)
Prerequisite(s): MATH 2152 (or MATH 2107) with a grade of C+ or better, and permission of the School.
Also offered at the graduate level, with different requirements, as MATH 5822, for which additional credit is precluded.
Lectures three hours a week.

MATH 4905 [0.5 credit]
Honours Project (Honours)
Consists of a written report on some approved topic or topics in the field of mathematics, together with a short lecture on the report.
Includes: Experiential Learning Activity
Prerequisite(s): B.Math.(Honours) students only.

MATH 4907 [0.5 credit]
Directed Studies (Honours)
Prerequisite(s): B.Math.(Honours) students only.

Mechanical Engineering (MECH)

MECH 3002 [0.5 credit]
Machine Design and Practice
The design of mechanical machine elements is studied from theoretical and practical points of view. Topics covered include: design factors, fatigue, and discrete machine elements. Problem analysis emphasizes the application to practical mechanical engineering problems.
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2001 and MAAE 3202.
Lectures three hours a week, problem analysis three hours a week.

MECH 3310 [0.5 credit]
Biofluid Mechanics
Applications of fundamental fluid mechanics to human circulatory and respiratory systems. Basic viscous flow theory including: blood flow in the heart and large arteries, air flow in extra-thoracic (nose-mouth throat) airways and lungs.
Includes: Experiential Learning Activity
Prerequisite(s): MATH 2004 and MAAE 2300.
Lectures three hours per week, laboratories or tutorials three hours per week.

MECH 3700 [0.5 credit]
Principles of Manufacturing
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2700.
Lectures three hours a week, problem analysis and laboratories three hours a week on alternate weeks.

MECH 3710 [0.5 credit]
Biomaterials
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2700.
Lectures three hours per week, laboratories and problem analysis three hours per week.
MECH 4003 [0.5 credit]
Mechanical Systems Design
Design of mechanical systems: establishing design criteria, conceptual design, design economics, value analysis, synthesis and optimization. Mechanical elements/systems: gear and flexible drive systems, fluid power systems. These elements are utilized in group design projects. Includes: Experiential Learning Activity
Prerequisite(s): MECH 3002 and fourth-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

MECH 4006 [0.5 credit]
Vehicle Engineering I
The course emphasizes the engineering and design principles of road transport vehicles. Topics to be covered include: performance characteristics, handling behaviour and ride quality of road vehicles.
Prerequisite(s): MAAE 3004 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4007 [0.5 credit]
Vehicle Engineering II
Engineering and design principles of off-road vehicles and air cushion technology. Topics include: mechanics of vehicle-terrain interaction - terramechanics, performance characteristics of off-road vehicles, steering of tracked vehicles, air cushion systems and their performance, applications of air cushion technology to transportation.
Prerequisite(s): MAAE 3004 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4013 [0.5 credit]
Biomedical Device Design
Prerequisite(s): MECH 3710, MAAE 3202, and MECH 4210 and fourth-year status in Engineering.
Lectures three hours per week, laboratories or tutorial three hours per week.

MECH 4101 [0.5 credit]
Mechanics of Deformable Solids
Course extends the student's ability in design and stress analysis. Topics include: introductory continuum mechanics, theory of elasticity, stress function approach, Lamé and Mitchell problems, stress concentrations, thermoelasticity and plasticity.
Prerequisite(s): MAAE 3202 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4102 [0.5 credit]
Corrosion and Corrosion Control
Prerequisite(s): Fourth-year status in Engineering.
Lectures three hours a week.

MECH 4103 [0.5 credit]
Fatigue and Fracture Analysis
Elastic and elasto-plastic fracture mechanics. Fatigue design methods, fatigue crack initiation and growth Paris law and strain-life methods. Fatigue testing, scatter, mean stress effects and notches. Welded and built up structures, real load histories and corrosion fatigue. Damage tolerant design and fracture control plans.
Prerequisite(s): MAAE 3202 and fourth-year status in Engineering.
Lectures three hours a week.

MECH 4104 [0.5 credit]
Vibration Analysis
Prerequisite(s): MAAE 3004 and fourth-year status in Engineering.
Lectures three hours per week.

MECH 4105 [0.5 credit]
Introduction to Nuclear Engineering
Prerequisite(s): Fourth-year status in Engineering.
Lectures three hours a week.

MECH 4106 [0.5 credit]
Nuclear Power Plant Design
Prerequisite(s): Fourth-year status in Engineering.
Lectures three hours per week.
MECH 4107 [0.5 credit]
Internal Combustion Engines
This course explores the design process of an internal combustion engine including: Internal Aerodynamics, Combustion, Rotating and Reciprocating Components, Structures, Control Systems, Manufacturing and Testing Methods. Students will design/optimize an engine component utilizing industry standard Ricardo Wave simulation software.
Prerequisite(s): Fourth-year status in Engineering. Lecture three hours per week.

MECH 4210 [0.5 credit]
Biomechanics
The biomechanics of biological systems; muscles and movement, nerves and motor control. Measurements of motion, strain and neural signals. The hand and manipulation; locomotion and the leg.
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2101 and fourth-year status in Engineering.
Lectures three hours per week, laboratories or tutorials three hours per week.

MECH 4305 [0.5 credit]
Fluid Machinery
Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.
Lectures three hours a week.
MECH 4501 [0.5 credit]
State Space Modeling and Control
Review of matrices. Geometric structure and dynamics of linear systems. Controllability and observability. Pole placement design of controllers and observers. Design of regulator and servo systems. Transmission zeros. Eigenstructure assignment. Relationship to frequency or classical control techniques. Computer solutions using MATLAB. Applications. Precludes additional credit for SYSC 5502. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours a week.

MECH 4503 [0.5 credit]
An Introduction to Robotics

MECH 4604 [0.5 credit]
Finite Element Methods
Finite element methodology with emphasis on applications to stress analysis, heat transfer and fluid flow using the simplest one- and two-dimensional elements. Direct equilibrium, variational and Galerkin formulations. Computer programs and practical applications. Higher order elements. Prerequisite(s): MAAE 3202 and fourth-year status in Engineering. Lectures three hours a week.

MECH 4704 [0.5 credit]
Integrated Manufacturing - CIMS
Overview of the topics essential to CIMS including integration of design and assembly techniques, numerical analysis, statistical process control and related production technologies within the manufacturing enterprise. Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as MECH 5704, for which additional credit is precluded. Lectures three hours a week.

MECH 4705 [0.5 credit]
CAD/CAM
Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed. Prerequisite(s): MAAE 2001 and fourth-year status in Engineering. Lectures three hours a week.

MECH 4805 [0.5 credit]
Measurement and Data Systems

MECH 4806 [0.5 credit]
Mechatronics
Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours per week.

Mechanical and Aerospace Engineering (MAAE)

MECH 5704 [0.5 credit]
Integrated Manufacturing - CIMS
Overview of the topics essential to CIMS including integration of design and assembly techniques, numerical analysis, statistical process control and related production technologies within the manufacturing enterprise. Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as MECH 5704, for which additional credit is precluded. Lectures three hours a week.

MECH 5705 [0.5 credit]
CAD/CAM
Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed. Prerequisite(s): MAAE 2001 and fourth-year status in Engineering. Lectures three hours a week.

MECH 5805 [0.5 credit]
Measurement and Data Systems

MECH 5806 [0.5 credit]
Mechatronics
Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours per week.

Mechanical and Aerospace Engineering (MAAE)

MECH 5806 [0.5 credit]
Mechatronics
Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours per week.

Mechanical and Aerospace Engineering (MAAE)

MECH 6704 [0.5 credit]
Integrated Manufacturing - CIMS
Overview of the topics essential to CIMS including integration of design and assembly techniques, numerical analysis, statistical process control and related production technologies within the manufacturing enterprise. Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as MECH 5704, for which additional credit is precluded. Lectures three hours a week.

MECH 6705 [0.5 credit]
CAD/CAM
Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed. Prerequisite(s): MAAE 2001 and fourth-year status in Engineering. Lectures three hours a week.

MECH 6805 [0.5 credit]
Measurement and Data Systems

MECH 6806 [0.5 credit]
Mechatronics
Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering. Lectures three hours per week.

Mechanical and Aerospace Engineering (MAAE)

MECH 7001 [0.5 credit]
Engineering Graphical Design
Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Assignments will make extensive use of Computer-Aided Design (CAD) and will include the production of detail and assembly drawings from actual physical models. Includes: Experiential Learning Activity Also listed as AERO 2001. Prerequisite(s): Second-year status in Engineering. Lectures and tutorials two hours a week, laboratory four hours a week.
MAAE 2101 [0.5 credit]
Engineering Dynamics
Review of kinematics and kinetics of particles: rectilinear and curvilinear motions; Newton's second law; energy and momentum methods. Kinematics and kinetics of rigid bodies: plane motion of rigid bodies; forces and accelerations; energy and momentum methods.
Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2101.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

MAAE 2202 [0.5 credit]
Mechanics of Solids I
Review of Principles of Statics; friction problems; Concepts of stress and strain at a point; statically determinate and indeterminate stress systems; torsion of circular sections; bending moment and shear force diagrams; stresses and deflections in bending; buckling instability.
Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2200.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 2300 [0.5 credit]
Fluid Mechanics I
Fluid properties. Units. Kinematics, dynamics of fluid motion: concepts of streamline, control volume, steady and one-dimensional flows; continuity, Euler, Bernoulli, steady flow energy, momentum, moment of momentum equations; applications. Fluid statics; pressure distribution in fluid at rest; hydrostatic forces on plane and curved surfaces; buoyancy.
Includes: Experiential Learning Activity
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2400 [0.5 credit]
Thermodynamics and Heat Transfer
Includes: Experiential Learning Activity
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2700 [0.5 credit]
Engineering Materials
Materials (metals, alloys, polymers) in engineering service; relationship of interatomic bonding, crystal structure and defect structure (vacancies, dislocations) to material properties; polymers, phase diagrams and alloys; microstructure control (heat treatment) and mechanical properties; material failure; corrosion.
Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2700.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3004 [0.5 credit]
Dynamics of Machinery
Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2101 and MATH 1005.
Lectures three hours a week, problem analysis and laboratories two hours a week.

MAAE 3202 [0.5 credit]
Mechanics of Solids II
Stress and strain transformations: torsion of non-circular sections; unsymmetric bending and shear centre; energy methods; complex stresses and criteria of yielding; elementary theory of elasticity; axisymmetric deformations.
Includes: Experiential Learning Activity
Precludes additional credit for CIVE 3202.
Prerequisite(s): MAAE 2202 and MATH 1005 (co-req).
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3300 [0.5 credit]
Fluid Mechanics II
Includes: Experiential Learning Activity
Prerequisite(s): MATH 2004 and MAAE 2300.
Lectures three hours a week, problem analysis and laboratory three hours a week.
MAAE 3400 [0.5 credit]
Applied Thermodynamics
Includes: Experiential Learning Activity
Prerequisite(s): MATH 1005 and MAAE 2400.
Lectures three hours a week, problem analysis and laboratories three hours a week.

MAAE 3500 [0.5 credit]
Feedback Control Systems
Includes: Experiential Learning Activity
Precludes additional credit for MAAE 4500 (no longer offered), SYSC 4505.
Prerequisite(s): MATH 3705 and (SYSC 3600 or SYSC 3610).
Lectures three hours a week, problem analysis and laboratories three hours a week.

MAAE 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

MAAE 4102 [0.5 credit]
Materials: Strength and Fracture
Analysis and prevention of failures in metals; plasticity analysis and plastic collapse; micro-mechanisms of fracture, conditions leading to crack growth and transition temperature effects, fracture mechanics, fatigue, environmentally assisted cracking, non-destructive evaluation and testing.
Prerequisite(s): MAAE 2202 and MAAE 2700 and fourth-year status in Engineering.
Lectures three hours a week.

MAAE 4902 [0.5 credit]
Special Topics: Mechanical and Aerospace Engineering
Selected advanced topics of interest to Aerospace and Mechanical Engineering students, subject to the discretion of the Faculty of Engineering and Design.
Prerequisite(s): permission of the Department.
Lecture three hours a week.

MAAE 4903 [0.5 credit]
Special Topics: Mech & Aero Eng.
At the discretion of the Faculty, a course may be offered that deals with selected advanced topics of interest to Aerospace and Mechanical Engineering students.
Prerequisite(s): permission of the Department.
Lecture three hours a week.

MAAE 4904 [0.5 credit]
Special Topics: Mechanical and Aerospace Engineering
Selected advanced topics of interest to Aerospace and Mechanical Engineering students, subject to the discretion of the Faculty of Engineering and Design.
Prerequisite(s): permission of department.
Lectures three hours a week.

MAAE 4906 [0.5 credit]
Special Topics: Mech and Aero Eng.
At the discretion of the Faculty, a course may be offered that deals with selected advanced topics of interest to Aerospace and Mechanical Engineering students.
Prerequisite(s): permission of the Department.

MAAE 4907 [1.0 credit]
Engineering Design Project
Team project in the design of an aerospace, biomedical, mechanical, or sustainable energy system. Opportunity to develop initiative, engineering judgement, self-reliance, and creativity in a team environment. Results submitted in a comprehensive report as well as through formal oral presentations.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year status in engineering and (completion of or concurrent registration in AERO 4003, AERO 4842, MECH 4003, MECH 4013, or SREE 4001, or permission of Department). Certain projects may have additional prerequisites.

MAAE 4917 [0.5 credit]
Undergraduate Directed Study
Study, analysis, and solution of an engineering problem. Results presented in the form of a written report. Carried out under the close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Department and completion of, or concurrent registration in, MAAE 4907.

Media Production and Design (MPAD)

Media Production and Design (MPAD) Courses
MPAD 1001 [0.5 credit]
Introduction to Storytelling: The Context
Theories, origins and evolution of story within society as the digital age shapes the way we construct and consume narratives. How stories are conceived through words, sound and images, and how they resonate with and influence audiences.
Lectures three hours a week.
MPAD 1002 [0.5 credit]  
**Introduction to Storytelling: The Practice**  
Finding and telling stories in engaging ways using text and basic images. Assignments build basic skills in research, interviewing, writing, storytelling, editing and ethics. How to structure and pitch for publication.  
Includes: Experiential Learning Activity  
Prerequisite(s): MPAD 1001.  
Workshop three hours a week.

MPAD 2001 [0.5 credit]  
**Basics of Visual Communication I**  
Introduction to visual storytelling through video. Students develop editorial and technical skills to produce video stories that include scripting to images. Students will also learn the basics of video shooting on a range of equipment as well as basic video editing skills.  
Includes: Experiential Learning Activity  
Prerequisite(s): MPAD 1002.  
Workshop three hours a week.

MPAD 2002 [0.5 credit]  
**Basics of Visual Communication II**  
This course expands from video theory and practice to still photography and multimedia projects, with emphasis on hands-on work with a theoretical underpinning, giving students the practical and technical skills to tell stories in multiple formats.  
Includes: Experiential Learning Activity  
Prerequisite(s): MPAD 2001.  
Workshop three hours a week.

MPAD 2003 [0.5 credit]  
**Introductory Data Storytelling**  
Governments use data for tracking. Numbers guide public policy and can become powerful and important stories. Students will gain a theoretical understanding of the promise and pitfalls of data availability alongside the practical skills needed for powerful data-based storytelling.  
Includes: Experiential Learning Activity  
Prerequisite(s): MPAD 1002.  
Workshop three hours a week.

MPAD 2004 [0.5 credit]  
**Writing for Media**  
This course tests student baseline skills, then develops writing capabilities tailored to specific media formats. Coursework is based on the principle that the best way to improve technique is through regular writing and timely constructive critiques.  
Includes: Experiential Learning Activity  
Prerequisite(s): MPAD 1002.  
Workshop three hours a week.

MPAD 2501 [0.5 credit]  
**Media Law**  
A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court. Also listed as COMS 2501, JOUR 2501.  
Prerequisite(s): Second-year standing in the Bachelor of Media Production and Design program.  
Lectures three hours a week.

MPAD 2500 [0.5 credit]  
**Directed Studies**  
Directed Studies on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.  
Prerequisite(s): Third year standing in Media Production and Design or permission from the School of Journalism and Communication.  
Unscheduled.

MPAD 3001 [0.5 credit]  
**Storytelling and Social Media**  
Social media in storytelling. Theory-based lectures, hands-on course modules, discussions and presentations. Students will learn tactics to apply social media for research, gathering information, finding contacts and promoting their own work.  
Includes: Experiential Learning Activity  
Prerequisite(s): MPAD 2004.  
Lecture three hours a week.

MPAD 3002 [0.5 credit]  
**Civic Engagement and Public Institutions I**  
Expert sources from Canadian institutions discuss covering the economy, justice, environment and security. How public policy is made, the role of the public and how the media analyze information, develop ideas, and produce stories.  
Prerequisite(s): third-year standing in the Bachelor of Media Production and Design or the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information.  
Lectures three hours a week.

MPAD 3003 [0.5 credit]  
**Civic Engagement and Public Institutions II: Minor Design Project**  
Group work building on the fall term course. Production of a public institutions mini-project involving the various development stages that will be employed in the final year capstone project, including the creation of a detailed design document to guide group projects.  
Includes: Experiential Learning Activity  
Prerequisite(s): MPAD 3002.  
Workshop three hours a week.
MPAD 3300 [0.5 credit]
Media Ethics in a Digital World
An examination of ethical issues relating to production of news and other forms of information content, particularly as they relate to digital environments. Discussion of various approaches to ethical decision-making, application in contemporary settings. Also listed as JOUR 3300.
Prerequisite(s): MPAD 2501.
Lectures three hours a week.

MPAD 3501 [0.5 credit]
Internet and Big Data Law
The legal use of big data to create content and analyze information. Who owns data; privacy and security implications within a legal landscape fraught with legal concerns and policy challenges.
Prerequisite(s): JOUR 2501 or MPAD 2501 and third-year standing in the Bachelor of Media Production and Design or in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information.
Lectures three hours a week.

MPAD 3600 [0.5 credit]
Special Topic
Examination of a topic in storytelling and media not covered in depth in other courses.
Prerequisite(s): third-year standing in the Bachelor of Media Production and Design program.
Lecture three hours a week.

MPAD 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 2002.

MPAD 4000 [1.0 credit]
Capstone Project
Student groups develop a capstone project beginning with story development and planning, completion of a story design document including project description, research, key vistas and sketches or storyboards. Group presentations leading to final media project at the end of second term.
Includes: Experiential Learning Activity
Prerequisite(s): MPAD 2002, MPAD 3003, ITEC 2100, ITEC 2400 and fourth-year standing in the Bachelor of Media Production and Design program.

MPAD 4001 [0.5 credit]
Media Industries Now and Next
Changes in the media, the public’s relationship with the media and how journalists, news organizations and other media players respond. Practical issues and challenges in the professional life of an information producer.
Also listed as JOUR 4001.
Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.
Lectures and discussions three hours a week.

MPAD 4200 [0.5 credit]
Freelance Media Survival Skills
Preparation for freelancing to publications and production houses. Resumes, finding potential buyers, interviews, establishing and marketing an individual as a business, accounting and management and dealing with taxes and benefits. Pitching stories, ideas and services.
Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.
Lectures three hours a week.

MPAD 4300 [0.5 credit]
Special Topic
Students will choose a topic from a list of journalism options, to be announced each year.
Also listed as JOUR 4300.
Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

MPAD 4400 [0.5 credit]
Directed Studies
Directed study on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.
Prerequisite(s): Third year standing in Media Production and Design or permission from the School of Journalism and Communication.
Unscheduled.

MPAD 4500 [0.5 credit]
Special Topic
Examination of a topic in storytelling and media not covered in depth in other courses.
Also listed as JOUR 4500.
Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.
MPAD 4502 [0.5 credit]
Journalism and Conflict
For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.
Includes: Experiential Learning Activity
Also listed as JOUR 4502.
Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

MPAD 4503 [0.5 credit]
Journalism, Indigenous Peoples and Canada
Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous people in the era of reconciliation.
Includes: Experiential Learning Activity
Also listed as JOUR 4503.
Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

MPAD 4504 [0.5 credit]
The Media and International Development
A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda.
Includes: Experiential Learning Activity
Also listed as JOUR 4504.
Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.
Seminar three hours a week.

Medieval and Early Modern Studies (MEMS)

MEMS 2001 [0.5 credit]
Discovering the Medieval and Early Modern Past
An introduction to the Late Antique, Medieval and Early Modern worlds. Organized thematically, students will be introduced to interdisciplinary exploration of core topics.
Prerequisite(s): second-year standing.
Lectures and discussion groups three hours a week.

MEMS 3001 [0.5 credit]
Researching the Medieval and Early Modern Past
Continued interdisciplinary study of the Late Antique, Medieval and Early Modern worlds, with a focus on how to develop a deeper analysis of the core topics examined in MEMS 2001.
Prerequisite(s): MEMS 2001, or permission of the Program Coordinator.
Lectures three hours a week.

Migration and Diaspora Studies (MGDS)

MGDS 2000 [0.5 credit]
Global Migration and Transnationalism
Introduction to the social, cultural, economic and political implications of the movement of people with a multidisciplinary and multiscale approach to topics such as migration and immigration, diaspora identities, global culture, and transnationalism.
Prerequisite(s): second-year standing.
Lecture and discussion three hours a week.

MGDS 4900 [0.5 credit]
Special Topics in Migration and Diaspora Studies
Advanced topics in Migration and Diaspora Studies. Topics vary from term to term.
Prerequisite(s): Fourth-year standing or permission of the department.
Also offered at the graduate level, with different requirements, as MGDS 5900, for which additional credit is precluded.
Seminar three hours a week.

Music (MUSI)

MUSI 1000 [0.5 credit]
Introduction to the Study of Music
Introduction to issues and methods in the study of music. Development of writing and research skills; methodological approaches in all academic areas of music (historical musicology, ethnomusicology, popular music studies, music theory).
Prerequisite(s): first-year enrolment in the B.Mus., B.A. Music or B.A. Hons. Music program.
Lectures three hours a week.
MUSI 1001 [0.5 credit]
A History of Western Classical Music: Medieval to the Present
Western classical music from the medieval period to the present. Major historical periods (Medieval, Renaissance, Baroque, Classical, Romantic, Modern, Postmodern) are examined through representative music ranging from Gregorian chant to contemporary experimental trends. Lectures three hours a week.

MUSI 1002 [0.5 credit]
Issues in Popular Music
History of world popular music from the 19th century until the present. Topics may include the growth of the music industry, the impact of technology, stardom, world music, the role of the press, copyright, censorship, and sexuality. Lectures three hours a week.

MUSI 1003 [0.5 credit]
Understanding Music
Through musical examples drawn from diverse cultures and historical periods, students develop the ability to describe and analyze different aspects of music and deepen their appreciation of music as a cultural experience. No credit for students in B.Mus, B.A. Honours Music or B.A. Music. Lectures three hours a week.

MUSI 1107 [0.5 credit]
Elementary Materials of Music
An introduction to the rudiments of music and aural training. Successful completion of this course will fulfill the prerequisite for entry into MUSI 1700. Not available to B.Mus. students for credit. Lectures three hours a week.

MUSI 1700 [0.5 credit]
Theoretical Studies: Foundations of Music Theory
An introduction to the organizational principles underlying tonal music including intervals, scales, rhythm, metre, chords, counterpoint, form, cadences, and harmonic progressions. Prerequisite(s): permission of the Discipline. Lectures three hours a week.

MUSI 1701 [0.5 credit]
Theoretical Studies: Common Practice I
A study of the harmonic, melodic, rhythmic and formal structures of music of the common-practice period, with emphasis on the development of analytical and written skills of diatonic music. Prerequisite(s): MUSI 1700 or permission of the Discipline. Lectures three hours a week.

MUSI 1710 [0.5 credit]
Theoretical Studies: Aural Training I
A study of ear training, sight singing, and basic keyboard skills in relation to classical and popular musics, with emphasis on melodic, harmonic, and formal structures. Includes: Experiential Learning Activity Prerequisite(s): permission of the Discipline. Lectures three hours a week.

MUSI 1711 [0.5 credit]
Theoretical Studies: Applied Rhythmic Training I
A study of the rhythm of selected classical, popular, and world musics, with emphasis on applied performance, movement, and dictation. Includes: Experiential Learning Activity Prerequisite(s): permission of the Discipline. Lectures and workshops three hours a week.

MUSI 1900 [0.5 credit]
Performance I
Individual vocal or instrumental instruction in classical, traditional or popular idioms, in addition to individual performances and group class instruction. Includes: Experiential Learning Activity Prerequisite(s): audition and enrolment in the B.Mus. program; first-year standing or permission of the Discipline.

MUSI 1901 [0.5 credit]
Performance II
Individual vocal or instrumental instruction in classical, traditional or popular idioms, in addition to individual performances and group class instruction. Includes: Experiential Learning Activity Prerequisite(s): MUSI 1900 and enrolment in the B.Mus. program; first-year standing or permission of the Discipline.

MUSI 1912 [0.0 credit]
Choral Ensemble I
Participation in a choral ensemble, by arrangement with the Supervisor of Performance and Practical Studies. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns. Includes: Experiential Learning Activity Prerequisite(s): first-year standing in the B.Mus. program and permission of the Choral Director. Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1913 [0.0 credit]
Choral Ensemble II
A continuation of MUSI 1912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns. Includes: Experiential Learning Activity Prerequisite(s): first-year standing in the B.Mus. program and permission of the Choral Director. Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.
MUSI 1914 [0.0 credit]
Instrumental Ensemble I
Participation in an instrumental ensemble, by arrangement with the Supervisor of Performance and Practical Studies. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns. Includes: Experiential Learning Activity
Prerequisite(s): first-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1915 [0.0 credit]
Instrumental Ensemble II
A continuation of MUSI 1914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns. Includes: Experiential Learning Activity
Prerequisite(s): first-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2005 [0.5 credit]
Introduction to Jazz History
A survey of ragtime and jazz from their roots in pre-twentieth-century black music and white music to contemporary jazz idioms, including an examination of New Orleans jazz and Dixieland, swing, bebop, cool jazz, and free jazz.
Precludes additional credit for MUSI 2205.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2006 [0.5 credit]
Popular Musics before 1945
Selected aspects of the development of Anglo-American popular musics from their roots in the nineteenth century until the shifts and tensions which led to the advent of rock-and-roll and soul in the 1950s. Genres to be examined include blues, country, the sentimental ballad, Broadway music.
Precludes additional credit for MUSI 2203, MUSI 2206, MUSI 2208.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2007 [0.5 credit]
Popular Musics after 1945
Selected aspects of the development of Anglo-American and world popular musics from the advent of rock `n' roll and soul to the present. Early rock `n' roll, British rhythm `n' blues, Motown, West Coast music, punk, heavy metal, new wave, disco and country.
Precludes additional credit for MUSI 2207, MUSI 2208, MUSI 2209.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2008 [0.5 credit]
Music of the World's Peoples
A survey of musical traditions from various regions of the world, with an emphasis on the sociocultural contexts in which those musics are created and performed.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 2300.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2009 [0.5 credit]
Music of Asia
A comparative and analytical study of music in Asia, including India, China, Korea, Indonesia, Japan, and the Arabic world, through an examination of the music, musical instruments and theoretical systems.
Precludes additional credit for MUSI 2301.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2102 [0.5 credit]
Music in an Age of Spectacle, Commerce, and Colonization
The Baroque (1600-1750) was simultaneously shaped by absolutist regimes, competing religions, and an emerging public sphere. Music and culture from Monteverdi to Bach and Handel are investigated in the contexts of power, (geo)politics, religion, aesthetics, gender, socio-economics, dissemination, genre, and compositional practices.
Precludes additional credit for MUSI 2001.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2103 [0.5 credit]
Music in an Age of Order, Invention, and Revolution
Peace and revolution, faith and secularism, noble privilege and bourgeois commerce: fundamental contradictions underlying the creative work of Mozart, Haydn, and Beethoven. This course studies their compositions—operas, sacred works, symphonies, chamber music—within the political, social and cultural institutions of their times (ca. 1730-1815).
Precludes additional credit for MUSI 2002.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 2107 [0.5 credit]
Music in an Age of Tumult, Innovation, and Pluralism
A survey of European classical music of the 20th century. Idioms to be examined in the socio-political climate of the period include impressionism, expressionism, nationalism, neo-classicism, music of political commitment, contemporary opera and musical theatre, serialism, chance, textural composition, process music and neo-romanticism.
Precludes additional credit for MUSI 2105, 2106.
Prerequisite(s): second-year standing.
Lectures three hours a week.
MUSI 2601 [0.5 credit]
Orchestration and Instrumentation
Introduction to the fundamentals of effective and professional arranging. All aspects of the various instruments of the orchestra and matters having to do with the practicalities of orchestration for both small and large ensembles, and accepted professional standards of score presentation.
Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.
Lecture three hours a week.

MUSI 2602 [0.5 credit]
Composition I
Introduction to theories and technicalities involved in original creative writing through the preparation of individual assignments; based in the practice of recent music in the Western Classical tradition while allowing for the music of other Western styles and traditions to be addressed.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor. MUSI 2601 is recommended.
Lectures and workshops three hours a week.

MUSI 2605 [0.5 credit]
Choral Conducting
Introduction to the special stylistic features of choral music from the Renaissance to the present as well as to a variety of practical techniques (vocal production, gesture, conducting patterns, diction, etc.).
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program or permission of the instructor.
Lectures three hours a week.

MUSI 2608 [0.5 credit]
Computer Music I: Fundamentals of Electronic Music Production
Introduction to the theory and practice of electronic music creation, focusing on audio editing, synthesis, sampling, beat-making, signal processing, and sound design, using a variety of professional-grade software packages.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 2603 (no longer offered).
Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing, or permission of the instructor.
Lectures three hours a week, plus individual studio time.

MUSI 2609 [0.5 credit]
Computer Music II: Production, Collaboration and Performance
Computer-based music-making with an emphasis on collaborative approaches and performance-oriented tools and techniques. Introduces practices of remixing, live sound manipulation, preparation of original material for performance, and the use of hardware controllers in live performance and real-time musical collaboration using mobile technologies.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 2603 (no longer offered).
Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing, or permission of the instructor.
Lectures three hours a week, plus individual studio time.

MUSI 2700 [0.5 credit]
Theoretical Studies: Common Practice II
A continuation of the study of the harmonic, melodic, rhythmic and formal structures of music of the common-practice period and early twentieth century, with emphasis on chromaticism and the development of analytical and written skills.
Prerequisite(s): MUSI 1701 or permission of the instructor.
Lectures three hours a week.

MUSI 2701 [0.5 credit]
Theoretical Studies: Popular Music Practice
A study of the rhythmic, melodic, harmonic and formal structures of popular musics.
Prerequisite(s): MUSI 1700 or permission of the instructor.
Lectures three hours a week.

MUSI 2703 [0.5 credit]
Theoretical Studies VI: Practical Keyboard Skills
A practical study of rhythm, harmony and melody on the keyboard, with an emphasis on vocal and instrumental accompaniment and the development of improvisation skills in a variety of styles.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.
Labs three hours a week.

MUSI 2710 [0.5 credit]
Theoretical Studies: Aural Training II
A continuation of the study of ear training, sight singing, and basic keyboard skills in relation to classical and popular musics, with emphasis on melodic, harmonic, and formal structures.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1701, MUSI 1710.
Lectures three hours a week.
MUSI 2711 [0.5 credit]
Theoretical Studies: Applied Rhythmic Training II
A continuation of the study of the rhythm of common-practice and world musics, with emphasis on applied performance, movement, and dictation.
Includes: Experiential Learning Activity
Prerequisite(s): MUSI 1700, MUSI 1711.
Lectures and workshops three hours per week.

MUSI 2900 [0.5 credit]
Performance III
A continuation of MUSI 1901.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and MUSI 1901 with a C+ or higher, or permission of the Discipline.

MUSI 2901 [0.5 credit]
Performance IV
A continuation of MUSI 2900.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and MUSI 2900 with a B- or higher, or permission of the Discipline.

MUSI 2912 [0.0 credit]
Choral Ensemble III
A continuation of MUSI 1913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2913 [0.0 credit]
Choral Ensemble IV
A continuation of MUSI 2912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2914 [0.0 credit]
Instrumental Ensemble III
A continuation of MUSI 1915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week through either the fall or winter term, and participation in concerts.

MUSI 2915 [0.0 credit]
Instrumental Ensemble IV
A continuation of MUSI 2914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3103 [0.5 credit]
Music in Canada
An examination of various issues related to the study of music in Canada and by Canadians, and an examination of various genres of Canadian music, including art music, folk music, popular music, First Peoples music and music of various immigrant groups.
Precludes additional credit for MUSI 3100 (no longer offered).
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3104 [0.5 credit]
Popular Musics of Canada
A survey of popular musics in Canada from early colonial times to the present. The course will consider a wide range of musical styles and genres, along with related cultural and historical issues.
Precludes additional credit for MUSI 3100.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3106 [0.5 credit]
Popular Musics of the World
Popular musics of the world, including those of Africa, Asia, Central and Eastern Europe, Latin America, the Caribbean and Oceania. Special attention to the interaction between some world popular musics and the Western record industry.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3107 [0.5 credit]
Classical Indian Music
An introduction to the history and theory of classical Indian music including ragas, instruments, rhythm and improvisation.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing, or permission of the instructor.
Lectures three hours a week.
MUSI 3108 [0.5 credit]
Musics of the Middle East and North Africa
An examination of various musics, devotional traditions, and shifting cultural and art movements in the region, resulting from processes of globalization, political change, and technological innovation. Course sessions will include close and critical discussion of selected texts, audio-visual examples, and ethnomusicological documentary films. Prerequisite(s): second-year standing.
Seminars three hours a week.

MUSI 3200 [0.5 credit]
Special Topics
Courses focusing on one selected aspect of music, in the area of musicology, theory or composition. The course offerings change from year to year. Prerequisite(s): permission of the instructor.
Lectures and seminars three hours a week.

MUSI 3201 [0.5 credit]
Special Topics
Courses focusing on one selected aspect of music, in the area of musicology, theory or composition. The course offerings change from year to year. Prerequisite(s): permission of the instructor.
Lectures and seminars three hours a week.

MUSI 3205 [0.5 credit]
Specialized Studies
Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology, or composition. Course offerings change from year to year. Prerequisite(s): permission of the department, and a minimum GPA of 9.0 in Music. Individual instruction.

MUSI 3206 [0.5 credit]
Specialized Studies in Performance
Courses designed for Music Honours students who have acquired an extensive background through performance. Course offerings change from year to year. Prerequisite(s): permission of the Department, and a minimum CGPA of 9.0 in Music. Individual instruction.

MUSI 3301 [0.5 credit]
Music and Religion
An examination of the integral role music plays in religion and sacred ritual in different world cultures and religions. Through various case studies, the course broadly considers how sacred soundscapes shape people’s worldviews, identities, and experiences within and outside of their communities. Also listed as RELI 3301. Prerequisite(s): second-year standing.
Seminars three hours a week.

MUSI 3302 [0.5 credit]
Music and Gender I
The role of gender in the theory and practice of music in western and non-western cultures. Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3303 [0.5 credit]
Introduction to Music Therapy
Literature, practice and theory of music therapy. The use of music (improvisation, the voice, and reception) with various populations, including children and adults with special needs, people in long term care, people with neurological disorders, and in palliative care. Prerequisite(s): second-year standing or permission of the instructor.
Lectures three hours a week.

MUSI 3400 [0.5 credit]
A History of Opera before 1800
A survey of the development of opera from the beginnings to about 1800. The major monuments of Italian, French, German and English opera, by such composers as Monteverdi, Cavalli, Scarlatti, Purcell, Lully, Gluck, Rameau, Mozart and Haydn. Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3401 [0.5 credit]
A History of Opera from 1800 to 1945
A study of romantic and contemporary opera through an examination of selected works from Weber's Der Freischütz to Britten's Peter Grimes, including an investigation of national styles from Wagnerian music drama and Italian verismo to Russian realism and German expressionism. Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3402 [0.5 credit]
Film Music
The use of music in film, from the silent era to the present day, studying the techniques, styles and theory of film music through the examination of selected scenes. Also listed as FILM 3402. Prerequisite(s): second-year standing.
Lectures three hours a week, screening two hours a week.

MUSI 3403 [0.5 credit]
Music Industries
An introduction to the structure and history of the music industries. Also listed as COMS 3404. Prerequisite(s): second-year standing.
Lectures three hours a week.
MUSI 3405 [0.5 credit]
Musical Theatre
A survey of the styles, works, and artists of the musical theatre genre as well as the artistic elements that comprise musical theatre.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3406 [0.5 credit]
Instrumental Music: Music for Orchestra
Origins and development of orchestral music from its beginnings as an independent form in the 18th century to the present. Major symphonies and symphonic poems by composers like Haydn, Beethoven, Liszt, Brahms, Strauss, and Shostakovich. Brief examination of concerto and ballet music.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3407 [0.5 credit]
Instrumental Music: Chamber Music
History of chamber music and the cultural contexts within which it rose to prominence in Europe and North America in the 18th, 19th and 20th centuries. Genres by representative composers including the sonata, duos, trios, quartets, quintets, sextets, divertimenti, and works for small chamber orchestra.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3408 [0.5 credit]
Music in an Age of Passion, Imagination, and Iconoclasm
This course examines European art music of the nineteenth century, a revolutionary period of socio-political change when inspiration, subjectivity, radical idealism, expressive intensity, cultural nationalism, and the primacy of the individual creative voice were held up as primary aesthetic ideals.
Prerequisite(s): Third-year standing or permission of the instructor.
Seminars three hours a week.

MUSI 3409 [0.5 credit]
Music in an Age of Tumult, Innovation, and Pluralism
A study of western art music of the 20th century. Musical works, compositional techniques and performance practices are examined in the context of musical innovation, social change, political upheaval, and stylistic pluralism in a rapidly changing “modern” world.
Prerequisite(s): Third-year standing or permission of the instructor.
Seminars three hours a week.

MUSI 3402 [0.5 credit]
Composition II
Designed to enable students to develop abilities in the writing of original music. The study and appreciation of modern and contemporary styles and techniques are encouraged.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 3600 (no longer offered).
Prerequisite(s): MUSI 2601, MUSI 2602, and MUSI 2700, or permission of the instructor.
Lectures, workshops, and individual consultations three hours a week.

MUSI 3603 [0.5 credit]
Computer Music Techniques
An introduction to the techniques of sound synthesis primarily through practical experience at the digital synthesizer and computer. The basics of machine operations, software and computer applications to composition and synthesis. Enrolment is limited.
Includes: Experiential Learning Activity
Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing and either MUSI 2608 or MUSI 2609, or permission of the instructor.
Lectures three hours a week, plus individual studio time.

MUSI 3604 [0.5 credit]
Computer Music Projects
Examination of the various applications of digital equipment through the realization of original projects. Students may focus on studio composition, software development or analytic research. Appropriate compositional techniques and problem solving strategies are also discussed. Enrolment is limited.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing, and either MUSI 2603 (no longer offered) or MUSI 2608 or MUSI 2609, or permission of the instructor.
Lectures three hours a week, plus individual studio time.

MUSI 3605 [0.5 credit]
Instrumental Conducting
Introduction to the practice of conducting Instrumental music from the Classical era to the present as well as to a variety of practical techniques (rehearsal techniques, gesture, conducting patterns, score study, etc.).
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the B.Mus. program or permission of the instructor.

MUSI 3606 [0.5 credit]
Live Sound
Theoretical, practical and technical requirements of audio production in live settings are explored through lectures, demonstrations and workshops. Students develop skills in critical listening, pre-production planning, microphone selection and placement, signal routing, audio processing, monitoring and mixing for live event venues. Prior experience not required.
Includes: Experiential Learning Activity
Lectures and workshops three hours a week.
MUSI 3700 [0.5 credit]
Theoretical Studies: Seminar in Theory and Analysis
Selected topic in music theory. Topics will change yearly and may include: methods of music analysis, analysis of selected works, styles and structures of common practice or post common practice period, music, modal, tonal, or post-tonal counterpoint, history of music theory. Precludes additional credit for MUSI 3500.
Prerequisite(s): MUSI 2700 or permission of the instructor. Seminars three hours a week.

MUSI 3701 [0.5 credit]
Theoretical Studies: Jazz Styles and Structures
Techniques of arranging and composition for small and large ensembles will be studied through the examination of selected works drawn from the jazz repertoire. Works will be selected for stylistic and theoretical analysis, for exercises in aural recognition, and for arranging purposes. Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4203 (taken in 1994-95) or MUSI 4204 (taken in 1995-96). Prerequisite(s): MUSI 2701 or permission of the instructor. Workshops three hours a week.

MUSI 3702 [0.5 credit]
Introduction to Physics and Psychoacoustics of Music
Basic topics in physics and psychoacoustics, with an emphasis on those concepts that are most useful for music performance, analysis, composition, and musicology.
Prerequisite(s): second-year standing.
Lectures three hours a week.

MUSI 3703 [0.5 credit]
Improvisation in Theory and Practice
Selected forms of improvisation from diverse musical and cultural traditions. In addition to weekly seminar meetings, the class will engage in experiential forms of learning by actively improvising in a weekly performance-oriented seminar.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Discussion and performance seminars three hours a week.

MUSI 3900 [0.5 credit]
Performance V
A continuation of MUSI 2901.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in B. Mus. and MUSI 2901 with a B- or higher, or permission of the Discipline.

MUSI 3901 [0.5 credit]
Performance VI
A continuation of MUSI 3900.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the B.Mus. program and MUSI 3900 with a B- or higher, or permission of the Discipline.

MUSI 3912 [0.0 credit]
Choral Ensemble V
A continuation of MUSI 2913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3913 [0.0 credit]
Choral Ensemble VI
A continuation of MUSI 3912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3914 [0.0 credit]
Instrumental Ensemble V
A continuation of MUSI 2915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3915 [0.0 credit]
Instrumental Ensemble VI
A continuation of MUSI 3914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4000 [0.5 credit]
Performance VII
This is an optional performance course for B.Mus. students with high academic standing.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4900, MUSI 4901, MUSI 4907.
Prerequisite(s): fourth-year standing in B.Mus., MUSI 3901, A- or higher average in second- and third-year MUSI performance courses, and permission of the Music performance supervisor.
Individual instruction.
MUSI 4001 [0.5 credit]
Performance VIII
This is an optional performance course for B.Mus. students with high academic standing.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4002, MUSI 4003, MUSI 4900 (no longer offered), MUSI 4901, MUSI 4907.
Prerequisite(s): fourth-year standing in B.Mus. standing, MUSI 4000 with A- or higher, and permission of the Music performance supervisor.
Individual instruction.

MUSI 4002 [0.5 credit]
Graduating Demo Recording
A graduation recording of substantial duration arranged in consultation with the discipline. A proposal must be submitted one week before the last day for course changes. All recording costs must be borne by the student.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4001, MUSI 4003, MUSI 4900 (no longer offered), MUSI 4901 (no longer offered), MUSI 4907.
Prerequisite(s): fourth-year standing in B.Mus., MUSI 4000 with a grade of A- or higher, and permission of both the relevant associate music instructor and the music performance supervisor.
Individual instruction.

MUSI 4003 [0.5 credit]
Graduating Recital
Public recital arranged in consultation with the Supervisor of Performance and Practical Studies. An outline of the program must be submitted one week before the last day for course changes.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4001, MUSI 4002, MUSI 4900, MUSI 4901, MUSI 4907.
Prerequisite(s): fourth-year standing in B.Mus., MUSI 4000 with A- or higher, and permission of both the relevant associate music instructor and the music performance supervisor.
Individual instruction.

MUSI 4005 [0.5 credit]
Issues in Jazz Studies
An examination of key issues in the study of jazz including history/historiography, gender, genre, race, politics, identity and performance.
Prerequisite(s): MUSI 2005 and third-year standing.

MUSI 4006 [0.5 credit]
Issues in the Study of Popular Music
An introduction to current issues in the study of popular music. The course will be organized around a series of case studies.
Prerequisite(s): third-year standing, MUSI 1002, and at least one of MUSI 2005, 2006, or 2007.
Seminars three hours a week.

MUSI 4007 [0.5 credit]
The Composer in Context
Examination of the life and music of a selected composer, and the historical, social, cultural, and political factors that shaped the context within which they worked. Focus on history, biography, musical style and analysis.
Prerequisite(s): Fourth-year standing or permission of the instructor.
Lectures and seminars three hours a week.

MUSI 4102 [0.5 credit]
Theory and Methods in Ethnomusicology
Selected readings and discussion of major works in ethnomusicology, focusing on schools of thought and contemporary issues. Introduction to a variety of methods and strategies for ethnomusicological research, including field work, musical transcription and data analysis.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing, or permission of the instructor.
Seminars three hours a week.

MUSI 4103 [0.5 credit]
Ethnomusicology of Canadian Traditions
Issues of anthropological, sociological, and analytical significance are examined in the context of selected developments in folklore and ethnomusicological research on Canadian traditions.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as MUSI 5015, for which additional credit is precluded.
Seminars three hours a week.

MUSI 4104 [0.5 credit]
First Peoples Music in Canada
The context and significance of musical expressions of selected Canadian Indigenous groups and the contributions of individuals in the creation of music and meaning in First Peoples' communities.
Prerequisite(s): fourth-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as MUSI 5016, for which additional credit is precluded.
Seminars three hours a week.

MUSI 4105 [0.5 credit]
Issues and Processes in African Music
Surveying five different geographic regions of Africa, traditional and modern musical styles will be studied through the lens of the global, local and social issues surrounding them.
Prerequisite(s): third year standing, or permission of the instructor.
Lectures and seminars three hours a week.
MUSI 4200 [0.5 credit]
Special Topics
Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. The course offerings change from year to year.
Prerequisite(s): permission of the instructor.
Lectures and seminars three hours a week.

MUSI 4201 [0.5 credit]
Special Topics
Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. Course offerings change from year to year.
Prerequisite(s): permission of the instructor.
Lectures and seminars three hours a week.

MUSI 4205 [0.5 credit]
Specialized Studies
Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology, or composition. Course offerings change from year to year.
Prerequisite(s): permission of the department, and a minimum CGPA of 9.0 in Music.
Individual instruction.

MUSI 4206 [0.5 credit]
Specialized Studies in Performance
Courses designed for Music Honours students who have acquired an extensive background through performance. Course offerings change from year to year.
Prerequisite(s): permission of the department, and a minimum CGPA of 9.0 in Music.
Individual instruction.

MUSI 4209 [1.0 credit]
Specialized Studies
A course designed for Music Honours students who have acquired an extensive background through courses in theory, musicology or composition. Course offerings change from year to year.
Prerequisite(s): permission of the instructor.

MUSI 4303 [0.5 credit]
Music and Gender II
The relationship between the social and formal organization of music and the social and formal organization of sexual difference. The role of music in the social construction of gender; the role of gender in the determination of musical style and taste.
Precludes additional credit for MUSI 3303 or MUSI 4204 (taken in 1992-93).
Prerequisite(s): MUSI 3302 or permission of the instructor.
Seminars three hours a week.

MUSI 4304 [0.5 credit]
Music and Globalization
Examining music's role in the multifaceted and complex processes of globalization. Drawing on case studies of "world musics", this course explores how sound and music negotiate histories of post/colonialism, cultural and economic imperialism, and constructions of sameness and difference in "world music" contexts.
Prerequisite(s): fourth-year standing or permission of the instructor.
Also offered at the graduate level, with different requirements, as MUSI 5017, for which additional credit is precluded.
Seminars three hours a week.

MUSI 4306 [0.5 credit]
Music and Wellbeing in a Global Context
An examination of the ways in which music contributes to mental, social and physical wellbeing throughout the world, drawing from the fields of neuroscience, medical ethnomusicology, community music and cross-cultural studies.
Prerequisite(s): fourth-year standing or permission of the instructor.
Seminar three hours a week.

MUSI 4307 [0.5 credit]
Music in an Age of Power, Plague, and Courtly Love
The music of the "dark ages" is illuminated in the context of politics, spectacle, devotion, celebration, compositional process, manuscript culture, dissemination, musical notation, plague, and courtly love. "Medievalism" is examined as an aesthetic of the era (ca. 400-1400) and as reinterpreted in our modern world.
Prerequisite(s): Fourth-year standing or permission of the instructor.
Seminar three hours a week.

MUSI 4308 [0.5 credit]
Music in an Age of Devotion, Seduction, and Rebirth
This course brings to life the Renaissance (1400-1600), when music played a vital role in lavish courts, grand cathedrals, and vibrant cities. Madrigals, masses, and motets are examined in the context of politics, religion, gender, manuscript and print culture, rhetoric, art, and architecture.
Prerequisite(s): Fourth-year standing or permission of the instructor.
Seminar three hours a week.

MUSI 4602 [0.5 credit]
Composition III
A continuation of MUSI 3602, focusing on the development of creative individual approaches to music composition.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 3600 (no longer offered).
Prerequisite(s): MUSI 3602, or permission of the instructor.
Lectures, workshops, and individual consultations three hours a week.
MUSI 4700 [0.5 credit]
Theoretical Studies: Advanced Seminar in Theory and Analysis
A study of a selected topic in music theory. Topics will change yearly and may include: methods of music analysis; analysis of selected works; styles and structures of common practice or post common practice period music; modal, tonal, or post-tonal counterpoint; history of music theory.
Prerequisite(s): MUSI 2700 or permission of the instructor.
Seminars three hours a week.

MUSI 4701 [0.5 credit]
Introduction to Jazz Arranging
The art of arranging for small and large jazz ensembles is introduced through analysis of recordings by artists such as Duke Ellington, Fletcher Henderson, Count Basie, Rob McConnell, and Maria Schneider. Topics may include 2-, 3-, and 4-voice writing in a jazz idiom.
Prerequisite(s): MUSI 3701 or permission of the instructor.
Seminars three hours a week.

MUSI 4702 [0.5 credit]
Topics in Music Perception and Cognition
Selected advanced topics in the perception and cognition of music. Where appropriate, emphasis will be placed upon areas of overlap between psychological research and issues in aesthetics and cultural theory.
Prerequisite(s): third-year standing and MUSI 3702, or permission of the department.
Seminars three hours a week.

MUSI 4704 [0.5 credit]
Tonal Counterpoint
This course deals with the development of writing skills and knowledge of counterpoint as manifest in the Baroque era. Topics may include invention, canon, fugue, dance forms, the compositional language of J. S. Bach, and contrapuntal techniques in the late 18th century and beyond.
Prerequisite(s): MUSI 2700, or permission of the instructor.
Lectures and seminars three hours a week.

MUSI 4705 [0.5 credit]
Post-Tonal Theory and Analysis
Fundamentals of post-tonal music theory and analysis. Neo-tonal, atonal, twelve-tone and third-stream jazz. Students will develop the critical skills to understand these theoretical tools and be conversant with some of the aesthetic precepts associated with them.
Prerequisite(s): MUSI 2700 or permission of the instructor.
Lectures and seminars three hours a week.

MUSI 4800 [0.5 credit]
Practicum in Music
Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.
Includes: Experiential Learning Activity
Prerequisite(s): Honours Music registration with third- or fourth-year standing and a B+ or better average in Music courses; and permission of the Practica Supervisor.

MUSI 4801 [0.5 credit]
Practicum in Music
Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.
Includes: Experiential Learning Activity
Prerequisite(s): Honours Music registration with third- or fourth-year standing and a B+ or better average in Music courses; and permission of the Practica Supervisor.

MUSI 4906 [1.0 credit]
Honours Portfolio in Composition
The course requires the composition of an original work of substantial proportions, with an accompanying analytical paper. Application to the Discipline for permission to register must be received by September 1.
Includes: Experiential Learning Activity
Precludes additional credit for MUSI 4600.
Prerequisite(s): fourth-year standing, MUSI 3600 and permission of the Discipline.

MUSI 4908 [1.0 credit]
Honours Essay in Musicology
An Honours research essay of approximately 50 pages. A written outline of the project must be submitted to the Honours committee changes by the first day of classes.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing, A- or higher average, and permission of the Discipline.

MUSI 4909 [1.0 credit]
Portfolio in New Media
The course requires the creation of an original work (or works) of substantial proportions using applications in the electronic studios. A high level of independence and originality will be required. Requests to the Discipline for permission to register must be received by September 1.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the instructor.
MUSI 4912 [0.0 credit]
Choral Ensemble VII
A continuation of MUSI 3913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4913 [0.0 credit]
Choral Ensemble VIII
A continuation of MUSI 4912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Choral Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4914 [0.0 credit]
Instrumental Ensemble VII
A continuation of MUSI 3915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4915 [0.0 credit]
Instrumental Ensemble VIII
A continuation of MUSI 4914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Ensemble Director.
Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

Natural Science (NSCI)

Natural Science (NSCI) Courses
NSCI 1000 [0.5 credit]
Seminar in Science
Cross-disciplinary survey of current issues in science, providing new science students with an orientation to the study of science at the university level. Structured around seminars, oral and written presentations.
Prerequisite(s): Restricted to students in the first year of B.Sc. programs or B.A. Biology programs.
Lectures and tutorials three hours a week.

NSCI 4901 [1.0 credit]
Science Journalism Independent Project
Students will work with a health or life science research group and deliver an in-depth narrative on the relevant scientific research, lab dynamics and results.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Bachelor of Journalism and at least 3.5 credits completed in the concentration in Health Science, or permission of the School of Journalism and Communication.

Neuroscience (NEUR)

Neuroscience (NEUR) Courses
NEUR 1202 [0.5 credit]
Neuroscience of Mental Health and Psychiatric Disease
Clinical symptoms of psychiatric disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include depressive disorders, schizophrenia, autism, ADHD, anorexia, narcolepsy, substance abuse, and personality disorders.
Precludes additional credit for NEUR 1201 (no longer offered).
Lecture three hours a week.

NEUR 1203 [0.5 credit]
Neuroscience of Mental Health and Neurological Disease
Clinical symptoms of neurological disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include stroke, multiple sclerosis, migraine, seizure disorder, Parkinson's disease, ALS, chronic pain, Alzheimer's disease and concussion.
Lectures three hours a week.

NEUR 2001 [0.5 credit]
Introduction to Research Methods in Neuroscience
A general introduction to research process within neuroscience. Topics covered include research strategies, methods, and techniques; basic descriptive statistics; research communication; and responsible scientific conduct.
Prerequisite(s): second-year standing.
Lecture three hours a week.

NEUR 2002 [0.5 credit]
Introduction to Statistics in Neuroscience
A general introduction to statistical techniques employed within contemporary neuroscience. Topics covered include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square).
Prerequisite(s): PSYC 2001 or NEUR 2001.
Lectures three hours a week, online labs/tutorials.
NEUR 2003 [0.5 credit]
Introduction to Techniques in Neuroscience
Introduction to common techniques used in neuroscience research. Brain imaging, animal behaviour, electrophysiology, immunohistochemistry and microscopy, genomics, transgenics, cell culture, and DSM-IV-based clinical assessment.
Prerequisite(s): one of PSYC 1001, NEUR 1201, NEUR 1202 or NEUR 1203.
Lectures three hours a week.

NEUR 2004 [0.5 credit]
Fundamentals of Scientific Writing in Neuroscience
Introduction to various forms of scientific writing appropriate to neuroscience, with a focus in fundamental skills in scientific writing.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in a Neuroscience program and one of NEUR 1201, NEUR 1202 or NEUR 1203.
Lectures and workshops three hours a week.

NEUR 2201 [0.5 credit]
Cellular and Molecular Neuroscience
Core principles in cellular and molecular neuroscience, including signal transmission along and between neurons, ion channels and transporters, intracellular signaling pathways, and regulation of gene expression.
Precludes additional credit for PSYC 3200 (no longer offered) and NEUR 3200 (no longer offered). 
Prerequisite(s): Either NEUR 1201 and NEUR 1203, or NEUR 1202 and NEUR 1203, or both BIOL 1103 and BIOL 1104.
Lectures three hours a week, online labs.

NEUR 2202 [0.5 credit]
Neurodevelopment and Plasticity
Core principles in nervous system development from embryogenesis to plasticity in the adult brain. Topics include neural induction, neurogenesis, apoptosis, neuronal migration and axon growth, synaptogenesis and synaptic pruning both under normal conditions and in psychopathology.
Precludes additional credit for PSYC 3200 (no longer offered) and NEUR 3200 (no longer offered). 
Prerequisite(s): NEUR2201.
Lectures three hours a week, online labs.

NEUR 2801 [0.5 credit]
Neuroscience and Creativity
Abnormal brain function associated with mental illness or substance abuse has been commonly depicted in or been the inspiration for important cultural works including movies, music, paintings and literature. The neurobiological basis of creativity in individuals with and without mental illness.
Prerequisite(s): one of PSYC 1001, NEUR 1201, NEUR 1202 or NEUR 1203.
Lectures and seminars three hours a week.

NEUR 3001 [0.5 credit]
Data Analysis in Neuroscience I
Introducing various software for analyzing neuroscience data. Dealing with real data, drawing graphs, application of descriptive and inferential statistics through the general linear model, assumptions of parametric tests, robust statistics, confidence intervals, correlations, use of appropriate statistical methods and interpretation of results.
Includes: Experiential Learning Activity
Prerequisite(s): PSYC 2001 and PSYC 2002, or NEUR 2001 and NEUR 2002.
Lectures three hours a week, online labs/workshops.

NEUR 3002 [0.5 credit]
Data Analysis in Neuroscience II
Use of software for analyzing neuroscience data. Statistical techniques typically include nonparametric tests, t tests, and various forms of both ANOVA and regression including robust statistical tests, with a focus on the practical application of appropriate statistical methods and interpretation of results.
Includes: Experiential Learning Activity
Prerequisite(s): NEUR 3001.
Lectures three hours a week, online labs/workshops.

NEUR 3203 [0.5 credit]
Field Course in Animal Behaviour
Offered in the Department of Biology as BIOL 3605. Only those modules dealing with animal behaviour topics may be offered for Neuroscience credit.
Includes: Experiential Learning Activity
Also listed as BIOL 3605.
Precludes additional credit for PSYC 3203.
Prerequisite(s): permission of the department.

NEUR 3204 [0.5 credit]
Neuropharmacology
Overview of chemical neurotransmission and key neurotransmitter systems. A description of licit and illicit drugs covering topics that range from historical perspectives to pharmacology to mechanisms of action in the brain. Discussion of neurochemical basis of psychiatric diseases including anxiety, depression and schizophrenia.
Precludes additional credit for PSYC 3204 (no longer offered).
Prerequisite(s): NEUR 2200 or NEUR 2201.
Lectures and seminars three hours a week.
NEUR 3206 [0.5 credit]
Sensory and Motor Neuroscience
Exploration of major topics in sensory processing and motor control, with a focus on underlying mechanisms and neurobiological principles. Topics include all sensory systems (such as vision, somatosensation and audition) plus motor system components including lower and upper motor neurons, basal ganglia, and cerebellum.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 3200 (no longer offered), NEUR 3200 (no longer offered), PSYC 3202 (no longer offered) and NEUR 3202 (no longer offered).
Prerequisite(s): NEUR 1201 or both NEUR 1202 and NEUR 1203, and either NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week, laboratory three hours a week.

NEUR 3207 [0.5 credit]
Systems Neuroscience
Neural systems underlying complex behaviours including emotion, motivation, and sleep, and the role of association cortices in brain function.
Includes: Experiential Learning Activity
Precludes additional credit for NEUR 3200 (no longer offered) and PSYC 3200 (no longer offered).
Prerequisite(s): NEUR 3206.
Lectures three hours a week, laboratory three hours a week.

NEUR 3301 [0.5 credit]
Genetics of Mental Health
Most common mental health diseases have a genetic component. By focusing on specific diseases, this course will discuss how disease susceptibility genes are identified, and describe the genetic, genomic and epigenetic mechanisms through which DNA alterations can predispose to disease.
Prerequisite(s): BIOL 2104 or BIOL 2107, and NEUR 2200 or NEUR 2201.
Lectures three hours a week.

NEUR 3303 [0.5 credit]
The Neurosciences of Consciousness
Consciousness remains one of the least understood aspects of the nervous system. This course explores neural mechanisms underlying consciousness, changes in consciousness associated with sleep, coma, vegetative states, drugs, and other stimuli, and considers the evolutionary basis of consciousness, and its relationship with awareness.
Prerequisite(s): NEUR 2200 or NEUR 2202.
Lectures three hours a week.

NEUR 3304 [0.5 credit]
Hormones and Behaviour
The effects of hormones throughout life at all levels of the nervous system. The role of hormones in mediating behaviours that are both basic (feeding, reproduction and social interactions) and complex (motivation, emotion, learning and memory).
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3401 [0.5 credit]
Environmental Toxins and Mental Health
Exposure to environmental toxins from the air, water or food can interfere with neuronal function, alter neurodevelopment, and damage the brain. This course will explore associations between toxins and diseases such as Parkinson's disease, multiple sclerosis and depression, focusing on mechanisms underlying development of pathology.
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3402 [0.5 credit]
Impact of Lifestyle and Social Interactions on Mental Health
Healthy lifestyle choices and positive social interactions can reduce the incidence of pathological conditions such as depression, obesity, cardiovascular disease and impaired immunity. This course focuses on psychosocial and neurobiological mechanisms that underlie the relationship between lifestyle, social interactions and health.
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3403 [0.5 credit]
Stress and Mental Health
Stressful events can have profound repercussions on physical and psychological well-being. This course examines the psychosocial and biological processes by which stressors predispose to both physical (immune-related disorders, diabetes, heart disease) and psychological (acute stress disorder, posttraumatic stress disorder, depression, anxiety) pathologies.
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.
NEUR 3501 [0.5 credit]
Neurodegeneration and Aging
Perspectives on aging and neurodegeneration from psychosocial and neuroscience points of view. How factors including TBI, stroke and alcohol make the brain vulnerable and contribute to neurodegeneration. Clinical overview of Alzheimer’s, Parkinson’s, Huntington’s and ALS and the underlying pathology that differentiates these diseases.
Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3502 [0.5 credit]
Neurodevelopmental Determinants of Mental Health
Development of the human brain, the generation and differentiation of the various cell types, and the formation of the vast network of neural connections. How neurodevelopmental dysregulation can result in pathologies including dyslexia, ADHD, schizophrenia and autism.
Prerequisite(s): NEUR 2200, or both NEUR 2201 and NEUR 2202.
Lectures three hours a week.

NEUR 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

NEUR 4001 [0.5 credit]
Special Topics in Neuroscience
Each section of NEUR 4001 deals with a different topic. Topics change yearly. Students may register in more than one section of NEUR 4001 but can register in each section only once.
Prerequisite(s): NEUR 3200, or NEUR 3204 and NEUR 3206 and NEUR 3207, or permission of the Department.
Lectures three hours a week.

NEUR 4002 [0.5 credit]
Systematic Reviews and Meta-Analyses
Introduction to the methods used in conducting systematic reviews and meta-analyses. Topics include: conducting literature searches, extracting relevant literature, assessing quality of studies, synthesizing findings across studies, and the statistical methods used to carry out a meta-analysis.
Includes: Experiential Learning Activity
Prerequisite(s): NEUR 3002 or HLTH 3201 or BIOL 3604 or permission of instructor.
Lecture three hours a week.

NEUR 4200 [0.5 credit]
Seminar on Current Advances in Neuroscience
Headline research in neuroscience. Topics may include technical and conceptual advances, ethical issues, medical improvement, and social impacts of neuroscience research.
Precludes additional credit for PSYC 4200 (no longer offered).
Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.
Seminar three hours a week.

NEUR 4202 [0.5 credit]
Seminar on Current Research in Neuroscience and Psychiatric Disease
Recent research in clinical neuroscience including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include depressive disorders, schizophrenia, autism, ADHD, anorexia, narcolepsy, substance abuse, and personality disorders.
Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.
Seminar three hours a week.

NEUR 4203 [0.5 credit]
Seminar on Current Research in Neuroscience and Clinical Neurology
Recent research in neurological disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include stroke, multiple sclerosis, migraine, seizure disorder, Parkinson’s disease, ALS, chronic pain, Alzheimer’s disease and concussion.
Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.
Seminars three hours a week.

NEUR 4301 [0.5 credit]
Neurobiology of Energy Homeostasis
Focus on neuroanatomical and molecular mechanisms underlying how mammals adapt to changes and challenges in the environment. Topics include regulation of feeding, energy expenditure, water balance, and temperature regulation.
Prerequisite(s): NEUR 3304.
Lectures three hours a week.

NEUR 4302 [0.5 credit]
Sex and the Brain
Neurobiological processes behind reproductive behaviours in various animal species including humans. Evaluation of data concerning neurobiological differences between sexes, biological determinants of sexual orientation, and relating to neurobiology of sex disorders. Precludes additional credit for NEUR 3302 (no longer offered).
Prerequisite(s): NEUR 3304.
Lectures three hours a week.
NEUR 4303 [0.5 credit]
Indigenous Health & Mental Health
The physical and mental health issues of Indigenous people in the context of the cultural, environmental, developmental and biological factors that contribute to comorbid conditions and greater risk and resilience. Prerequisite(s): 3rd year standing or above. Lectures three hours a week.

NEUR 4305 [0.5 credit]
Immune-Brain Interactions
Communication between the brain and the immune system; messengers mediating the interaction. How disturbances of immune-brain signaling can lead to disease (multiple sclerosis, Parkinson’s) and to changes in mood and cognition. Precludes additional credit for NEUR 3305 (no longer offered). Prerequisite(s): NEUR 3200 or NEUR 3207. Lectures three hours a week.

NEUR 4306 [0.5 credit]
The Neural Basis of Addiction
How substance and behavioural addictions impact neural function to ultimately lead to the neuropathology of addiction in vulnerable populations. Contemporary neurobiological theories of addiction will also be addressed. Precludes additional credit for NEUR 3306. Prerequisite(s): NEUR 3204. Lecture three hours a week.

NEUR 4600 [0.5 credit]
Advanced Lab in Neuroanatomy
Advanced experiential learning in neuroanatomy, histology and microscopy. Includes: Experiential Learning Activity Prerequisite(s): NEUR 3200 or both NEUR 3206 and NEUR 3207, fourth-year standing in a Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.

NEUR 4801 [0.5 credit]
Neuroethics
Ethical issues of key importance to current neurobiological research. Topics may include the use of animals in research, stem cell research, genetic diagnosis and gene therapy, neuroimaging, and the effect on identity and autonomy of manipulations such as psychopharmaceuticals and psychosurgery. Prerequisite(s): NEUR 3200 or both NEUR 3206 and NEUR 3207. Lectures and seminars three hours a week.

NEUR 4900 [0.5 credit]
Independent Study
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing and permission of the Department.

NEUR 4905 [1.0 credit]
Honours Workshop
The course will focus on active learning in areas that include written and oral communication, evaluation and interpretation of results, statistics and data management, emphasizing transferable skills that will be most appropriate for non-research career paths. Includes: Experiential Learning Activity Precludes additional credit for NEUR 4907 and NEUR 4908. Prerequisite(s): fourth-year standing in an Honours Neuroscience program and permission of the Department. Lectures and seminars three hours a week, and colloquia three hours a week.

NEUR 4906 [1.0 credit]
Translational Approach to Indigenous Community Wellness
This course involves co-developing an Indigenous community-led process or product that addresses a current and specific mental health issue. Involves working in interdisciplinary groups with a community partner. Includes: Experiential Learning Activity Prerequisite(s): Fourth-year standing with a minimum CGPA of 9.0 and a grade of A- or higher in one of NEUR 3401, NEUR 3402 or NEUR 3403 and permission of instructor. Seminars or workshops three hours a week. A field trip to the partner community is typically required.

NEUR 4907 [1.0 credit]
Honours Essay and Research Proposal
An independent essay based critical review and research proposal on a topic in neuroscience, using library resources, under the direct supervision of a Faculty advisor. Evaluation is based on a written report. Includes: Experiential Learning Activity Precludes additional credit for NEUR 4905 and NEUR 4908. Prerequisite(s): NEUR 3200, or both NEUR 3206 and NEUR 3207, and fourth-year standing in an Honours Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department. Seminar three hours a week and colloquia three hours a week.
NEUR 4908 [1.0 credit]
Honours Research Thesis
An independent research project undertaken under the
direct supervision of a faculty advisor typically from the
Department of Neuroscience. Evaluation is based on a
written report and poster.
Includes: Experiential Learning Activity
Precludes additional credit for NEUR 4905 and
NEUR 4907.
Prerequisite(s): NEUR 3200, or both NEUR 3206 and
NEUR 3207, and fourth-year standing in an Honours
Neuroscience program, a minimum CGPA of 9.0 and
permission of the Department.
Colloquia three hours a week.

PIPS 3001 [0.5 credit]
Experimental Uses of Technology in Performance
Innovative uses of analogue and digital technologies in
performance contexts. Issues in the design of lighting,
audio, screen and interactive technologies related to public
spaces, movement and performance.
Includes: Experiential Learning Activity
Prerequisite(s): Third-year standing or permission of the
department.
Workshop three hours per week.

PIPS 4200 [0.5 credit]
Special Topics in Performance and the Public Sphere
Course focuses on one selected aspect of performance in
the public sphere. Course offerings change from year to
year.
Prerequisite(s): Fourth-year standing or permission of the
department.
Seminar three hours per week.

PIPS 4800 [0.5 credit]
Practicum in Performance Studies
The undergraduate practicum provides students an
experiential-learning opportunity to apply their knowledge
in Carleton Dominion-Chalmers Centre and other
organizations and venues in the national capital region.
Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year standing or permission of the
department.
Workshop three hours per week.

Philosophy (PHIL) Courses

PHIL 1000 [0.5 credit]
Introductory Philosophy: Fields, Figures and
Problems
What is metaphysics? Who was Socrates? What is
Freedom? This introduction sketches many branches of
philosophy and the important problems associated with
each. It introduces great philosophers, present and past,
and traces enduring philosophical themes.
Precludes additional credit for FYSM 1208 (no longer
offered), FYSM 1211, PHIL 1100. This course is not
suitable for students with previous formal study of
philosophy.

PHIL 1100 [1.0 credit]
Looking at Philosophy
Introduction to philosophy: the nature of logical thinking;
the existence of God; the objectivity of values; the
meaning of life; free will, determinism and responsibility;
the relation between mind and body; immortality; the
possibility of knowledge. This course is not intended for
Majors.
Precludes additional credit for FYSM 1208 (no longer
offered), FYSM 1211 and PHIL 1000.
Lectures three hours a week.
PHIL 1200 [0.5 credit]
The Meaning of Life
An introduction to concerns expressed by the perennial philosophical question, "What is the meaning of life?" Students will be familiarized with the major philosophical approaches to life's meaning through a consideration of various contemporary and late modern works in the philosophy of life.
Lectures three hours a week.

PHIL 1301 [0.5 credit]
Mind, World, and Knowledge
Introduction to a variety of philosophical works, including contemporary, on such topics as: the nature of being, the mental, the external, consciousness, perception, experience, meaning, truth, the nature of knowledge, scientific understanding, and how language and thought represent the world.
Precludes additional credit for PHIL 1006 (no longer offered), PHIL 1501 (no longer offered).
Lectures three hours per week.

PHIL 1500 [1.0 credit]
Contemporary Moral, Social and Religious Issues
Moral theories, atheism or theism, feminism, and free will. Moral arguments concerning abortion, affirmative action, racism, human rights, children's rights, world hunger, capital punishment, euthanasia, censorship, pornography, legal paternalism, animal rights and environmental protection.
Precludes additional credit for FYSM 1209 and PHIL 1550.
Lectures three hours a week.

PHIL 1610 [0.5 credit]
Great Philosophical Ideas, Part 1
Major figures and developments in philosophy from the early Greeks to the year 1400. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments.
Precludes additional credit for FYSM 1300, PHIL 1600.
Lectures three hours a week.

PHIL 1620 [0.5 credit]
Great Philosophical Ideas, Part 2
Major figures and developments in philosophy after the year 1400. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments.
Precludes additional credit for FYSM 1300, PHIL 1600.
Lectures three hours a week.

PHIL 1700 [0.5 credit]
Philosophy of Love and Sex
A survey of philosophical classics, on themes of romantic love, self-love, altruistic love, sexuality, eroticism and the passion/reason dichotomy, from Plato's Symposium to Foucault's History of Sexuality; and an examination of related contemporary issues in light of these perspectives.
Lectures three hours a week.

PHIL 2001 [0.5 credit]
Introduction to Logic
An introduction to the techniques and philosophical implications of formal logic with emphasis on translation of expressions into symbolic form, testing for logical correctness, the formulation and application of rules of inference, and the relation between logic and language.
Open to first-year students.
Lectures three hours a week. Tutorials may be offered in selected terms.

PHIL 2003 [0.5 credit]
Critical Thinking
Assessment of reasoning and the development of cogent patterns of thinking. Reference to formal logic is minimal. Practice in criticizing examples of reasoning and in formulating one's own reasons correctly and clearly. Open to first-year students.
Lectures three hours a week.

PHIL 2005 [1.0 credit]
Ancient Philosophy: The Search for Wisdom
An exploration of ancient philosophy as a search for wisdom and happiness from its Presocratic beginnings in Greece to its development in the Hellenistic world and Imperial Rome. Emphasis on philosophy as a contemplative activity and as a way of life.
Also listed as CLCV 2105.
Prerequisite(s): 0.5 credit in PHIL, or second-year standing.
Lectures three hours a week.
PHIL 2010 [0.5 credit]
Issues in Theoretical Philosophy
Issues drawn from epistemology, metaphysics, philosophy of mind, philosophy of language, and related fields will be examined through careful study of significant philosophical texts after 1900, along with some ensuing debates. Prerequisite(s): enrolment in Honours or Combined Honours Philosophy programs, or in philosophy, Ethics, and Public Affairs, or permission of the Department. Lectures and discussion three hours a week.

PHIL 2201 [0.5 credit]
Introduction to Marxist Philosophy
The evolution of Marx's social and political views in the setting of 18th- and 19th-century anarchism, liberalism and conservatism. Themes of humanism, freedom, rights, the state, democracy, alienation, and inequality, primarily as they develop into the theory of historical materialism. Precludes additional credit for PHIL 2200. Prerequisite(s): 0.5 credit in philosophy or permission of the Department. Lectures three hours a week.

PHIL 2301 [0.5 credit]
Introduction to the Philosophy of Science
Philosophical issues arising out of the attempt to understand the world scientifically. Topics may include: scientific methodology, revolution, observation, explanation, causation, induction, reduction, the difference between natural and social scientific understanding, realism, instrumentalism, constructivism. Prerequisite(s): a course in philosophy or second-year standing.

PHIL 2306 [0.5 credit]
Philosophy and Feminism
A study of philosophical issues arising from feminism. The course includes discussions of the historical roots of feminism, the role of reason and emotion, key concepts such as oppression, sexism, equality and difference, feminism and philosophies of race and of disability, and selected moral/political issues. Prerequisite(s): 0.5 credit in philosophy or second-year standing. Lectures three hours a week.
PHIL 2307 [0.5 credit]
Gender and Philosophy
Topics may include gender and sex in the history of philosophy, intersections between the politics and theories of gender, sexuality, and race, the place of the body in philosophical theory, the influence of gender and sex on science/social science, and queer/trans issues and politics.
Prerequisite(s): a course in philosophy or second-year standing.
Lectures three hours a week.

PHIL 2320 [0.5 credit]
Children, Literature, and Philosophy
An exploration of issues at the nexus of philosophy, children’s literature, and childhood studies. Topics may include an examination of children’s books and young adult literature through a philosophical lens, as well as a critical examination of the “philosophy with children” movement.
Includes: Experiential Learning Activity
Prerequisite(s): 0.5 credit in philosophy or second-year standing in a philosophy program, or permission of the department.
Lectures three hours a week.

PHIL 2330 [0.5 credit]
Happiness, Well-being, and the Good Life
A philosophical exploration of what makes a good human life. Topics may include the role of happiness, well-being, and flourishing in a good life, the relations between these aspects, and the extent to which they depend on luck and social considerations.
Lectures three hours a week.

PHIL 2340 [0.5 credit]
Philosophy and Popular Culture
Philosophy is all around us, it permeates culture. This course explores philosophical questions through the lens of popular culture. The material used may include films, shows, music, novels, video games, advertising, comic books, and so on.
Lectures three hours a week.

PHIL 2380 [0.5 credit]
Introduction to Environmental Ethics
Major questions in environmental ethics: How should human beings view their relationship to the rest of nature? Is responsible stewardship of the environment compatible with current technology? Must future generations be protected? Do animals, other life forms, endangered species, ecosystems and/or the biosphere have value/rights?
Precludes additional credit for PHIL 1804.
Lectures three hours a week.

PHIL 2405 [0.5 credit]
Philosophy of the Paranormal
Examination of claims, concepts, theories and methods in parapsychology. Their scientific character and the relation of paranormal phenomena to philosophical issues such as survival of death, human nature, time, space, causality and perception.
Prerequisite(s): 0.5 credit in philosophy or permission of the Department.
Lectures three hours a week.

PHIL 2408 [0.5 credit]
Bioethics
Ethical and political issues in medicine, public health, biotechnology, and the life sciences. Topics may include reproductive ethics, research on human subjects, animal research and treatment, justice and health care, physician-patient relationships, death and the end of life, and genetic engineering.
Precludes additional credit for PHIL 3408.
Prerequisite(s): a course in philosophy or second-year standing.
Lectures three hours a week. Tutorials may be offered in selected terms.

PHIL 2501 [0.5 credit]
Introduction to Philosophy of Mind
An introduction to major philosophical issues concerning human cognition. Topics may include: the relation of mind to body, knowledge of other minds, the relation of mental states to personhood and personal identity, mental illness, consciousness, intentionality, action, mental realism.
Precludes additional credit for PHIL 2502.
Prerequisite(s): a course in philosophy or second-year standing.

PHIL 2504 [0.5 credit]
Language and Communication
Some of the central topics in the study of language and communication as pursued by linguists and philosophers. The nature of meaning; the connections between language, communication and cognition; language as a social activity.
Also listed as COMS 2504, LING 2504.
Precludes additional credit for COMM 2800, LALS 2504, LALS 2800 and PHIL 2800.
Prerequisite(s): second-year standing.
Lectures three hours a week.

PHIL 2520 [0.5 credit]
Introduction to Philosophical Logic
An introduction to features of rational thinking activity, its expression, and its relation to the world, focusing on such topics as predication, truth, negation, necessity, entailment, logical form, or quantification.
Prerequisite(s): a course in philosophy or second-year standing.
Lectures three hours a week.
PHIL 2540 [0.5 credit]
Personal Identity and the Self
Philosophical perspectives on personal identity, the self, and the underlying issue of the relationship of the mind to the body. Both philosophical and psychological concepts of identity are discussed, as are related issues such as memory, introspection, and self-knowledge. Precludes additional credit for PHIL 2502. Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.

PHIL 2550 [0.5 credit]
Moral Psychology
An examination of psychological underpinnings of morality, focusing on studies at the intersection of philosophy, psychiatry, and psychology. Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.

PHIL 2601 [0.5 credit]
Philosophy of Religion
A study of philosophical issues arising from religion. Topics may include: arguments for and against the existence of God, religious experience, death and the afterlife, miracles, God and evil, the relationship between religion and science, and the relationship between religion and ethics. Also listed as RELI 2738. Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.

PHIL 2700 [0.5 credit]
Asian Philosophy
An examination of South Asian and East Asian philosophical texts, from the period of the Upanishads and early Buddhism in India to modern philosophical movements. Historical sources may include Hindu, Buddhist, Jain, Confucian or Taoist texts, with a focus on metaphysical, epistemological or ethical themes. Prerequisite(s): second-year standing. Lectures three hours a week. May be offered as an online course in selected terms.

PHIL 2807 [0.5 credit]
Philosophy of Art
Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences. Also listed as ARTH 2807. Lecture three hours a week.

PHIL 2901 [0.5 credit]
Truth and Propaganda
Ancient and modern techniques of persuasion from analytical, ethical and jurisprudential perspectives. Objectivity and bias, advertising and public relations ethics, the viability of democracy in the light of pressures on and within the modern mass media. Precludes additional credit for PHIL 2900 (no longer offered). Prerequisite(s): 0.5 credit in PHIL or second-year standing. Lectures three hours per week.

PHIL 3000 [0.5 credit]
Topics in Ancient Philosophy
A study of philosophers, texts, problems and issues in ancient philosophy, generally with a focus on Plato and Aristotle. Also listed as CLCV 3011. Prerequisite(s): 0.5 credit in philosophy and second-year standing, or permission of the department. Lectures three hours a week.

PHIL 3001 [0.5 credit]
Early Greek Philosophy
A study of the pre-Socratic Greek philosophers and of the Sophists and Socrates. Also listed as CLCV 3001. Prerequisite(s): CLCV 2105 or PHIL 2005 or permission of the Department. Lectures three hours a week.

PHIL 3002 [0.5 credit]
17th Century Philosophy
European philosophy of the 17 th century. Representative works of writers such as Francis Bacon, Descartes, Spinoza, Leibniz, and Locke. Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department. Lectures three hours a week.

PHIL 3003 [0.5 credit]
18th Century Philosophy
European philosophy of the 18 th century. Representative works of writers such as Berkeley, Hume, and Kant. Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department. Lectures three hours a week.

PHIL 3005 [0.5 credit]
19th Century Philosophy
European philosophy in the 19 th century. May include Hegel, Marx, Schopenhauer, Kierkegaard, Nietzsche, Mill. Precludes additional credit for PHIL 3007. Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the Department. Lectures three hours a week.
PHIL 3009 [0.5 credit]
Topics in European Philosophy
A study of philosophers, texts, problems and issues in any period of European philosophy.
Prerequisite(s): 0.5 credit in philosophy or second-year standing.
Lectures three hours a week.

PHIL 3010 [0.5 credit]
Global Philosophical Traditions
A study of philosophers, texts, and doctrines beyond the Western tradition. Traditions covered will vary but may include Asian, African, Muslim or Indigenous philosophy, possibly with critical comparison to Western counterparts.
Precludes additional credit for PHIL 2004.
Prerequisite(s): 0.5 credit in philosophy or second-year standing.
Lectures three hours a week.

PHIL 3102 [0.5 credit]
Philosophy of Law: The Logic of Law
Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession.
Also listed as LAWS 3102.
Prerequisite(s): 0.5 credit in philosophy or permission of the Department.
Lectures three hours a week.

PHIL 3104 [0.5 credit]
The Roots of Analytic Philosophy
In the context of the work of such writers as Frege and Bradley, a discussion of early philosophical works of Russell, Moore and Wittgenstein. In addition some early representatives of positivism and pragmatism may be examined.
Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department.
Lectures and seminar three hours a week.

PHIL 3140 [0.5 credit]
Epistemology
Fundamental issues concerning the relation between evidence, rationality, and knowledge. Topics may include: skepticism, the nature of belief, the structure of justification, the relative contributions of reason and sense experience to knowledge, innate knowledge, the problem of induction, and the knowledge of other minds.
Precludes additional credit for PHIL 2300.
Prerequisite(s): 0.5 credit in philosophy and third-year standing in a philosophy program or permission of the department.

PHIL 3150 [0.5 credit]
Metaphysics
Philosophical issues concerning the fundamental nature of being. Topics may include: time and temporality, space, substance, universals/particulars, identity, causation, freedom/determinism, the nature of norms.
Precludes additional credit for PHIL 2302.
Prerequisite(s): 0.5 credit in philosophy and third-year standing in a philosophy program, or permission of the department.

PHIL 3301 [0.5 credit]
Issues in the Philosophy of Science
Selected topic(s) in the philosophy of science, such as its relationship to values, or in the philosophy of a particular science (such as philosophy of mathematics, philosophy of physics, philosophy of biology, and philosophy of the social sciences).
Prerequisite(s): PHIL 2301 or permission of the department.
Lectures three hours a week.

PHIL 3306 [0.5 credit]
Symbolic Logic
A review of the basic techniques of propositional and predicate logic. Natural deduction and consistency trees. Soundness and completeness. Alternative semantics. Extensions to basic logic: identity, modal logic with possible world semantics, three valued systems, deontic logic.
Precludes additional credit for PHIL 3305.
Prerequisite(s): PHIL 2001 or permission of the Department.
Lectures three hours a week.

PHIL 3320 [0.5 credit]
Contemporary Ethical Theory
Critical study of modern ethical theories, their views on the nature of morality and the justification of moral claims. Topics may include: utilitarianism, libertarianism, communitarianism, egoism, neo-Kantianism, virtue ethics, social contract ethics, feminist ethics, and moral rights.
Precludes additional credit for PHIL 2102.
Prerequisite(s): PHIL 2020 or PHIL 2101 or permission of the department.
Lectures three hours a week.

PHIL 3330 [0.5 credit]
Topics in History of Social and Political Philosophy
A critical examination of selected topics and perspectives in the history of social and political philosophy.
Precludes additional credit for PHIL 3300.
Prerequisite(s): a course in philosophy or second-year standing.
Lectures three hours a week.
PHIL 3340 [0.5 credit]
Topics in Contemporary Social and Political Philosophy
A critical examination of some contemporary approaches to topics in social and political philosophy, such as liberalism, feminism, contractarianism, Marxism, libertarianism, and communitarianism. Precludes additional credit for PHIL 3300. Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.

PHIL 3350 [0.5 credit]
Philosophy, Ethics, and Public Affairs
Advanced study of a set of public policy issues, a particular theory or group of theories, or a particular philosopher, concerning philosophical and ethical aspects of public affairs. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

PHIL 3360 [0.5 credit]
Philosophy, Economics, and Public Policy
The course explores issues at the intersection of philosophy and economics, with a special focus on socially and politically relevant issues. Topics may include: efficiency, cooperation, equity and distributive justice, commodification and the moral limits of markets. Prerequisite(s): third-year standing or permission of the department. Lectures three hours a week.

PHIL 3380 [0.5 credit]
Environments, Technology and Values
Advanced treatment of ethical issues concerning technologies and environments, including: sustainable development, women and the environment, biological diversity, intrinsic or natural value or rights of non-humans, humans’ relation to the rest of the natural world, obligations to future generations, liberty versus equality. Precludes additional credit for PHIL 2804. Prerequisite(s): PHIL 1804 or PHIL 2380 and third-year standing, or permission of the Department. Lectures three hours a week.

PHIL 3450 [0.5 credit]
Topics in Aesthetics
Topics may include theories of aesthetic norms and valuation from ancient Greece onward, or applications of aesthetic theory to various genres of art. Precludes additional credit for PHIL 2400, PHIL 3400, PHIL 3401, and PHIL 3402. Prerequisite(s): At least 0.5 credit in philosophy, or HUMS 1000, or ARTH 2807, or permission of the Department. Seminar two hours a week.

PHIL 3501 [0.5 credit]
Philosophy of Cognitive Science
Philosophical issues arising from cognitive science. Topics may include: the proper methodology for studying the mind, the very possibility of a “science of mind”, the computer model of the mind and reactions to it. Prerequisite(s): PHIL 2501 or PHIL 2502 or second-year standing in Cognitive Science, or permission of the department.

PHIL 3502 [0.5 credit]
Mind and Action
Philosophical thought concerning the relation between mentality and agency. Topics may include: the relation between belief, desire, and behaviour; rationality and normativity; representing and doing; subjectivity and intersubjectivity; physical and psychological laws; mental causation. Authors may include: Wittgenstein, Heidegger, Ryle, Sellars, Anscombe, Davidson, Taylor, McDowell. Prerequisite(s): PHIL 2501 or PHIL 2502, or permission of the Department.

PHIL 3504 [0.5 credit]
Pragmatics
The study of language use in its conversational and cultural contexts. Topics include: conversational impicature; deixis; the semantics-pragmatics boundary; speaker’s reference; speech acts. May include cross-cultural pragmatics. Also listed as LING 3504. Precludes additional credit for LALS 2800 [1.0], LALS 3504, MCOM 2800 [1.0], MCOM 3504 and PHIL 2800 [1.0]. Prerequisite(s): third-year standing, and one of FYSM 1206, LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or LALS/LING 3505/PHIL 3506; or permission of the Department of Philosophy or School of Linguistics and Applied Language Studies. Lectures three hours a week.

PHIL 3506 [0.5 credit]
Semantics
Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics. Also listed as LING 3505. Precludes additional credit for LALS 3505. Prerequisite(s): third-year standing, and one of LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or PHIL/LALS/LING 3504; or permission of the Department of Philosophy or School of Linguistics and Applied Language Studies. Lectures three hours a week.
PHIL 3530 [0.5 credit]  
**Philosophy of Language**  
An intensive introduction to philosophy of language. Topics may include meaning, reference and truth, speech acts, the nature of concepts, language learning, metaphor, compositionality, context-sensitivity.  
Prerequisite(s): third-year standing, and one of FYSM 1206, LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or LALS/LING 3504 or LALS/LING 3505/PHIL 3506; or permission of the department.  
Lectures three hours a week.

PHIL 3540 [0.5 credit]  
**Philosophy of Emotions**  
Emotions are central to human experience and widely studied in philosophy and science. In order to better understand them and their role in our lives, this course explores philosophical questions about emotions as they arise in philosophy of mind and cognitive science, ethics, and aesthetics.  
Prerequisite(s): PHIL 2501, or permission of the department.  
Lectures three hours a week.

PHIL 3901 [0.5 credit]  
**Independent Study**  
Essays and/or examinations based on a list of readings provided by the instructor.  
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3902 [0.5 credit]  
**Independent Study**  
Essays and/or examinations based on a list of readings provided by the instructor.  
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3903 [0.5 credit]  
**Independent Study**  
Essays and/or examinations based on a list of readings provided by the instructor.  
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3906 [0.5 credit]  
**Independent Study**  
Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.  
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3907 [0.5 credit]  
**Independent Study**  
Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.  
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3908 [0.5 credit]  
**Independent Study**  
Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.  
Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 4003 [0.5 credit]  
**Seminar in philosophy Before the Modern Period**  
Detailed study of selected philosophers or issues in philosophy before the modern period.  
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.  
Seminar three hours a week.

PHIL 4004 [0.5 credit]  
**Seminar in philosophy Before the Modern Period**  
Detailed study of selected philosophers or issues in philosophy before the modern period.  
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.  
Seminar three hours a week.

PHIL 4005 [0.5 credit]  
**Seminar in Modern Philosophy**  
Detailed study of selected philosophers or issues in modern philosophy.  
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.  
Seminar three hours a week.
PHIL 4006 [0.5 credit]
Seminar in Modern Philosophy
Detailed study of selected philosophers or issues in modern philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4007 [0.5 credit]
Seminar in Contemporary Philosophy
Detailed study of selected philosophers or issues in contemporary philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5500, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4008 [0.5 credit]
Seminar in Contemporary Philosophy
Detailed study of selected philosophers or issues in contemporary philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5500, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4055 [0.5 credit]
Lexical Semantics
Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.
Also listed as LING 4510.
Precludes additional credit for LING 4055 (no longer offered).
Prerequisite(s): LING 3505 or PHIL 3506.
Also offered at the graduate level, with different requirements, as LING 5510 and PHIL 5660, for which additional credit is precluded.
Seminars three hours a week.

PHIL 4100 [0.5 credit]
Special Topic
Detailed study of a special topic in philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5000, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4210 [0.5 credit]
Seminar in Philosophy of Language or Linguistics
Detailed study of selected issues or the work of selected philosophers in philosophy of language or on philosophical topics in linguistics.
Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5200, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4220 [0.5 credit]
Seminar in Philosophy of Mind or Cognition
Detailed study of selected issues or the work of selected philosophers in philosophy of mind or philosophical aspects of cognition.
Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5200, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4230 [0.5 credit]
Seminar in Metaphysics, Epistemology, or Philosophy of Science
Detailed study of selected issues or the work of selected philosophers in metaphysics, epistemology, or philosophy of science.
Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5250, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4300 [0.5 credit]
Seminar in Ethical Theory or Meta-Ethics
Detailed study of selected issues pertaining to ethical theory or issues of meta-ethics such as realism, relativism, moral knowledge.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5300, for which additional credit is precluded.
Seminar three hours a week.
PHIL 4320 [0.5 credit]
Seminar in Ethics or Moral Philosophy
Detailed study of selected issues in ethics or moral philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5350, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4330 [0.5 credit]
Seminar in Social or Political Philosophy
Detailed study of selected issues in social or political philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Also offered at the graduate level, with different requirements, as PHIL 5350, for which additional credit is precluded.
Seminar three hours a week.

PHIL 4403 [0.5 credit]
Special Topic in Applied Ethics
Detailed study of a special topic in applied ethics.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4404 [0.5 credit]
Special Topic in Applied Ethics
Detailed study of a special topic in applied ethics.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4405 [0.5 credit]
Special Topic in Aesthetics or Philosophy of Art
Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4406 [0.5 credit]
Special Topic in Aesthetics or Philosophy of Art
Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4407 [0.5 credit]
Special Topic in Philosophy of Law
Detailed study of a special topic in philosophy of law.
Also listed as LAWS 4103.
Prerequisite(s): eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.
Seminars three hours a week.

PHIL 4408 [0.5 credit]
Special Topic in Philosophy of Law
Detailed study of a special topic in philosophy of law.
Also listed as LAWS 4104.
Prerequisite(s): eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.
Seminars three hours a week.

PHIL 4503 [0.5 credit]
Special Topic in Philosophy of Computing
Detailed study of a special topic in philosophy of computing.
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4504 [0.5 credit]
Special Topic in Philosophy of Computing
Detailed study of a special topic in philosophy of computing.
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4505 [0.5 credit]
Formal Semantics
Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics, quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.
Also listed as LING 4505.
Precludes additional credit for LALS 4507 (no longer offered).
Prerequisite(s): LALS 3505 or LING 3505 or PHIL 3506 or permission of the Department of Philosophy or School of Linguistics and Language Studies.
Seminars three hours a week.

PHIL 4603 [0.5 credit]
Special Topic in Feminist Philosophy
Detailed study of a special topic in feminist philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.
PHIL 4604 [0.5 credit]
Special Topic in Feminist Philosophy
Detailed study of a special topic in feminist philosophy.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4606 [0.5 credit]
Special Topic in Continental Philosophy
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4607 [0.5 credit]
Special Topic in Continental Philosophy
Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4701 [0.5 credit]
Special Topic in Logic
Detailed study of a special topic in Logic.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4702 [0.5 credit]
Special Topic in Logic
Detailed study of a special topic in Logic.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4703 [0.5 credit]
Special Topic in Philosophical Logic
Detailed study of a special topic in Philosophical Logic.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4704 [0.5 credit]
Special Topic in Philosophical Logic
Detailed study of a special topic in Philosophical Logic.
Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.
Seminar two hours a week.

PHIL 4900 [1.0 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4901 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4902 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4903 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4904 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4906 [0.5 credit]
Tutorial
Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

Physics (PHYS)

Physics (PHYS) Courses

PHYS 1001 [0.5 credit]
Foundations of Physics I
This calculus-based course on classical mechanics covers kinematics, dynamics, gravitation, and oscillatory motion. This is a specialist course for students intending to take further courses in physics.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 1002, BIT 1203, PHYS 1003, PHYS 1007.
Prerequisite(s): Grade 12 Mathematics: Advanced Functions and Grade 12 Mathematics: Calculus and Vectors or equivalent, plus one of MATH 1004 or MATH 1002 or MATH 1052 (the MATH course may be taken concurrently); or permission of the Physics Department. Grade 12 Physics is strongly recommended.
Lectures three hours a week, laboratory or tutorial three hours a week.
PHYS 1002 [0.5 credit]  
**Foundations of Physics II**  
An introduction to electricity, magnetism, electromagnetic fields, and wave motion. This is a specialist course for students intending to take further courses in physics. Includes: Experiential Learning Activity  
Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1004, PHYS 1008.  
Prerequisite(s): PHYS 1001, or PHYS 1003, or PHYS 1007 with a grade of B-; MATH 1004 or MATH 1002 (may be taken concurrently) or MATH 2052 (may be taken concurrently); or permission of the Department.  
Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1003 [0.5 credit]  
**Introductory Mechanics and Thermodynamics**  
Mechanics, gravitation, oscillations, and thermodynamics. The application of calculus to solve problems in these areas of physics is introduced. This course is intended for students in the physical sciences and engineering. Includes: Experiential Learning Activity  
Precludes additional credit for BIT 1002, BIT 1203, PHYS 1001, PHYS 1007.  
Prerequisite(s): Grade 12 Physics or equivalent, plus Grade 12 Mathematics: Advanced Functions or equivalent, plus one of MATH 1004 or MATH 1002 or MATH 1052 (the MATH course may be taken concurrently). Note that Grade 12 Mathematics: Calculus and Vectors is strongly recommended.  
Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1004 [0.5 credit]  
**Introductory Electromagnetism and Wave Motion**  
This calculus-based course introduces potential energy, work, electricity, magnetism, oscillations and waves. Includes: Experiential Learning Activity  
Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1002, PHYS 1008.  
Prerequisite(s): MATH 1004, ECOR 1101 or ECOR 1053 or (ECOR 1045 and ECOR 1046)(The ECOR courses may be taken concurrently) or PHYS 1001 or PHYS 1003 or PHYS 1007 (a grade of at least B- is required for PHYS 1007), or permission of the Department.  
Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1007 [0.5 credit]  
**Elementary University Physics I**  
Mechanics, properties of matter, thermodynamics. Applications chosen in part from the life sciences. For students who lack the prerequisites for PHYS 1001 or PHYS 1003, or who do not intend to take upper-year courses in physics. Includes: Experiential Learning Activity  
Precludes additional credit for BIT 1002, BIT 1203, PHYS 1001, PHYS 1003.  
Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent, or MATH 0107 (may be taken concurrently); or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or MATH 1007 (may be taken concurrently); or (iii) permission of the Physics Department.  
Lectures three hours a week, laboratory or tutorial three hours per week.

PHYS 1008 [0.5 credit]  
**Elementary University Physics II**  
Electricity and magnetism, DC and AC circuits, wave motion and light. Elements of modern physics. Applications chosen in part from the life sciences. Includes: Experiential Learning Activity  
Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1002, PHYS 1004.  
Prerequisite(s): PHYS 1001 or PHYS 1003 or PHYS 1007.  
Lectures three hours a week, laboratory or tutorial three hours per week.

PHYS 1901 [0.5 credit]  
**Planetary Astronomy**  
Description of the known stellar, galactic and extra-galactic systems together with the instruments used to study them. Modern ideas concerning the structure, origin and evolution of our own planet. Formation of the Moon - Earth system. Study of the planets in our solar system.  
Precludes additional credit for PHYS 2203.  
Lectures two and one-half hours a week.

PHYS 1902 [0.5 credit]  
**From our Star to the Cosmos**  
Starting with the Sun, the course studies its composition and source of power, then compares our Sun with the other stars in the galaxy and beyond. Modern ideas concerning the structure, origin and evolution of the universe, pulsars and supernovae are examined.  
Precludes additional credit for PHYS 2203.  
Lectures two and one-half hours a week.

PHYS 1905 [0.5 credit]  
**Physics Behind Everyday Life**  
Examination of the physics behind everyday life. Topics may include transportation, sports, weather and climate, electricity, and sustainable energy. No science background is required. Faculty of Science students may only take this course as a free elective. Includes: Experiential Learning Activity  
Online Course.
PHYS 2004 [0.5 credit]  
Modern Physics for Engineers  
Prerequisite(s): PHYS 1002 or PHYS 1004 or PHYS 1008 with a grade of B- or better, plus MATH 1004 and MATH 1104 or equivalent. Restricted to B.Eng. students not in the Engineering Physics program. Students in programs other than B.Eng. must obtain permission of the Department.  
Lectures three hours a week.

PHYS 2101 [0.5 credit]  
Mechanics and Properties of Matter  
Includes: Experiential Learning Activity  
Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall average of B- or better; MATH 1004 and MATH 1104, or MATH 1002 and MATH 1102.  
Lectures three hours a week, laboratory three hours a week, tutorials (optional) once a week.

PHYS 2202 [0.5 credit]  
Wave Motion and Optics  
Geometrical optics. Types of waves, vibrating string and the classical wave equation. General solutions for traveling waves. Superposition and interference, coherence, wave packets, waves in 2 and 3 dimensions. Propagation of electromagnetic waves. Light and physical optics, oscillator model for dispersion, diffraction, polarization, and refraction.  
Includes: Experiential Learning Activity  
Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1104 or MATH 1102 or MATH 2152, and MATH 2004 or MATH 2000 (may be taken concurrently).  
Lectures three hours a week, laboratory three hours a week.

PHYS 2203 [0.5 credit]  
Astronomy  
The observational basis of astronomy. The history of astronomy, properties of light, solar system observations and stellar astronomy. Precludes additional credit for PHYS 1901 and PHYS 1902.  
Prerequisite(s): PHYS 1002 or PHYS 1004 or permission of the department. PHYS 1008 with a grade of B- or better may also be used if MATH 1004 or MATH 1007 or MATH 1002 or MATH 2052 have been successfully completed.  
Lectures three hours a week.

PHYS 2305 [0.5 credit]  
Electricity and Magnetism  
Prerequisite(s): PHYS 1001, PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or higher; MATH 2004 or MATH 2000 (may be taken concurrently).  
Lectures three hours a week.

PHYS 2306 [0.5 credit]  
Physics of Electrical and Electronic Measurements I  
D.C. and A.C. circuit theory. Resonant circuits. Basic measuring devices, the oscilloscope; impedances, bandwidth, noise; vacuum tubes, transistors, useful approximations for circuit design; feedback, amplifiers, oscillators; operational circuits; digital circuits. Lectures emphasize the physical basis of instrument design. Laboratory emphasizes modern digital instrumentation.  
Includes: Experiential Learning Activity  
Prerequisite(s): PHYS 1001, PHYS 1002 or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or better.  
Lectures three hours a week, laboratory three hours a week.

PHYS 2401 [0.5 credit]  
Thermal Physics  
Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B-) ; plus MATH 1004 and MATH 1104 or MATH 1002 (no longer offered) and MATH 1102 (no longer offered), or MATH 2052 and MATH 2152.  
Lectures three hours a week.
PHYS 2604 [0.5 credit]
Modern Physics I
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 2004.
Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1004 and MATH 1104, or MATH 1002 (no longer offered) and MATH 2052 (no longer offered) or MATH 2052 and MATH 2152.
Lectures three hours a week, laboratory three hours a week.

PHYS 2903 [0.5 credit]
Physics Towards the Future
From classical phenomena to aspects of modern physics and recent advances. Topics may include light and colour, music and sound, cell phones, the galaxy and beyond. No science background is required. Faculty of Science students may only take this course as a free elective.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Online course.

PHYS 3007 [0.5 credit]
Third Year Physics Laboratory: Selected Experiments and Seminars
Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given.
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 3008, PHYS 3009.
Prerequisite(s): PHYS 2202 and PHYS 2604, or permission of the Department.
Six hours a week.

PHYS 3008 [0.5 credit]
Third Year Physics Laboratory: Selected Experiments and Workshop
Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given.
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 3007, PHYS 3009.
Prerequisite(s): PHYS 2202 and PHYS 2604, or permission of the Department.
Six hours a week.

PHYS 3009 [0.5 credit]
Third Year Physics Laboratory: Selected Experiments and Seminars with Observational Astronomy
Students complete a small number of experiments selected from astronomy, astrophysics, modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. At least one astronomy/astrophysics related experiment is required. An exercise on literature searches and student seminars on experimental and numerical methods are included.
Includes: Experiential Learning Activity
Precludes additional credit for PHYS 3007, PHYS 3008.
Prerequisite(s): PHYS 2202, PHYS 2604 and PHYS 2203 or permission of the Department.
Six hours a week.

PHYS 3207 [0.5 credit]
Topics in Biophysics
Introduction to biophysics. Random motion of molecules and diffusion; viscosity and the circulatory system; laws of thermodynamics and physical forces responsible for chemical reactions, molecular self-assembly and recognition; enzyme kinetics and molecular machines; nerve impulse and its propagation.
Prerequisite(s): PHYS 2604 or permission of the Department.
Lectures three hours a week, tutorial or seminar one hour a week.

PHYS 3308 [0.5 credit]
Electromagnetism
Precludes additional credit for ELEC 3909.
Prerequisite(s): PHYS 2202, PHYS 2604, PHYS 2305, MATH 2004 or MATH 2008, and MATH 3705, or permission of the Department.
Lectures three hours a week.

PHYS 3402 [0.5 credit]
Heat and Thermodynamics
Zeroth, First and Second Laws of Thermodynamics; enthalpy, Helmholtz and Gibbs functions and the Maxwell relations; phase transitions; thermodynamics of magnetism; cryogenics cooling by Joule-Thompson effect, adiabatic expansion of a gas, adiabatic demagnetization, helium dilution refrigeration; black body radiation; negative temperatures.
Prerequisite(s): PHYS 2101 and PHYS 2305, MATH 2007, MATH 2008, MATH 2107 and MATH 2401 or permission of the Department.
Lectures three hours a week.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credit</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 3606</td>
<td>0.5</td>
<td>Modern Physics II</td>
<td>Elements of condensed matter physics, semiconductors, superconductivity. Elements of nuclear physics, fission, fusion, power generation. Introduction to particle physics. Ionizing radiation: production, interactions, detection. Medical physics: radiation biophysics, cancer therapy, imaging. Includes: Experiential Learning Activity. Also listed as PHYS 3608. Prerequisite(s): PHYS 2604 and PHYS 3701, or permission of the Department. Lectures three hours a week, laboratory two hours a week.</td>
</tr>
<tr>
<td>PHYS 3608</td>
<td>0.5</td>
<td>Modern Applied Physics</td>
<td>Elements of condensed matter physics, semiconductors, superconductivity. Modern optics. Elements of nuclear physics, fission, fusion, power generation. Ionizing radiation: production, interactions, detection. Medical physics: radiation biophysics, cancer therapy, imaging. Includes: Experiential Learning Activity. Also listed as PHYS 3606. Prerequisite(s): PHYS 2604 and PHYS 3701, or permission of the Department. Lectures three hours a week, laboratory three hours a week.</td>
</tr>
<tr>
<td>PHYS 3701</td>
<td>0.5</td>
<td>Elements of Quantum Mechanics</td>
<td>Analysis of interference experiments with waves and particles; fundamental concepts of quantum mechanics, Schrödinger equation; angular momentum, atomic beams; hydrogen atom; atomic and molecular spectroscopy; Pauli principle; simple applications in the physics of elementary particles. Prerequisite(s): PHYS 2604, MATH 2000 [1.0] (may be taken concurrently), or MATH 2004 or MATH 2008, and MATH 3705 (may be taken concurrently), or permission of the Department. Lectures three hours a week.</td>
</tr>
<tr>
<td>PHYS 3801</td>
<td>0.5</td>
<td>Classical Mechanics</td>
<td>Introduction to Lagrangian and Hamiltonian mechanics: Poisson brackets, tensors and dyadics; rigid body rotations: introductory fluid mechanics coupled systems and normal coordinates; relativistic dynamics. Prerequisite(s): PHYS 2101, PHYS 2202, PHYS 2305, MATH 2007, MATH 2008, MATH 2107, MATH 2401 or permission of the Department. Lectures three hours a week.</td>
</tr>
<tr>
<td>PHYS 3802</td>
<td>0.5</td>
<td>Advanced Dynamics</td>
<td>Equations of motion for a single particle. Oscillatory Motion. Lagrangian and Hamiltonian formulations of mechanics. Central force motion. Motion of systems of particles and of rigid bodies. Prerequisite(s): PHYS 2202, PHYS 2604, and MATH 2004, or permission of the Department. Lectures three hours a week.</td>
</tr>
<tr>
<td>PHYS 3807</td>
<td>0.5</td>
<td>Mathematical Physics I</td>
<td>Boundary Value problems involving curvilinear coordinates; spherical harmonics, Bessel functions, Green's functions. Functions of a complex variable: analytic functions, contour integration, residue calculus. Precludes additional credit for MATH 3007 or MATH 3057. Prerequisite(s): PHYS 2202, MATH 2004, MATH 3705 or permission of the Department. Lectures three hours a week, tutorial one hour a week.</td>
</tr>
<tr>
<td>PHYS 3808</td>
<td>0.5</td>
<td>Mathematical Physics II</td>
<td>Solution of second-order total differential equations by Frobenius' method. Sturm-Liouville theory. Special functions: Legendre, Bessel, Hermite, Laguerre and associated functions. Partial differential equations: method of separation of variables, eigenfunctions and eigenvalues and eigenfunction expansions. Green's function techniques for solving inhomogeneous partial differential equations. Precludes additional credit for MATH 3004, MATH 3008, MATH 3705, and PHYS 3806. Prerequisite(s): PHYS 3807 or MATH 3007 or permission of the Department. Lectures three hours a week.</td>
</tr>
<tr>
<td>PHYS 3999</td>
<td>0.0</td>
<td>Co-operative Work Term Report</td>
<td>Provides practical experience for students enrolled in the Co-operative option. Students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns. Includes: Experiential Learning Activity. Prerequisite(s): registration in the Physics Co-operative education option and permission of the Department.</td>
</tr>
<tr>
<td>PHYS 4007</td>
<td>0.5</td>
<td>Fourth-Year Physics Laboratory: Selected Experiments and Seminars</td>
<td>Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included. Includes: Experiential Learning Activity. Prerequisite(s): PHYS 3606 (or PHYS 3608) and registration in the Engineering Physics program. Laboratory, six hours a week.</td>
</tr>
<tr>
<td>PHYS 4008</td>
<td>0.5</td>
<td>Fourth-Year Physics Laboratory: Selected Experiments and Workshop</td>
<td>Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given. Includes: Experiential Learning Activity. Prerequisite(s): PHYS 3007. Six hours a week.</td>
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</table>
PHYS 4201 [0.5 credit]
Astrophysics
Stellar evolution, including stellar modeling, main sequence stars, red giants and the end states of stars such as neutron stars and black holes. Galactic structure and dynamics. Neutrino astrophysics. Prerequisite(s): PHYS 3701, PHYS 3606 or PHYS 3608, and PHYS 2401 or PHYS 4409, or permission of the Department. (PHYS 3606 or PHYS 3608 and PHYS 4409 may be taken concurrently). Also offered at the graduate level, with different requirements, as PHYS 5401, for which additional credit is precluded. Lectures three hours a week.

PHYS 4202 [0.5 credit]
Cosmology
Observational evidence for the Big Bang. Cosmological space-time, expansion dynamics and contents of the universe. Physical processes in the expanding universe, inflation, nucleosynthesis, the cosmic microwave background, dark matter, and dark energy. Prerequisite(s): PHYS 3701, PHYS 3606 or PHYS 3608, and PHYS 2401 or PHYS 4409, or permission of the Department. (PHYS 3606 or PHYS 3608 and PHYS 4409 may be taken concurrently). Also offered at the graduate level, with different requirements, as PHYS 5402, for which additional credit is precluded. Lectures three hours per week.

PHYS 4203 [0.5 credit]
Physical Applications of Fourier Analysis
Fourier transform, convolution. Sampling theorem. Applications to imaging: descriptors of spatial resolution, filtering. Correlation, noise power. Discrete Fourier transform, FFT. Filtering of noisy signals. Image reconstruction in computed tomography and magnetic resonance. Laplace transform. Integral transforms, application to boundary value problems. Prerequisite(s): MATH 3705, or permission of the Department. Also offered at the graduate level, with different requirements, as PHYS 5313, for which additional credit is precluded. Lectures three hours a week.

PHYS 4208 [0.5 credit]
Modern Optics
Electromagnetic wave propagation; reflection, refraction; Gaussian beams, guided waves. Laser theory: stimulated emission, cavity optics, modes, gain and bandwidth; atomic and molecular lasers. Mode locking, Q switched. Diffraction theory, coherence, Fourier optics, holography, laser applications. Optical communication systems, nonlinear effects: devices, fibre sensors, integrated optics. Prerequisite(s): PHYS 2202, PHYS 3606 (or PHYS 3608), and PHYS 3308 or permission of the Department. Also offered at the graduate level, with different requirements, as PHYS 5318, for which additional credit is precluded. Lectures three hours a week.

PHYS 4307 [0.5 credit]
Electromagnetic Radiation
Electromagnetic wave propagation in a vacuum, dielectrics, conductors, and ionized gases, reflection, refraction, polarization at the plane boundary between two media; waveguide and transmission line propagation; dipole and quadrupole radiation fields; antenna systems. Electromagnetic mass, radiation pressure. Tensor notation, transformation of the electromagnetic fields. Prerequisite(s): PHYS 3308, PHYS 3801, PHYS 3807 and PHYS 3808 (except for Mathematics and Physics Double Honours students), or permission of the Department. Lectures three hours a week.

PHYS 4407 [0.5 credit]
Statistical Physics
Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics are derived, and applied in appropriate physical situations. Fluctuations. Kinetics and transport processes, including the Boltzmann transport equation and some of its applications. Prerequisite(s): PHYS 3402, PHYS 2602 or PHYS 3601, PHYS 3701 or PHYS 3602, PHYS 4707 (may be taken concurrently); or permission of the Department. Lectures three hours a week.

PHYS 4409 [0.5 credit]
Thermodynamics and Statistical Physics
The three Laws of Thermodynamics, enthalpy, Helmholtz and Gibbs functions. Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics. Precludes additional credit for PHYS 3402 and PHYS 4407. Prerequisite(s): PHYS 3701 (may be taken concurrently), MATH 2004 and MATH 3705, or permission of the Department.
PHYS 4508 [0.5 credit]
Solid State Physics
An introduction to solid state physics. Topics include crystal structure, phonons and lattice vibrations, conductors, semiconductors, insulators and superconductivity.
Prerequisite(s): PHYS 3606 or PHYS 3608, and PHYS 3701, or permission of the Department.
Lectures three hours a week.

PHYS 4602 [0.5 credit]
Physics of Elementary Particles
Prerequisite(s): PHYS 4707 or permission of the Department.
Also offered at the graduate level, with different requirements, as PHYS 5602, for which additional credit is precluded.
Lectures three hours a week.

PHYS 4608 [0.5 credit]
Nuclear Physics
Ground state properties of nuclei. Nuclear models, binding energy, properties of excited nuclei. Alpha, beta and gamma decay. Passage of radiation through matter, detectors. Nuclear reactions, cross sections, fission, fusion. Elements of neutron physics.
Prerequisite(s): PHYS 3606 or PHYS 3608 or permission of the Department.
Lectures three hours a week.

PHYS 4707 [0.5 credit]
Introduction to Quantum Mechanics I
The basic interpretative postulates of quantum mechanics; applications of wave mechanics and operator methods to various quantum mechanical systems; quantum mechanical treatment of angular momentum.
Prerequisite(s): PHYS 3701 and PHYS 3807 or equivalent, or permission of the Department.
Lectures three hours a week.

PHYS 4708 [0.5 credit]
Introduction to Quantum Mechanics II
Scattering theory and application; bound state problems; approximation methods.
Prerequisite(s): PHYS 4707 or permission of the Department.
Lectures three hours a week.

PHYS 4804 [0.5 credit]
Introduction to General Relativity
Special relativity using tensor analysis. Curved spacetime with physics applications which may include the solar system, stars, black holes and gravitational waves. Introduction to differential geometry and Einstein's field equations.
Prerequisite(s): PHYS 3308, PHYS 3802 and PHYS 3807 or equivalent, or permission of the Department.
Also offered at the graduate level, with different requirements, as PHYS 5804, for which additional credit is precluded.
Lectures three hours a week.

PHYS 4807 [0.5 credit]
Statistical Data Analysis Techniques for Physics
Prerequisite(s): third year standing in a physics program and an ability to program in Python, Java, C or C++, and permission of the Department.
Also offered at the graduate level, with different requirements, as PHYS 5002, for which additional credit is precluded.
Lectures three hours a week.

PHYS 4901 [0.5 credit]
Special Topics in Physics
Each year, at the direction of the Department, a course on a special topic may be offered.
Prerequisite(s): permission of the Department.

PHYS 4907 [0.5 credit]
Fourth-Year Project
Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.
Project. Fall term only.

PHYS 4908 [0.5 credit]
Fourth-Year Project
Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.
Project. Winter term only.
PHYS 4909 [1.0 credit]
Fourth-Year Project
Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.
Project

Political Management (POLM)

Political Management (POLM) Courses

POLM 3000 [0.5 credit]
Introduction to Political Management
Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.
Also listed as COMS 3100, PSCI 3410.
Precludes additional credit for COMM 3100 (no longer offered).
Prerequisite(s): third-year standing.
Lecture three hours a week.

POLM 4012 [0.5 credit]
Advocacy and Government Relations in Canada
Through applied exercises, case studies and a project with an external organization, students will build knowledge and skills required for advocacy and government relations in the private and voluntary sectors.
Prerequisite(s): POLM 3000.
Also offered at the graduate level, with different requirements, as POLM 5012, for which additional credit is precluded.
Seminar three hours per week.

Political Science (PSCI)

Political Science (PSCI) Courses

PSCI 1100 [0.5 credit]
Democracy in Theory and Practice
Introduction to modern political ideas such as liberty, equality, the rule of law, representation, participation (including gender aspects), the impact of these ideas on political and policy making institutions in Canada; other countries may be examined. Basic research and academic writing skills.
Precludes additional credit for PSCI 1000, PSCI 1001, and PSCI 1003.
Lectures two hours a week, tutorials one hour a week.

PSCI 1200 [0.5 credit]
World Politics
Compares politics in selected states and world regions, including political institutions and cultures, development, public policy making, and gender. Global issues and international relations among states, international organizations, and other actors. Basic research and academic writing skills.
Precludes additional credit for PSCI 1000 (no longer offered), PSCI 1002, GPOL 1000 (no longer offered) and GPOL 1500.
Lectures two hours a week, tutorials one hour a week.

PSCI 1500 [0.5 credit]
Technology, Nature, Power
Social media, self-driving cars, genetic manipulation: technology is transforming both the human experience and the natural world. This course explores interactions among technological change, the evolution of social and political order, and the transformation of the environment (for example, with climate change).
Lectures two hours a week.

PSCI 1501 [0.5 credit]
Politics of Migration
Introduction to concepts and theories that help explain the complex phenomenon of human migration, including the social and political relevance of different types of migration to Canada and in other regions and the political responses to migration and mobility today.
Lectures two hours a week, tutorials one hour a week.

PSCI 2002 [0.5 credit]
Canadian Politics and Civil Society
An examination of the cultural, social, and economic context of Canadian politics, including interest groups and social movements, regionalism, language, ethnicity, and gender.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.
PSCI 2003 [0.5 credit]
Canadian Political Institutions
An examination of Canadian political institutions, including federalism, Parliament, the constitution, political parties and the electoral system.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2101 [0.5 credit]
Comparative Politics of the Global North
Domestic politics in states of the Global North. Comparison of political and economic regimes, political institutions, actors, political processes and cultures, and patterns of public policy making.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2102 [0.5 credit]
Comparative Politics of the Global South
Introduction to domestic politics in post-colonial and developing states of the Global South. Topics may include nationalism, authoritarianism, economic development, revolution, democratization, and the politics of gender, religion, and ethnicity.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2200 [0.5 credit]
Introduction to U.S. Politics
An examination of several important aspects of the U.S. political system, including separation of powers, checks and balances, and federalism.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorial one hour a week.

PSCI 2301 [0.5 credit]
History of Political Thought I
Western political thought from classical times to the Renaissance: Plato, Aristotle, and other thinkers.
Prerequisites: second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2302 [0.5 credit]
History of Political Thought II
Western political thought from the Renaissance: Machiavelli, Hobbes, Locke, Rousseau and other thinkers.
Prerequisites: second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2401 [0.5 credit]
Public Affairs Analysis
Introduction to central concepts and processes involved in public affairs. Exploration of public issues, policy approaches and decision-making structures using theoretical, empirical and applied approaches.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2500 [0.5 credit]
Gender and Politics
Introduction to gender and politics of diversity, including how feminist activism and organizing finds expression in the political process and structures of representation such as political parties, legislatures and the state.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2601 [0.5 credit]
International Relations: Global Politics
Introduction to theories, concepts and issues in global politics. Topics may include conflict and intervention, peace and security, international institutions, norms and ethics, human rights, gender, culture, and globalization.
Prerequisites: second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2602 [0.5 credit]
International Relations: Global Political Economy
Introduction to the international political economy. Topics may include contemporary changes in the global political economy, multinational corporations, foreign economic policy, global and regional economic institutions, environmental issues, international development and relations between rich and poor countries.
Prerequisite(s): second-year standing.
Lectures two hours a week, tutorials one hour a week.

PSCI 2701 [0.5 credit]
Introduction to Research Methods in Political Science
Introduction to the logic and design of research. Measurement and inference in qualitative and quantitative political science.
Prerequisites: second-year standing.
Lectures two hours a week, tutorials one hour a week.
PSCI 2702 [0.5 credit]
Quantitative Research Methods in Political Science
The logic and methods of the quantitative study of politics, with emphasis on the application and interpretation of statistical techniques for data analysis. Students are strongly encouraged to take this course the same year as PSCI 2701.
Includes: Experiential Learning Activity
Precludes additional credit for ENST 2006, GEOG 2006, PSCI 2700 (no longer offered).
Prerequisite(s): PSCI 2701 or permission of the Department.
Lectures two hours a week, tutorials one hour a week.

PSCI 3000 [0.5 credit]
Canadian Provincial Politics
A comparative examination of the nature of Canadian provincial politics. Topics include: political culture, history, party systems, electoral systems and voting behaviour.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3004 [0.5 credit]
Political Parties and Elections in Canada
The evolution of the party system, the growth of major and minor party movements and the electoral process in Canada.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3005 [0.5 credit]
Ontario Government and Politics
A survey of the political process and political institutions in Ontario.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3006 [0.5 credit]
Social Power in Canadian Politics
The role of social forces in the Canadian political process, including interest groups, social movements, elites and classes.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3007 [0.5 credit]
Constitutional Politics in Canada
The politics of the Canadian constitution. Particular attention to historical and contemporary constitutional reform.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3100 [0.5 credit]
Politics of Development in Africa
The historical background of African independence, and contemporary struggle for democracy and economic development in Africa.
Prerequisite(s): third-year standing and one of AFRI 1002, GPOL 1000, GPOL 1500, GPOL 2500 or PSCI 2102.
Lectures three hours a week.

PSCI 3101 [0.5 credit]
Politics of War in Africa
The recurrent crises of war, and political instability in Africa, along with regional and international efforts to resolve them.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3102 [0.5 credit]
Politics of Development of China
The evolving structures and processes of government in (greater) China with particular emphasis on politics in the People's Republic of China and secondary emphasis on Taiwan and Hong Kong.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3103 [0.5 credit]
State, Society and Economy in Northeast Asia
The relationship between government structures, society and the economy in Northeast Asia with particular emphasis on Japan and Korea.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3104 [0.5 credit]
Imperialism
Ideologies, practices, and legacies of western dominance over Asia, Africa, and Latin America. Examines the complexities of imperial control and the colonial relationship from the nineteenth century to present.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3105 [0.5 credit]
The Causes of War
Alternate theories of the causes of war. Such alternate perspectives as biological, social and comparative historical approaches, including the results of peace research activities of the past two decades.
Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2601.
Lectures three hours a week.

PSCI 3106 [0.5 credit]
Politics of Popular Culture
Examines political themes in popular culture. Cultural media may include film, literature, television, music, cartoons/comics, and the news media. Political themes may include war, ethnicity, nationalism, revolution, citizenship, gender and sexuality.
Prerequisite(s): third-year standing.
Lectures three hours a week.
PSCI 3109 [0.5 credit]
The Politics of Law and Morality
Politics of moral regulation in Canada, the United States and other jurisdictions. The treatment in law and public policy of such human rights issues as: capital punishment, sexual orientation, euthanasia, abortion, new reproductive technologies, racial discrimination, religious and equality rights.
Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003 or PSCI 2101.
Lectures three hours a week.

PSCI 3200 [0.5 credit]
U.S. Constitutional Politics
The central role played by the U.S. Constitution in the country's political life, from the Framers to current controversies. Includes issues of race, class and gender.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3203 [0.5 credit]
Government and Politics in the Middle East
The evolution and functioning of political systems in the Middle East region, with emphasis on the problems of political stability, the impact of the West, the role of Islam, and war and peace.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3204 [0.5 credit]
Politics of Latin America
An overview of the evolution of Latin American political systems, including the impact of the European conquest, democratization, economic liberalization, state-civil society relations, gender politics, revolutionary movements, and relations with the United States.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3205 [0.5 credit]
Mexican Politics
An introduction to the politics, society and economy of Mexico. Topics include processes of democratization and economic liberalization, human rights, the environment, the role of women, labour, and indigenous peoples, and social policy. Special emphasis on Mexico's role in the North American political economy.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and one of GPOL 1500, GPOL 2500, PSCI 2102 or PSCI 2602.
Lectures three hours a week.

PSCI 3206 [0.5 credit]
European Democracies
A comparative examination of select controversies over democracy in specific European countries, considered within the context of 20th century historical trends, as well as contemporary political debates.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3207 [0.5 credit]
The Government and Politics of European Integration
The process of European integration; the European Union and its institutions; core EU policies, challenges to the integration process (e.g. democratic legitimacy, enlargement); theories of European integration.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3208 [0.5 credit]
Politics in Russia and Ukraine: Power and Contestation
Political development in post-Soviet Russia and Ukraine, including examination of the complicated relationship between the two states. Historical perspectives, institutional context (including federalism) and comparative insights.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3209 [0.5 credit]
Reconstruction and Transformation in Europe and Eurasia
The politics of dramatic political changes, such as revolution, secession, constitutional revision, and systemic reform. The course will include selected historical and comparative cases from Central and Eastern Europe and the former Soviet Union.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3300 [0.5 credit]
Politics and Literature
A study of imaginative prose in which political ideas and/or political settings dominate. Literature as political communication, the impact of literature upon politics, the peculiar value of literature in the study of politics and its shortcomings.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3302 [0.5 credit]
Comparative Political Thought
A comparative survey of political thought focusing on a range of traditions that may include readings from Aboriginal, African, Chinese, Indian, Jewish, Latin American, Muslim, and Persian perspectives.
Prerequisite(s): third-year standing.
Lectures three hours a week.
PSCI 3303 [0.5 credit]
Feminist Political Theory
Introduction to feminist philosophical responses to sexism, taking into consideration the different waves of feminist discourse. Topics may include the concept of gender; women's diversity and its implications; ‘intersectionality'; gender, capitalism and the family; and new approaches to feminist knowledge and feminist agency.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3307 [0.5 credit]
Politics of Human Rights
Politics of human rights in its historical and cultural context, including: early liberal theories of natural rights; utilitarian and Marxist critiques; contemporary rights debates; different generations of rights; feminism and women's rights; cultural relativism; state sovereignty; and, problems of implementation and enforcement.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3308 [0.5 credit]
Modern Political Thought
A survey of trends in modern political thought, including some of liberalism, conservatism, neo-conservatism, Marxist and neo-Marxist socialism, communitarianism, postmodernism and globalization.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3309 [0.5 credit]
Modern Ideologies
A survey of ideologies, mainly since 1900, including some of nationalism, utopian socialism, communism, fascism, populism, environmentalism and feminism.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3311 [0.5 credit]
History of Muslim Political Thought
A survey of political thought among Muslims, tracing the emergence and influence of juridical, philosophical and administrative approaches to politics on Muslim civilization.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3312 [0.5 credit]
Enlightenment Political Thought
Major Enlightenment thinkers and major themes of Enlightenment political thought. Topics may include reason, religion, toleration, liberty, equality, the foundations of political authority, autonomy, morals, taste, progress, history or commerce.
Prerequisite(s): third-year standing.
Lecture three hours a week.

PSCI 3401 [0.5 credit]
Canadian Public Administration
Study of the institutions and dynamics of government in Canada, with emphasis on political context, administrative reforms, policy development and ongoing challenges. Analysis may include federal, provincial and/or municipal levels of government.
Includes: Experiential Learning Activity
Prerequisite(s): third year standing and one of PSCI 2002, PSCI 2003, PSCI 2401, or PAPM 2000.
Lectures three hours a week.

PSCI 3402 [0.5 credit]
Canadian Public Policy
Policy communities and policy networks in Canada with particular attention paid to policy issues, the political environment, policy instruments, impact and outcomes.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003, PSCI 2401, or PAPM 2000.
Lectures three hours a week.

PSCI 3405 [0.5 credit]
Comparative Public Policy Analysis
The formation and impact of public policy: a variety of political systems as well as a variety of policy areas. Emphasis on developing skills for the analysis of policy formation and impact.
Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2101, PSCI 2400, PSCI 2401, or PAPM 2000.
Lectures three hours a week.

PSCI 3406 [0.5 credit]
Public Affairs and Media Strategies
The public affairs and issue management strategies of corporations, government departments, and other institutions in Canada from a comparative perspective.
Prerequisite(s): third-year standing.
Lectures three hours a week.

PSCI 3407 [0.5 credit]
Public Opinion and Public Policy
Theories about the origins and dynamics of public opinion, the ways in which public opinion influences government policy and decision-making, and how decision-makers are able to shape public opinion.
Prerequisite(s): PSCI 2701 and PSCI 2702.
Lectures three hours a week.

PSCI 3410 [0.5 credit]
Introduction to Political Management
Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.
Also listed as POLM 3000 and COMS 3100.
Prerequisite(s): third-year standing.
Lecture three hours a week.
PSCI 3411 [0.5 credit]  
Data Analysis for Governance: Formal Approaches and Practical Realities  
Finding and using data to make, manage and evaluate public policy. Emphasis will be on developing data analysis skills, as well as the use and application of substantive theories.  
Prerequisite(s): PSCI 2701 and PSCI 2702.  
Lectures three hours a week.

PSCI 3502 [0.5 credit]  
Gender and Politics: Global South  
A contemporary approach to the role of gender in political systems of the South. Topics may include gender and development, human rights, social policies, globalization, state-civil society relations, political participation and citizenship.  
Prerequisite(s): third-year standing and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2102, PSCI 2500 or PSCI 3307.  
Lectures three hours a week.

PSCI 3600 [0.5 credit]  
International Institutions  
Origins, structure and functioning of international institutions with emphasis on the United Nations as well as regional organizations. Topics include peace and security, international aid and development, human rights and the control of global resources.  
Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2601 or PSCI 2602.  
Lectures three hours a week.

PSCI 3601 [0.5 credit]  
Theories of International Politics  
Examination of the major theoretical approaches to the study of international politics. Topics may include realism, liberalism, Marxism, constructivism, feminism, and poststructuralism.  
Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2601.  
Lectures three hours a week.

PSCI 3603 [0.5 credit]  
Strategic Thought and International Security  
The ideas of classical and contemporary strategic thinkers. International security issues and concepts.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3606 [0.5 credit]  
Canadian Foreign Policy  
The traditions, domestic influences, objectives, capabilities, and decision-making processes, and analysis of selected contemporary issues.  
Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2002, PSCI 2003, PSCI 2601 or PSCI 2602.  
Lectures three hours a week.

PSCI 3607 [0.5 credit]  
North American Security and Defence Policy  
The evolution of Canadian and U.S. security and defence policy as it pertains to North America. Contemporary issues and development.  
Prerequisite(s): third-year standing.  
Lectures three hours a week.

PSCI 3608 [0.5 credit]  
Migration Governance  
Advanced introduction to the politics of human mobility and migration, including attempts by states and other actors to influence migration and mobility and emerging types of governance at the national, regional and global levels.  
Prerequisite(s): third-year standing or permission of the Department.  
Lecture three hours a week.

PSCI 3609 [0.5 credit]  
Global Politics of Food  
Drawing on theories of international relations, political economy, and public policy-making, this course examines the global, national and local politics of food production and distribution. Topics include food security, free trade versus fair trade, the environmental sustainability of food systems, food sovereignty and food aid.  
Prerequisite(s): third-year standing or permission of the Department.  
Lecture three hours a week.

PSCI 3700 [0.5 credit]  
Government and Politics of South Asia  
Patterns of colonialism, evolving political regimes and issues in development and foreign policy in the countries of South Asia, including India, Pakistan, Bangladesh, Sri Lanka, and other member states of SAARC.  
Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2102.  
Lectures three hours a week.

PSCI 3702 [0.5 credit]  
Israeli-Palestinian Relations  
The origins and evolution of the Israeli-Palestinian conflict and peace process. Includes: Experiential Learning Activity  
Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2601 or PSCI 2602.  
Lectures three hours a week.

PSCI 3703 [0.5 credit]  
Governing in the Global Economy  
The main approaches and policy issues in the political economy of advanced industrialized states. The relationship between state and market and the ways in which national states have responded to the pressures of governing in an increasingly interdependent global economy.  
Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2602.  
Lectures three hours a week.
PSCI 3704 [0.5 credit]
Government and Politics of Central and Eastern Europe
A comparative examination of Central and Eastern European states and societies. Topics discussed include political institutions and processes, societal structures and collective identities, patterns of post-communist transformation, the impact of European integration, relations with Russia and post-Soviet States. Prerequisite(s): third-year standing. Lectures three hours a week.

PSCI 3709 [0.5 credit]
Ancient and Medieval Political Thought
The significance for political theory of the ancient and medieval controversies over nature/convention, power/knowledge, time/eternity, theory/practice, and science/mysticism. Thinkers such as Homer, the pre-Socratics, Plato and Aristotle, the neo-Platonists, Augustine, and the Scholastics. Prerequisite(s): (PSCI 2301 and PSCI 2302) or permission of the Department. Lectures three hours a week.

PSCI 3801 [0.5 credit]
Environmental Politics
Environmental issues in contemporary political argument. Topics include: environmental movements and green parties, environmental ethics and animal rights, economic approaches to environmental management, the politics of sustainable development, and the international politics of the environment. Prerequisite(s): third-year standing. Lectures three hours a week.

PSCI 3802 [0.5 credit]
Globalization and Human Rights
An examination of the various dimensions and meanings of globalization and its relationship with human rights. The main emphasis will be on the implications of the emerging global economy for economic, social, political and cultural rights. Also listed as SOCI 3027, ANTH 3027. Prerequisite(s): third-year standing and one of: GPOL 1500, SOCI 1010 [1.0], ANTH 1003[1.0], ANTH 1010[1.0], ISSC 1001[1.0], PSCI 2601, PSCI 2602, LAWS 2105, PHIL 2103 or (ANTH 1001 and ANTH 1002), or (SOCI 1001 and SOCI 1002). Lectures three hours a week.

PSCI 3805 [0.5 credit]
Politics of Race
The meaning, sources and practice of racialism, as well as efforts to combat it, in a comparative context. Case studies will include South Africa, the United States, and Canada. Includes: Experiential Learning Activity. Prerequisite(s): third-year standing. Lectures three hours a week.

PSCI 3809 [0.5 credit]
Selected Topics in Political Science
A lecture course on a selected contemporary topic in Political Science. Topic may vary from year to year and will be announced in advance of the registration period by the Department of Political Science. Prerequisite(s): third-year standing. Lectures three hours a week.

PSCI 3900 [1.0 credit]
Études dirigées
Une programme de lectures choisies et de travaux écrits dans le domaine de spécialisation d’un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts. Prerequisite(s): third-year standing in the Political Science Mention: Français program.

PSCI 3905 [1.5 credit]
Washington Center Internship
One-term internship at The Washington Center in D.C.; options in American politics, international affairs, and other areas. Evaluation by Washington Center faculty, but governed by Carleton University Political Science Department regulations. Graded Sat or Uns. Includes: Experiential Learning Activity. Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210 and permission of the department.

PSCI 3906 [1.0 credit]
Full-Year Political Science Internship
Internship gives students the opportunity to work with an organization whose focus relates to politics over a full academic year. Students complete a research paper related to their internship. Students must identify an organization to host the internship and a faculty member to provide supervision. Includes: Experiential Learning Activity. Precludes additional credit for GPOL 3100, PSCI 3907, Carleton/Leeds Parliamentary Exchange and the Washington Internship. Prerequisite(s): third-year Honours standing with a minimum Political Science CGPA of 9.0 or permission of the Department.
PSCI 3907 [0.5 credit]
One-Term Political Science Internship
Internship gives students the opportunity to work with an organization whose focus relates to politics over one academic term. Students complete a research paper related to their internship. Students must identify an organization to host the internship and a faculty member to provide supervision.
Includes: Experiential Learning Activity
Precludes additional credit for GPOL 3100, PSCI 3906, Carleton/Leeds Parliamentary Exchange and the Washington Internship.
Prerequisite(s): third-year Honours Standing with a minimum Political Science CGPA of 9.0 or permission of the Department.

PSCI 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

PSCI 4001 [0.5 credit]
Topics in Canadian Government and Politics
A seminar focused on selected topics in Canadian government and politics.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4003 [0.5 credit]
Politics and the Media
The role of the mass media in the Canadian political system from a comparative perspective.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4005 [0.5 credit]
Canadian Federalism
The evolution and contemporary operation of the Canadian federal system; the social, political, economic, and structural features underlying its operational performance, resilience in crisis, and potential for adaptation.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, PSCI 2003 or PSCI 2101.
Also offered at the graduate level, with different requirements, as PSCI 5101, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4006 [0.5 credit]
Legislatures and Representation in Canada
The role of Parliament and of the individual M.P. in terms of policy making, party discipline, and differing conceptions of representation.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5006, for which additional credit is precluded.
Seminar three hours per week.

PSCI 4008 [0.5 credit]
National Security and Intelligence in the Modern State
The state's response to foreign espionage, alleged subversion, terrorism, and counterintelligence. Major focus on the Canadian experience, but with extensive use of materials chronicling the practices of KGB, CIA, BIS, ASIO, MOSSAD, etc.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4009 [0.5 credit]
Quebec Politics
Society, culture, economy and politics in Quebec. Special attention to the politically relevant changes since 1960 and the central place of Quebec within the Canadian federation.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4010 [0.5 credit]
Executive Power in Canadian Politics
Consideration of prime ministers, premiers, cabinet ministers and senior public service leadership in Canadian politics and government.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5010, for which additional credit is precluded.

PSCI 4103 [0.5 credit]
The Modern State
A survey of recent thinking about the state in western societies drawing on perspectives such as those of feminists, Marxists, Weberians, poststructuralists and others. Topics may include: the rise of the modern state, economic governance, the public sphere, citizenship, sovereignty and territoriality.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.
PSCI 4104 [0.5 credit]
Development in the Global South - Theory and Practice
Different theoretical approaches to the concept of development in the Global South and their relevance for selected countries in Latin America, Africa and Asia.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4105 [0.5 credit]
Selected Problems in Development in the Global South
Topics may include global issues of trade, finance and production, changing patterns of foreign aid, and the role of microfinance, mining, non-governmental organizations, migration, anti-poverty programs and activism in promoting development.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4107 [0.5 credit]
Political Participation in Canada
The causes and implications of political participation by individuals with special reference to Canada. Topics include citizen participation in campaign and party organizations, political protest movements, interest groups, and community associations.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2002, PSCI 2003, PSCI 2101, PSCI 2102, PSCI 2700, or (PSCI 2701 and PSCI 2702).
Seminar three hours a week.

PSCI 4109 [0.5 credit]
The Politics of the Canadian Charter of Rights and Freedoms
The genesis and impact of the Charter of Rights and Freedoms. Particular emphasis on the politics of aboriginal, language, and equality rights.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4203 [0.5 credit]
Southern Africa After Apartheid
The pathology of apartheid, the reasons for its end, and prospects for democratization and development in Southern Africa in the era of globalization.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5203, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4204 [0.5 credit]
Elections
The conduct and meaning of elections in contemporary states. Attention to the connection of elections to concepts of representation, policy mandates, and political parties, and to electoral systems and referendums.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, GPOL 2500, PSCI 2003, PSCI 2101, PSCI 2102, PSCI 2700, or (PSCI 2701 and PSCI 2702).
Also offered at the graduate level, with different requirements, as PSCI 5204, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4206 [0.5 credit]
Indigenous Politics of North America
Issues of governance regarding the original peoples of Canada, Mexico and the United States since the European invasion. Contemporary movements for restoration of cultural, political, socio-economic, land and self-governance rights, emphasizing domestic and international strategies.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, GPOL 2500, PSCI 2001, PSCI 2002, PSCI 2003, PSCI 2101, PSCI 2102, or PSCI 3205.
Also offered at the graduate level, with different requirements, as PSCI 5100, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4207 [0.5 credit]
Globalization, Adjustment and Democracy in Africa
The nature of global pressures in Africa, as states go through political and economic change.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5107, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4209 [0.5 credit]
Westminster Democracies: Parliaments, Parties and Elections
Examination of party and parliamentary democracy in the five principal Anglophone parliamentary democracies: Australia, Canada, Ireland, New Zealand and the United Kingdom. Consideration is given to the effects of different electoral systems and institutional arrangements on electoral politics, political participation, and party organization.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 2500, PSCI 2003, PSCI 2101, or PSCI 2102.
Seminar three hours a week.
PSCI 4210 [0.5 credit]  
**Political Identity through Graphic Novels**  
Examination of the sources and dynamics of political identity through the medium of graphic novels and graphic memoirs. Themes may include collective memory, genocide, prostitution, violent conflict, civil rights, race and ethnicity, revolution, Indigenous issues, mental health, and gender and sexuality.  
Prerequisite(s): fourth year standing or permission of the Department.  
Seminar three hours a week.

PSCI 4211 [0.5 credit]  
**Op-Ed Writing and Social Media as Political Engagement**  
The art and craft of political opinion writing and social-media engagement. An examination of contemporary online activism, interpersonal and collective online dynamics, and an imparting of the skills required for persuasive and well-researched op-ed writing.  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4302 [0.5 credit]  
**Political Thought in the Modern Muslim Middle East**  
Contemporary secular and religious responses to the challenges of modernity. Readings include writings of Arab, Turkish, and Iranian intellectuals.  
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of (PSCI 2301 and PSCI 2302) or PSCI 3311.  
Also offered at the graduate level, with different requirements, as PSCI 5305, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4303 [0.5 credit]  
**Governmentality and Politics**  
Examination of Foucault's concept of governmentality and work which has developed this idea, especially the relevance of governmentality for global political studies. Topics may include sovereignty, biopolitics, technopolitics, neoliberalism and citizenship.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year Honours standing or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5303 and SOCI 5407, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4308 [0.5 credit]  
**History of Political Enquiry**  
An examination of methods adopted by major thinkers in the history of political philosophy, amidst changing understandings of metaphysics and science. Thinkers to be considered may include Plato, Aristotle, Descartes, Bacon, Kant, Hegel, Nietzsche, and Heidegger, among others.  
Precludes additional credit for PSCI 4304 (no longer offered).  
Prerequisite(s): PSCI 2301 and PSCI 2302 or permission of the Department.  
Seminar three hours a week.

PSCI 4309 [0.5 credit]  
**Contemporary Approaches to Political Enquiry**  
An examination of contemporary critiques and developments in modern science and social science. Thinkers to be considered may include Gadamer, Strauss, Oakeshott, Voegelin, Polanyi, Feuerabend, Heidegger, Kojève, Schmitt, Foucault, and Derrida.  
Precludes additional credit for PSCI 4304 (no longer offered).  
Prerequisite(s): PSCI 2301 and PSCI 2302 or permission of the Department.  
Also offered at the graduate level, with different requirements, as PSCI 5309, for which additional credit is precluded.  
Seminar three hours a week.

PSCI 4311 [0.5 credit]  
**Political Theories of Democracy and Empire I**  
An exploration of how ancient and modern conceptions of empire differ and how the pursuit of empire abroad can undermine good government at home in political theories including Thucydides, Plato, Aristotle and Xenophon.  
Precludes additional credit for PSCI 4310 (no longer offered).  
Prerequisite(s): fourth-year Honours standing and (PSCI 2301 and PSCI 2302) or permission of the Department.  
Seminar three hours a week.

PSCI 4312 [0.5 credit]  
**Political Theories of Democracy and Empire II**  
An exploration of how ancient and modern conceptions of empire differ and how the pursuit of empire abroad can undermine good government at home in political theories including Machiavelli, Hobbes, Hegel, Tocqueville and Heidegger.  
Precludes additional credit for PSCI 4310 (no longer offered).  
Prerequisite(s): fourth-year Honours standing, (PSCI 2301 and PSCI 2302) and PSCI 4311 or permission of the Department.  
Seminar three hours a week.
PSCI 4316 [0.5 credit]
Contemporary Political Theory I
Focus on the main currents of political thought in late and post-modernity; the relation between classical and modern philosophy, tyranny and technology, existentialism and nihilism. Thinkers such as Strauss, Kojève, Nietzsche, Arendt, Heidegger and Schmitt may be read.
Precludes additional credit for PSCI 4305 (no longer offered).
Prerequisite(s): fourth-year Honours standing and (PSCI 2301 and PSCI 2302) or permission of the Department.
Seminar three hours a week.

PSCI 4317 [0.5 credit]
Contemporary Political Theory II
Continues and expands themes examined in PSCI 4316, and will include post-modernism, investigations of technology and globalization, terrorism and trans-humanism. Representative thinkers may include Derrida, Foucault, Deleuze, Bataille, Rosen, Voegelin, Habermas and Steiner.
Precludes additional credit for PSCI 4305 (no longer offered).
Prerequisite(s): fourth-year Honours standing; PSCI 2301, PSCI 2302 and PSCI 4316, or permission of the Department.
Seminar three hours a week.

PSCI 4318 [0.5 credit]
Concepts of Political Community I
Critical survey of concepts of political community, including the common good, justice, citizenship, leadership, democracy, and legitimacy, from ancient, modern, and contemporary political theory.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5308, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4319 [0.5 credit]
Concepts of Political Community II
A continued critical survey of concepts of political community, including the common good, justice, citizenship, statesmanship, democracy, and legitimacy, from ancient, modern, and contemporary political theory.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5309, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4400 [0.5 credit]
Socio-Technical Change and Public Policy Design
Joint implications of contemporary science, technology and demographics for the design of public policy. The main emphasis of the course will be general patterns of change and design relating to public policy.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4403 [0.5 credit]
Reproductive Rights Policy in North America
The interaction between social movements, legislatures and courts in formulating reproductive rights policy in Canada, the U.S. and Mexico.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5407, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4404 [0.5 credit]
The Design and Evolution of Public Institutions
An examination of the emergence, development and collapse of institutional collective action in a broad historical framework, with attention to probable future scenarios for change. Readings are taken from anthropology, economics, history and empirical political theory.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4407 [0.5 credit]
Public Policy: Content and Creation
The content and creation of public policy. Focus on the explanation, prediction and design of policy. Perspectives and examples are drawn from a variety of frameworks and from both Canadian and non-Canadian contexts.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2400, PSCI 2401, PSCI 3402, PSCI 3405, PSCI 3409 or PAPM 2000.
Seminar three hours a week.

PSCI 4408 [0.5 credit]
Public Affairs Management and Analysis
Theories and practice in the management of public affairs, including the environment and administration of the public sector, public opinion, and public communications.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminars three hours a week.
PSCI 4409 [0.5 credit]
Issues in Development Management
An examination of the application of organization theory to policy implementation and evaluation for developing and transitional systems, with an emphasis on the role of cultural differences and divergent value systems in development management.
Prerequisite(s): ECON 3508 and fourth-year standing in the B.P.A.P.M. program and registration in either the International Studies specialization or the Development Studies specialization or permission of the Department. Lectures or seminars three hours a week.

PSCI 4500 [0.5 credit]
Gender and Globalization
How globalization affects women's involvement in politics and how they organize to conceptualize and pursue gender justice in official politics; grass roots projects and cultural transformations; ideology; stand-alone movements; and mixed-sex movements like nationalism and democratization.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 2500, PSCI 3500, PSCI 3502. Seminars three hours a week.

PSCI 4501 [0.5 credit]
Politics of Identity in Europe and the Russian Area
The relationships between political transformation, identity-building, ethnicity, and gender politics in post-communist states, considered in comparison with select countries in Central and/or Western Europe.
Includes: Experiential Learning Activity
Also listed as EURR 4205.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2500, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705. Seminar three hours a week.

PSCI 4502 [0.5 credit]
Post-Soviet States and Societies
The relationship between social forces and state structures at both the national and local levels in the USSR and the post-communist states. Also listed as EURR 4002.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, GPOL 1000, GPOL 1500, PSCI 3208, PSCI 3209, PSCI 3704, PSCI 3705, or HIST 2600. Seminar three hours a week.

PSCI 4503 [0.5 credit]
Politics of Central Eurasia
Examination of the Caucasus and Central Asia, from Chechnya to former Soviet republics of the region, Afghanistan and Chinese Turkestan. Interests of Russia, China, and the United States. Emphasis on underdevelopment, oil and gas, terrorism, Islam.
Includes: Experiential Learning Activity
Also listed as EURR 4207.
Prerequisite(s): fourth-year Honours standing or permission of the Department. Seminar three hours a week.

PSCI 4504 [0.5 credit]
Politics of the Caucasus and Caspian Basin
Examination of the South Caucasus (Azerbaijan, Georgia, Armenia), the Russian-held North Caucasus, including Chechnya, and relations with Iran. Emphasis on state and society, oil and gas, transregional communications, interests of western powers, ethnic relations.
Includes: Experiential Learning Activity
Also listed as EURR 4209.
Prerequisite(s): fourth-year Honours standing or permission of the Department. Seminar three hours a week.

PSCI 4505 [0.5 credit]
Transitions to Democracy
A comparative analysis of processes of democratization. Diverse theoretical approaches to understanding the timing, causes, nature, and limitations of democratization. Examples from Europe and Russia, Latin America, Africa, and Asia.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, PSCI 2102, PSCI 3100, PSCI 3204, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705. Seminar three hours a week.

PSCI 4506 [0.5 credit]
Women and Politics in North America
The efforts of women in North America to increase their political role through public activism, including in party organizations, social movements, legislatures, courts and the executive branch of government.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department. Seminar three hours a week.

PSCI 4507 [0.5 credit]
The Balkans since 1989
Selected topics in Balkan politics and society since the collapse of communism in 1989, focusing on the democratic transition and the EU accession process. The legacies of communist rule, democratization and the many national questions that still exist in the region.
Also listed as EURR 4102.
Prerequisite(s): fourth year Honours standing or permission of the Department. Seminar three hours a week.
PSCI 4601 [0.5 credit]
Foreign Policies of Soviet Successor States
The foreign policies of the USSR and of Russia and selected other successor states, with special emphasis on the search for a new security order.
Also listed as EURR 4208.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, GPOL 1000, GPOL 1500, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 3107, PSCI 3208, PSCI 3209, PSCI 3600, PSCI 3603, PSCI 3703.
Seminar three hours a week.

PSCI 4603 [0.5 credit]
Analysis of International Political Economy
Various theoretical approaches to the study of the international political economy, with a focus on historical development and changing international structures.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.
Seminar three hours a week.

PSCI 4604 [0.5 credit]
Selected Problems in International Political Economy
Contemporary problems and issues in the international political economy, with particular attention given to advanced industrial countries.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.
Seminar three hours a week.

PSCI 4605 [0.5 credit]
Gender in International Relations
Analysis of feminist approaches to international relations. Substantive issues include the role of women in war and militarization, the gender dimensions of global political economy and gender issues in international development.
Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3500, PSCI 3303 or PSCI 3502.
Seminars three hours a week.

PSCI 4606 [0.5 credit]
American Foreign Policy
The sources, trends and conflicting interpretations of the international roles of the United States since World War II. Foreign policy machinery and processes assessed in terms of the relative importance of perceptions, ideology, self-interest, and domestic and foreign pressures.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2101, PSCI 2601, PSCI 2602, PSCI 3200, PSCI 3201, PSCI 3603, PSCI 3703.
Seminar three hours a week.

PSCI 4607 [0.5 credit]
Politics of North America
A seminar examining the evolving relationship between Canada, the United States and Mexico, including political, economic, social, environmental and defence aspects.
Includes: Experiential Learning Activity
Prerequisite(s): four-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4608 [0.5 credit]
European Integration and European Security
A seminar focusing on issues related to the formation of supra-national decision-making structures in Europe.
Includes: Experiential Learning Activity
Also listed as EURR 4104.
Prerequisite(s): four-year Honours standing or permission of the department.
Also offered at the graduate level, with different requirements, as PSCI 5608, and as EURR 4104/5104, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4609 [0.5 credit]
Selected Topics in European Integration Studies
A seminar focusing on selected topics related to European integration in the post-World War II period.
Also listed as EURR 4106.
Prerequisite(s): four-year Honours standing or permission of the department.
Seminar three hours a week.

PSCI 4610 [0.5 credit]
Politics of Migration Management
Seminar course that critically engages with innovative policies and instruments under the umbrella of 'migration management', and the proliferation of actors (states, international organizations, NGOs, private companies etc) involved in shaping and contributing to migration governance.
Prerequisite(s): fourth-year Honours standing or permission of the department.
Seminar three hours a week.

PSCI 4701 [0.5 credit]
Intermediate Polimetrics for Micro Data
Research designs and statistical techniques primarily used in analyzing survey data. Selected topics may vary from year to year. Students doing Honours papers based on micro data are advised to take this course.
Includes: Experiential Learning Activity
Prerequisite(s): PSCI 2700 or (PSCI 2701 and PSCI 2702), or permission of the Department.
Also offered at the graduate level, with different requirements, as PSCI 5701, for which additional credit is precluded.
Seminar three hours a week.
PSCI 4702 [0.5 credit]
Intermediate Research Methods for Applied Political Science
Applied methods for policy, politics and public affairs. Primarily quantitative, but may have qualitative elements. Includes: Experiential Learning Activity
Prerequisite(s): PSCI 2700 or (PSCI 2701 and PSCI 2702), or permission of the Department. Also offered at the graduate level, with different requirements, as PSCI 5702, for which additional credit is precluded.
Seminar three hours a week.

PSCI 4800 [0.5 credit]
Advanced International Relations Theory
Close reading and analysis of theoretical research in the academic discipline of International Relations; may include analysis of methodology, normative and critical theory, and key theoretical concepts such as anarchy, sovereignty, power, inequality, coloniality, security, gender.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2601, PSCI 2602, PSCI 3601, GPOL 3000.
Seminar three hours a week.

PSCI 4801 [0.5 credit]
Selected Problems in Global Politics
The application of international relations theories to specific global problems, both historical and contemporary. Selected issues may focus on one or more of conflict analysis, terrorism, the environment, migration, globalization and global civil society.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3107, PSCI 3600, PSCI 3601, PSCI 3603, and PSCI 3703.
Seminar three hours a week.

PSCI 4802 [0.5 credit]
International Politics of Africa
Focus on a particular theme related to the interactions of African states within the African subsystem and with other sectors in the international system.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3100 or PSCI 3101.
Seminar three hours a week.

PSCI 4803 [0.5 credit]
Foreign Policies of Major East Asian Powers
The foreign policies of the East Asian powers, with special attention to China and Japan; an analysis of the domestic sources of policy, capabilities, interests, decision-making processes and foreign relations.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 3102, or PSCI 3103.
Seminar three hours a week.

PSCI 4805 [0.5 credit]
Political Economy of Global Money and Finance
An exploration of the organization of the global monetary and financial system. Issues covered include the relationship between global finance and the state, the politics of world money, and the problems associated with regulating internationally-active financial institutions.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703. Also offered at the graduate level, with different requirements, as PSCI 5802, for which additional credit is precluded.
Seminars three hours a week.

PSCI 4806 [0.5 credit]
Transatlantic Security Issues
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2601, PSCI 3603, PSCI 3607, or GPOL 1500.
Seminars three hours a week.

PSCI 4807 [0.5 credit]
Politics of Citizenship and Migration
How flows of people -- migrants, temporary workers and refugees -- challenge state sovereignty, citizenship and belonging. Emphasis on role of the state, supranational structures and international organizations in migration and mobility.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4808 [0.5 credit]
Global Environmental Politics
Global politics of transboundary environmental issues such as biodiversity protection, climate change and desertification. The perspectives, actors, institutions and economic relationships affecting international policy responses to these issues.
Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2401, PSCI 2601, PSCI 2602, or PSCI 3801.
Seminar three hours a week.

PSCI 4809 [0.5 credit]
Honours Seminar on a Selected Topic in Political Science
A seminar on a selected contemporary topic in Political Science. Topic may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.
PSCI 4817 [0.5 credit]
International Politics of Forced Migration
The relationship between international politics and the causes, consequences and responses to forced migration, internal displacement and refugees. Seminars and case studies are used to examine the evolution of the global refugee regime and the challenges it faces today.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4819 [0.5 credit]
Latin America and the World
Latin America’s changing relations with states, international institutions and non-state actors in the Global North and South. Topics may include security, South-South cooperation, trade, investment and transnational migration and drug trafficking.
Also listed as LACS 4819.
Prerequisite(s): fourth year standing or permission from the Department.
Seminar three hours a week.

PSCI 4901 [0.5 credit]
Tutorial in a Selected Field
Tutorials or reading courses on selected topics in which seminars are not available.
Prerequisite(s): permission of the Department and agreement of an instructor.
Tutorial hours arranged.

PSCI 4902 [0.5 credit]
Tutorial in a Selected Field
Tutorials or reading courses on selected topics in which seminars are not available.
Prerequisite(s): permission of the Department and agreement of an instructor.
Tutorial hours arranged.

PSCI 4905 [0.5 credit]
Washington Center Seminar I
A seminar offered by The Washington Center, governed by Carleton regulations, and co-ordinated by Carleton’s Department of Political Science.
Includes: Experiential Learning Activity
Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210.
Seminar three hours a week.

PSCI 4906 [0.5 credit]
Washington Center Seminar II
A seminar offered by The Washington Center, governed by Carleton regulations, and co-ordinated by Carleton’s Department of Political Science.
Includes: Experiential Learning Activity
Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210.
Seminar three hours a week.

PSCI 4908 [1.0 credit]
Honours Research Essay
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Political Science with a Political Science CGPA of 9.00 or better, or permission of the Supervisor of Undergraduate Studies.

PSCI 4909 [1.0 credit]
Mémoire de recherche
Un travail de recherche dans le domaine de spécialisation d’un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.
Prerequisite(s): fourth-year Honours standing in the Political Science Mention : Français program.

Portuguese (PORT)
Portuguese (PORT) Courses
Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

PORT 1010 [0.5 credit]
First-Year Portuguese I
For students with no knowledge of Portuguese. Oral skills; basic reading and writing skills. Compulsory attendance.
Precludes additional credit for PORT 1110.
Four hours a week.

PORT 1020 [0.5 credit]
First-Year Portuguese II
Continuation of first-year Portuguese. Oral skills; basic reading and writing skills. Compulsory attendance.
Precludes additional credit for PORT 1110.
Prerequisite(s): grade of C or higher in PORT 1010 or permission of the School.
Four hours a week.
PORT 1110 [1.0 credit]
Intensive First-Year Portuguese
For students with no knowledge of Portuguese. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for PORT 1010 and PORT 1020.
Eight hours a week (one term).

PORT 2110 [1.0 credit]
Intensive Second-Year Portuguese
Further study of Portuguese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Prerequisite(s): grade of C or higher in PORT 1110 or PORT 1020, or permission of the School.
Eight hours a week (one term).

PORT 3110 [1.0 credit]
Intensive Third-Year Portuguese
Continuation of the study of Portuguese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in PORT 2110, or permission of the School.
Six hours a week (one term).

PORT 4110 [1.0 credit]
Intensive Fourth-Year Portuguese
Advanced spoken and written Portuguese with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Prerequisite(s): grade of C or higher in PORT 3110, or permission of the School.
Six hours a week (one term).

Psychology (PSYC)

PSYC 1001 [0.5 credit]
Introduction to Psychology I
A survey of topics associated with psychology's role as a natural science, including neuroscience, cognition, and learning.
Precludes additional credit for PSYC 1000.
Lecture three hours a week.

PSYC 1002 [0.5 credit]
Introduction to Psychology II
A survey of topics associated with psychology's role as a social science, including social psychology, personality, clinical psychology, and mental health.
Precludes additional credit for PSYC 1000.
Prerequisite(s): PSYC 1001.
Lecture three hours a week.

PSYC 2001 [0.5 credit]
Introduction to Research Methods in Psychology
A general introduction to research methodologies employed within contemporary psychology. Topics covered include research designs (experimental, quasi-experimental) and techniques (observations, surveys), basic descriptive statistics, and how to interpret and report research findings.
Precludes additional credit for NEUR 2001 and PSYC 2000 (no longer offered).
Prerequisite(s): PSYC 1001 and PSYC 1002.
Lecture three hours a week. May include laboratories.

PSYC 2002 [0.5 credit]
Introduction to Statistics in Psychology
A general introduction to statistical techniques employed within contemporary psychology. Topics include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square).
Precludes additional credit for NEUR 2002.
Prerequisite(s): PSYC 2001.
Lecture three hours a week. May include laboratories.

PSYC 2100 [0.5 credit]
Introduction to Social Psychology
Introduction to social psychology, including a survey of theories, issues, methods, and findings. This course will explore how social situations may influence people’s thoughts, feelings, and behaviours. Topics may include social cognition, self-knowledge, persuasion, interpersonal attraction, aggression, and prosocial behaviour.
Precludes additional credit for SOCI 2150.
Prerequisite(s): PSYC 1001 and PSYC 1002.
Lectures three hours a week.

PSYC 2301 [0.5 credit]
Introduction to Health Psychology
Introduction to health psychology, including a survey of theories, issues, methods, and findings. Using a multidisciplinary approach, topics may include the reciprocal interactions among physical health and illness, and psychological factors, including emotional well-being, coping and appraisal processes.
Precludes additional credit for PSYC 3406.
Prerequisite(s): PSYC 1001 and PSYC 1002.
Lectures three hours a week.

PSYC 2307 [0.5 credit]
Human Neuropsychology I
Introduction to study of brain-behaviour relationships, including a survey of theories, issues, methods, and findings. Topics may include basic anatomy and physiology of the human nervous system, including sensory and motor functions. Neural basis of language, perception, emotion, learning, memory, decision making and social cognition.
Prerequisite(s): PSYC 1001 and PSYC 1002.
Lectures three hours a week.
PSYC 2400 [0.5 credit]
Introduction to Forensic Psychology
Introduction to forensic psychology, including a survey of theories, issues, methods, and findings. Topics may include development of offending, eyewitness testimony, victim studies, risk assessment, offender rehabilitation, offender classification, and police studies. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2500 [0.5 credit]
Foundations of Developmental Psychology
Introduction to developmental psychology, including a survey of theories, issues, methods, and findings. Topics may include biological underpinnings and genetics, as well as selected aspects of language, cognitive, moral, emotional, and social development. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2600 [0.5 credit]
Introduction to the Study of Personality
Introduction to the study of personality, including a survey of theories, issues, methods, and findings. Explores the factors that contribute to people’s personality and influence how they interact with others. Topics may include traits, motives, the self, physiology, the unconscious, relationships, stress and coping. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2700 [0.5 credit]
Introduction to Cognitive Psychology
Introduction to cognitive processes, including a survey of theories, issues, methods and findings. Topics may include pattern recognition, attention, imagery, learning (animal and human), memory, language, and thinking. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2801 [0.5 credit]
Organizational Psychology I
Introduction to the study of organizational psychology, including a survey of theories, issues, methods, and findings. Examines individual and group behaviour in organizational settings. Topics may include understanding work-related attitudes, behaviour, motivation, and stress, personnel selection, personality in the workplace, organizational justice, and leadership. Precludes additional credit for PSYC 3105, PSYC 3803 (no longer offered). Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours per week.

PSYC 3000 [1.0 credit]
Design and Analysis in Psychological Research
Techniques in data analysis, probability, sampling distributions, and procedures of estimation. Topics include classical, Bayesian, and distribution free approaches to hypothesis testing, linear regression and curve fitting, and analysis of variance methods in experimental design. Techniques are applied with appropriate statistical software (e.g., SPSS, Excel). Includes: Experiential Learning Activity
Prerequisite(s): third-year standing, PSYC 2001, and PSYC 2002. Lectures and tutorial four hours a week.

PSYC 3001 [0.5 credit]
Psychological Testing
An introduction to theory and issues pertaining to psychological tests. Topics include the creation, assessment, scoring, and interpretation of results across different testing formats (questionnaires, surveys, structured interviews, performance-based measurements). Classical and modern techniques will be incorporated. Students will apply psychological testing theory through assignments. Prerequisite(s): PSYC 2001 and PSYC 2002. Lectures three hours a week.

PSYC 3100 [1.0 credit]
Social Psychology (Honours Seminar)
An introduction to theory and research in social psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis. Includes: Experiential Learning Activity
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2100, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department. Seminars and laboratories six hours a week.

PSYC 3104 [0.5 credit]
Intergroup Relations: The Psychology of Conflict and Violence
In-depth coverage of the social psychology of relations within and between large societal groups. Topics may include social identity, stereotyping, prejudice, and intergroup emotions, with emphasis on their role in promoting conflict and paths to pro-social intergroup relations. Also listed as SOWK 3103. Precludes additional credit for PSYC 3103 (no longer offered). Prerequisite(s): PSYC 2100. Lectures three hours per week.
**PSYC 3106 [0.5 credit]**  
**Close Relationships**  
A consideration of relationship science, with a focus on social psychological theory and empirical approaches to the study of close relationships such as dating and marital relationships, and friendships. Topics may include relationship initiation, relationship maintenance, and coping with the dissolution of relationships.  
Prerequisite(s): PSYC 2100.  
Lectures three hours per week.

**PSYC 3300 [1.0 credit]**  
**Health (Honours Seminar)**  
An applied introduction to theory and research in health psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.  
Includes: Experiential Learning Activity  
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2301, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.  
Seminars and laboratories six hours a week.

**PSYC 3301 [0.5 credit]**  
**Sport and Performance Psychology**  
How psychological processes influence outcomes across sport and performance environments. Topics may include self-confidence, goal-setting, arousal regulation, imagery, group dynamics, burnout, injury recovery, and how person and situational factors affect the pursuit of excellence.  
Prerequisite(s): one of PSYC 2100, PSYC 2301, PSYC 2500, PSYC 2600.  
Lectures three hours a week.

**PSYC 3302 [0.5 credit]**  
**Positive Psychology**  
A review of theoretical, historical, and empirical scholarship in positive psychology. Drawing widely across traditional sub-disciplines, content focuses on human strengths, well-being, resilience, and virtue to understand internal, external, and developmental contributors to health and happiness.  
Prerequisite(s): one of PSYC 2100, PSYC 2301, PSYC 2500, PSYC 2600.  
Lectures three hours a week.

**PSYC 3307 [0.5 credit]**  
**Human Neuropsychology II**  
Cortical metabolism and research methods for assessment of cortical function, neuropsychological testing in the context of neurological, psychiatric and cognitive disorders caused by nervous system damage or genetic anomaly.  
Precludes additional credit for PSYC 3207 (no longer offered).  
Prerequisite(s): PSYC 2307.  
Lectures three hours a week.

**PSYC 3400 [1.0 credit]**  
**Forensic Psychology (Honours Seminar)**  
An applied introduction to theory and research in forensic psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.  
Includes: Experiential Learning Activity  
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2400, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.  
Seminars and laboratories six hours a week.

**PSYC 3402 [0.5 credit]**  
**Criminal Behaviour**  
A review of theoretical and empirical research in the study of criminal behaviour. Examination of offender assessment and classification, prevalence and types of offenders, and effectiveness of offender treatment including understanding specific populations of offenders such as Indigenous offenders, women offenders and violent offenders.  
Prerequisite(s): PSYC 2400.  
Lectures three hours a week.

**PSYC 3403 [0.5 credit]**  
**Addiction**  
Neurobiological and social bases of drug and behavioural addictions. Contemporary theoretical approaches to addiction; approaches to current prevention and treatment.  
Prerequisite(s): one of PSYC 2301, PSYC 2307, PSYC 2400.  
Lectures three hours a week.

**PSYC 3404 [0.5 credit]**  
**Police Psychology**  
Critical examination of theory and empirical research in the area of police psychology. Topics covered may include police culture, police selection, police suicide, police personality, stress debriefing, fitness evaluations, police training, crisis negotiations, and investigative techniques.  
Precludes additional credit for PSYC 4402 (no longer offered).  
Prerequisite(s): PSYC 2400.  
Lectures three hours per week.

**PSYC 3405 [0.5 credit]**  
**Psychology of Motivation and Emotion**  
This course will explore motivational and emotional factors involved in human behaviour emphasizing various perspectives, theories, and research pertaining to physiological, cognitive, and social needs. Topics may include what factors motivates people, how motivation changes over time, and how one person can motivate another individual.  
Prerequisite(s): PSYC 1001 and PSYC 1002.  
Lectures three hours a week.
PSYC 3500 [1.0 credit]  
**Developmental Psychology (Honours Seminar)**  
An introduction to theory and research in developmental psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.  
Includes: Experiential Learning Activity  
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2500, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.  
Seminars and laboratories six hours a week.

PSYC 3505 [0.5 credit]  
**Exceptional Children**  
An overview of childhood exceptionalities including intellectual differences, communication disorders, sensory and physical impairments, development and behavioural problems.  
Prerequisite(s): PSYC 2500.  
Lectures three hours a week.

PSYC 3506 [0.5 credit]  
**Cognitive Development**  
Human cognitive development is examined with a focus on memory, thinking and language through the life span. Topics may include perceptual and language development, emergent literacy, development of strategies and development of reading and arithmetic skills.  
Prerequisite(s): PSYC 2500 or PSYC 2700.  
Lectures three hours a week.

PSYC 3507 [0.5 credit]  
**Social Development**  
Development of the individual with a focus on social cognition and social behaviour. Topics may include the role of temperament in development, parental roles, siblings and peers in social/emotional development, development of prosocial and aggressive behaviour, moral development and development of self and other understanding.  
Prerequisite(s): PSYC 2500.  
Lectures three hours a week.

PSYC 3508 [0.5 credit]  
**Child Language**  
Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.  
Includes: Experiential Learning Activity  
Also listed as LING 3603.  
Precludes additional credit for LALS 2603 (no longer offered).  
Prerequisite(s): LALS 1000 or LALS 1001 or LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.  
Lectures three hours per week.

PSYC 3509 [0.5 credit]  
**Adolescence and Emerging Adulthood**  
The physical, cognitive, social and moral development of adolescents and emerging adults in multiple contexts including family, peers, media and culture. Major theories and contemporary issues and concerns.  
Prerequisite(s): PSYC 2500.  
Lectures three hours a week.

PSYC 3600 [1.0 credit]  
**Personality (Honours Seminar)**  
An introduction to theory and research in personality psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.  
Includes: Experiential Learning Activity  
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2600, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.  
Seminars and laboratories six hours a week.

PSYC 3603 [0.5 credit]  
**Psychology of Women**  
An examination of theories and research regarding the similarities and differences in women's and men's psychological processes. Psychological issues relevant to women (e.g., women's health concerns, women's sexuality, violence toward women and children) will be examined as well as feminist and traditional research methods.  
Prerequisite(s): one of PSYC 2100, PSYC 2500, PSYC 2600.  
Lectures three hours a week.

PSYC 3604 [0.5 credit]  
**Clinical Psychology and Mental Illness**  
History of the concept of mental illness. Theory and selected research dealing with the nature and etiology of mental illness.  
Prerequisite(s): PSYC 2301, PSYC 2500 or PSYC 2600.  
Lectures three hours a week.

PSYC 3700 [1.0 credit]  
**Cognition (Honours Seminar)**  
An introduction to theory and research in cognitive psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.  
Includes: Experiential Learning Activity  
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2700, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.  
Seminars and laboratories six hours a week.
PSYC 3702 [0.5 credit]
Perception
Introduction to theory, research methods and principles associated with the study of perceptual processes. Examples of how perceptual principles can be applied to solve problems in communications, transportation, medicine, industrial design, manufacturing, marketing, food and beverage industries (flavoring, blending, and scenting, etc.). Precludes additional credit for NEUR 3202.
Prerequisite(s): PSYC 1001 and PSYC 1002.
Lectures three hours a week.

PSYC 3709 [0.5 credit]
Language Processing and the Brain
Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.
Includes: Experiential Learning Activity
Also listed as LING 3601.
Precludes additional credit for LALS 2601 and LALS 3601 (no longer offered).
Prerequisite(s): LALS 1000 or LALS 1001 or LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.
Lectures three hours a week.

PSYC 3710 [0.5 credit]
Introduction to Human Factors
Theoretical foundation, philosophy and practical application of techniques for analyzing from a psychological perspective how people interact with designed environments. A major goal is to determine how these environments should be designed to suit human capabilities.
Precludes additional credit for PSYC 2800 (no longer offered).
Prerequisite(s): PSYC 2001 and PSYC 2002.
Lecture three hours a week.

PSYC 3801 [0.5 credit]
Organizational Psychology II
Advanced coverage of the current theory and practices in Organizational Psychology. Selected topics may include workplace socialization, job attitudes, deviant work behaviours, leadership, teams and group dynamics, work-related stress and health, and organizational change and development.
Prerequisite(s): PSYC 2801.
Lectures three hours per week.

PSYC 3802 [0.5 credit]
Transition to Career
Within the context of an active learning environment, examines traditional and current models in career psychology. Topics may include the concepts of change and transitions, self-assessments, vocational psychology, and workplace onboarding. Students will examine their personal and professional transition from university to the work world.
Includes: Experiential Learning Activity
Prerequisite(s): third or fourth year standing in Psychology.
Lectures three hours a week.

PSYC 3805 [1.0 credit]
Organizational Psychology (Honours Seminar)
An introduction to theory and research in organizational psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.
Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2801, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.
Seminars and laboratories six hours a week.

PSYC 3901 [0.5 credit]
Practicum in Psychology
Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues.
Includes: Experiential Learning Activity
Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3902 [0.5 credit]
Practicum in Psychology
Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues.
Includes: Experiential Learning Activity
Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.
The Academic Year (Graduate and Undergraduate Studies)

PSYC 3905 [1.0 credit]
Practicum in Psychology
Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues. Includes: Experiential Learning Activity
Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3999 [0.0 credit]
Co-operative Work Term
Co-operative Work Term.
Includes: Experiential Learning Activity
Work Term.

PSYC 4001 [0.5 credit]
Special Topics in Psychology
Each section of PSYC 4001 deals with a different topic. Topics change yearly. Students may register in more than one section of PSYC 4001 but can register in each section only once.
Prerequisite(s): each section will have its own.
Lectures or seminars three hours a week.

PSYC 4003 [0.5 credit]
Origins of Modern Psychology
An overview of the evolution of psychology, with an emphasis on psychology as a specialized area of knowledge and practice in the late-nineteenth and twentieth centuries. Topics covered may include the history of a particular period, content area, or cultural context.
Precludes additional credit for PSYC 2003.
Prerequisite(s): third or fourth-year standing in a Psychology Honours program.
Lectures or seminars three hours per week.

PSYC 4100 [0.5 credit]
Advanced Topics in Social Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in Social psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2100.
Lectures or seminars three hours a week.

PSYC 4301 [0.5 credit]
Advanced Topics in Health Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in health psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2301.
Lectures or seminars three hours a week.

PSYC 4330 [1.0 credit]
Community Mental Health and Well-Being
An examination of theory, research, and the practice of approaches to support peers and their well-being. Students will apply the concepts learned during the seminars in field placements.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Psychology, Mental Health and Well-Being Stream.
Seminar three hours per week.

PSYC 4333 [0.5 credit]
Clinical Psychology: Assessment and Intervention
An advanced seminar on clinical psychology and mental health. Students will learn about frequently used treatment modalities and common factors across treatments. Research methodology and recent advances dealing with a variety of common mental disorders will also be reviewed and discussed.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Psychology and PSYC 3604.
Lecture or seminar three hours per week.

PSYC 4400 [0.5 credit]
Advanced Topics in Forensic Psychology
In-depth exploration of theoretical and empirical issues related to selected topics in Forensic psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2400.
Lectures or seminars three hours per week.

PSYC 4403 [0.5 credit]
Female Offenders
Feminist and social learning approaches to the assessment and treatment of female offenders. Theories and research relevant to selected patterns of law breaking and selected female offender types.
Prerequisite(s): third- or fourth-year standing and PSYC 3402.
Lectures or seminars three hours a week.

PSYC 4404 [0.5 credit]
Sex Offenders
Theory and research concerning the etiology and maintenance of sexual offending; assessment, treatment, and management of sex offenders. Introduction to fundamental issues and controversies in the area.
Prerequisite(s): third- or fourth-year standing, PSYC 2400, and PSYC 3402.
Lectures or seminars three hours a week.
PSYC 4410 [0.5 credit]
**Children and the Law**
This course will explore psychological factors affecting child witnesses and victims as they interact within the criminal justice system. The course will survey the intersection of psychology and law within the areas of eyewitness memory, police procedures, and the criminal justice system. 
Prerequisite(s): fourth-year standing, and PSYC 2400 or PSYC 2500.
Lectures or seminars three hours a week.

PSYC 4500 [0.5 credit]
**Advanced Topics in Developmental Psychology**
In-depth exploration of theoretical and empirical issues related to selected topics in developmental psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing, and one of PSYC 3500, PSYC 3505, PSYC 3506, PSYC 3507.
Lectures or seminars three hours a week.

PSYC 4600 [0.5 credit]
**Advanced Topics in Personality Psychology**
In-depth exploration of theoretical and empirical issues related to selected topics in personality psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2600.
Lectures or seminars three hours a week.

PSYC 4700 [0.5 credit]
**Advanced Topics in Cognitive Psychology**
In-depth exploration of theoretical and empirical issues related to selected topics in cognitive psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing, and PSYC 2700.
Lectures or seminars three hours a week.

PSYC 4801 [0.5 credit]
**Occupational Health Psychology**
The application of psychological knowledge to enhance employee physical and mental health, safety and well-being, and more broadly, to enrich organizational life. Students will be able to learn and analyze critically the relevant methodological, theoretical, and empirical Occupational Health Psychology literature.
Prerequisite(s): third or fourth-year standing and one of PSYC 2100, PSYC 2301, PSYC 2801.
Lectures or seminars three hours a week.

PSYC 4802 [0.5 credit]
**Advanced Topics in Organizational Psychology**
In-depth exploration of theoretical and empirical issues related to selected topics in organizational psychology. The specific content for this course will vary from year to year.
Prerequisite(s): fourth-year standing and PSYC 2801.
Lectures or seminars three hours a week.

PSYC 4900 [0.5 credit]
**Independent Study**
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally, students may not include more than one credit of independent study in their total program.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in Psychology and permission of the Department. 
Mentored work.

PSYC 4902 [0.5 credit]
**Independent Study**
A reading or research course for selected students who wish to investigate a particular topic of interest. Normally, students may not include more than one credit of independent study in their total program.
Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in Psychology and permission of the Department. 
Mentored work.

PSYC 4907 [1.0 credit]
**Thesis for B.Sc. with Honours in Psychology**
A thesis supervised by a Faculty Adviser. Students review the appropriate literature, contribute to the design of a study or experiment, conduct data analyses, and produce an APA style written report. Students may also present a research poster at the Psychology Undergraduate Research Event.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 4906 (no longer offered).
Prerequisite(s): fourth-year Honours standing in Psychology with a major CGPA of 10.0, PSYC 3000; one of PSYC 3100, PSYC 3300, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700 or PSYC 3805; and permission of the Department. 
Lectures during the fall term given by the course instructor and mentored work arranged by the Faculty Adviser.

PSYC 4908 [1.0 credit]
**Thesis for B.A. with Honours in Psychology**
A thesis supervised by a Faculty Adviser. Students review the appropriate literature, contribute to the design of a study or experiment, conduct data analyses, and produce an APA style written report. Students may also present a research poster at the Psychology Undergraduate Research Event.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 4905 (no longer offered).
Prerequisite(s): fourth-year Honours standing in Psychology with a major CGPA of 10.0, PSYC 3000; one of PSYC 3100, PSYC 3300, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700, PSYC 3805; and permission of the Department. 
Lectures during the fall term given by the course instructor and mentored work arranged by the Faculty Adviser.
PSYC 4909 [1.0 credit]
Project for B.Sc. with Honours in Psychology
Within an active learning environment, students develop oral presentations and written documents that may include annotated bibliographies, essays, and presentation slides. They must also present a research poster at the Psychology Undergraduate Research Event. Students select an area of psychological research of interest to them.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 4906 (no longer offered), PSYC 4907, and PSYC 4908.
Prerequisite(s): fourth-year standing in B.Sc. (Honours) in Psychology, and PSYC 3000.
Seminars three hours a week.

PSYC 4910 [1.0 credit]
Project for B.A. with Honours in Psychology
Within an active learning environment, students develop oral presentations and written documents that may include annotated bibliographies, essays, and presentation slides. They must also present a research poster at the Psychology Undergraduate Research Event. Students select an area of psychological research of interest to them.
Includes: Experiential Learning Activity
Precludes additional credit for PSYC 4905 (no longer offered), PSYC 4907 and PSYC 4908.
Prerequisite(s): fourth-year standing in B.A (Honours) in Psychology, and PSYC 3000.
Seminars three hours a week.

Public Administration (PADM)

Public Administration (PADM) Courses

PADM 1501 [0.5 credit]
Public Administration in Nunavut
An introduction to the theoretical, constitutional and practical basis of public administration in Nunavut. Normally offered in Nunavut.
Prerequisite(s): enrolment in the Certificate for Nunavut Public Service Studies.

PADM 1502 [0.5 credit]
Management of Federal-Territorial Relations
Introduction to managing the relationship between the territorial and federal governments, with examples drawn from Nunavut, the Northwest Territories and Yukon practices. Normally offered in Nunavut.
Prerequisite(s): enrolment in the Certificate for Nunavut Public Service Studies and successful completion of PSCI 1002 and PADM 1501.

PADM 3105 [0.5 credit]
Management in the Public Sector
Consideration of constraints and opportunities of public-sector management, including government at all levels and para-statal organizations. Topics may include the accountability regimes, features of the human resource management context, administration of information and material resources, responsibilities and relationships of managers towards citizens.
Prerequisite(s): third-year standing in the B.P.A.P.M. program.
Seminar three hours a week.

PADM 4213 [0.5 credit]
Gender and Public Policy
Policy and policy-making as they pertain to gender relations within the state and in society. The negative and positive effects of public policy on gender relations in the family and the labour market.
Precludes additional credit for PADM 4701, PADM 5701.
Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.
Also offered at the graduate level, with different requirements, as PADM 5213, for which additional credit is precluded.

PADM 4214 [0.5 credit]
Budgetary Policy in the Public Sector
Selected aspects of the expenditure and revenue budget and budgetary process at all levels of government. Critical review of actual budgets and budgetary processes.
Precludes additional credit for PADM 5103.
Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.
Also offered at the graduate level, with different requirements, as PADM 5214, for which additional credit is precluded.

PADM 4220 [0.5 credit]
Regulation and Public Policy
Political, economic, legal, and organizational theories of regulation in the Canadian and comparative context. Processes and consequences of regulatory practice in selected Canadian public policy fields.
Precludes additional credit for PADM 5002.
Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.
Also offered at the graduate level, with different requirements, as PADM 5220, for which additional credit is precluded.
PADM 4221 [0.5 credit]
Health Policy in Canada
Canadian health policies and programs set in a comparative political-economic and institutional context. Precludes additional credit for PADM 4009, PADM 5009. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Also offered at the graduate level, with different requirements, as PADM 5221, for which additional credit is precluded.

PADM 4224 [0.5 credit]
Aboriginal Policy
Canadian policies and programs on aboriginal peoples and aboriginal peoples' own policies as nations set in a comparative political-economic and institutional context. Precludes additional credit for PADM 4806, PADM 5806. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Also offered at the graduate level, with different requirements, as PADM 5224, for which additional credit is precluded.

PADM 4225 [0.5 credit]
Trade Policy
Canadian multilateral and regional trade policies and programs set in a comparative political-economic and institutional context. Precludes additional credit for PADM 4807, PADM 5807. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Also offered at the graduate level, with different requirements, as PADM 5225, for which additional credit is precluded.

PADM 4226 [0.5 credit]
Tax Policy
Canadian tax policies set in a comparative political-economic and institutional context. Precludes additional credit for PADM 4509, PADM 5509. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Also offered at the graduate level, with different requirements, as PADM 5226, for which additional credit is precluded.

PADM 4227 [0.5 credit]
Education Policy
Canadian policies and programs in education set in a comparative political-economic and institutional context. Precludes additional credit for PADM 4809, PADM 5809. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Also offered at the graduate level, with different requirements, as PADM 5227, for which additional credit is precluded.

PADM 4228 [0.5 credit]
Social Policy
The nature and historical development of social programs in capitalist countries, with particular focus on Canada. The course will concentrate on developing a critical understanding of the social forces shaping these programs. Precludes additional credit for PADM 4604, PADM 5604. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Also offered at the graduate level, with different requirements, as PADM 5228, for which additional credit is precluded.

PADM 4230 [0.5 credit]
Ethics for Public Policy
The development and application of ethical theories to examine not simply what governments could do, but what they should do on the basis of consequences, principles, or motivations. Applications could include policies affecting climate change, inequality, end of life, privacy, use of force. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Also offered at the graduate level, with different requirements, as PADM 5230, for which additional credit is precluded. Seminar three hours a week.

PADM 4320 [0.5 credit]
Ethics for Public Policy
Development and application of ethical theories to examine what governments should do, taking into account the outcomes, principles, or motivations of public policies and policy-making. Applications could include policies affecting climate change, income inequality, end of life, privacy, restitution, use of force. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Also offered at the graduate level, with different requirements, as PADM 5320, for which additional credit is precluded.
PADM 4611 [0.5 credit]
Science and Technology Policies
Theory and practice regarding governmental policies for science and technology, and the use of scientific knowledge in the policy and regulatory processes of government. Concerns regarding the ethical issues and the transparency of science in government.
Precludes additional credit for PADM 5400.
Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.
Also offered at the graduate level, with different requirements, as PADM 5611, for which additional credit is precluded.

PADM 4612 [0.5 credit]
Industrial Policy, Innovation and Sustainable Production
An examination of sustainable production theory and key drivers, barriers and opportunities influencing innovation in industrial systems and processes. The relationship of public policies and industry practices are explored in a number of sectors.
Precludes additional credit for PADM 4600, PADM 5600.
Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.
Also offered at the graduate level, with different requirements, as PADM 5612, for which additional credit is precluded.

PADM 4615 [0.5 credit]
Politics and Policy of Energy in Canada
The dilemmas associated with energy policy in Canada. Economic, social and environmental dimensions of energy decision making; Canadian issues within the contexts of a changing international scene and long term energy transitions.
Precludes additional credit for PADM 5515.
Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.
Also offered at the graduate level, with different requirements, as PADM 5615, for which additional credit is precluded.

PADM 4616 [0.5 credit]
Environmental Policy
Canadian environmental policies and programs in a comparative political-economic and institutional context. Precludes additional credit for PADM 4008, PADM 5008.
Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.
Also offered at the graduate level, with different requirements, as PADM 5616, for which additional credit is precluded.

PADM 4817 [0.5 credit]
Health Policy in Developing Countries
Debates regarding health policy in the developing world, in the context of the global health sector reform movement, trade and intellectual property regimes, and strategies of corporate and NGO actors. Issues of gender, class and the determinants of health.
Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.
Also offered at the graduate level, with different requirements, as IDMG 5617/PADM 5817, for which additional credit is precluded.

Public Affairs and Policy Management (PAPM)

PAPM 1001 [0.5 credit]
Policy: Analysis, Implementation, and Evaluation
The processes of policy-making, implementation and evaluation. Forces that shape policy deliberations and alternative tools for managing policy action and policy evaluation. Theoretical approaches to understanding the origins of policy, and methods by which programs are designed and assessed.
Includes: Experiential Learning Activity
Precludes additional credit for PAPM 2000.
Lecture two hours a week, discussion one hour per week.

PAPM 2001 [0.5 credit]
Foundations of Public Policy: Political Thought
Theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in political philosophy and theory, students consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs, public interest.
Precludes additional credit for PAPM 1000.
Lecture two hours a week, discussion one hour a week.

PAPM 2002 [0.5 credit]
Foundations of Public Policy: Economic Thought
Theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in economic philosophy and theory, students consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs, public interest.
Precludes additional credit for PAPM 1000.
Lecture two hours a week, discussion one hour a week.
PAPM 3000 [0.5 credit]  
**Policy Research**  
An examination of the research strategies and techniques relevant to policy analysis and evaluation. Using the case study method, the role of research and research organizations in the policy process is discussed. The issue of ethical dilemmas in policy research is also considered.  
Includes: Experiential Learning Activity  
Prerequisite(s): PSCI 2701 and PSCI 2702, or COMM 2001, or ECON 2201 and ECON 2202 and Good Standing in the Bachelor of Public Affairs and Policy Management program.  
Lecture and discussion three hours a week.

PAPM 3999 [0.0 credit]  
**Co-operative Work Term**  
Includes: Experiential Learning Activity

PAPM 4000 [0.5 credit]  
**Capstone Seminar in Public Affairs and Policy Management**  
Policy workshop focusing on the application of public affairs analysis to develop problem solving and research skills. Seminar is policy-focused and organized by area of Specialization in the program. Students, working in small groups, examine concrete policy problems, actual or simulated, in specific institutional contexts.  
Includes: Experiential Learning Activity  
Prerequisite(s): PAPM 3000 and Good Standing in the Bachelor of Public Affairs and Policy Management program.  
Seminar three hours a week.

PAPM 4099 [0.5 credit]  
**Policy Seminar**  
Students address a specific policy problem or problems, in interaction with local, national or international policy experts or practitioners. Emphasis on policy analysis, research, and communication skills.  
Includes: Experiential Learning Activity  
Seminar three hours per week.

PAPM 4100 [0.5 credit]  
**Special Topics in Public Affairs and Policy Management**  
Analysis of selected issues in public affairs and policy management not ordinarily treated in the regular course program. The choice of topics will vary from year to year. Students should consult with the College regarding the topic offered.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in the B.P.A.P.M. program or permission of the Kroeger College.  
Seminar three hours per week.

PAPM 4908 [1.0 credit]  
**Honours Research Essay**  
Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year standing in the Bachelor of Public Affairs and Policy Management program with a Major CGPA or 9.0 or better, or permission of the Director of the Public Affairs and Policy Management program.

**Religion (RELI)**

**Religion (RELI) Courses**

Language courses RELI 1010 [1.0] Elementary Language Tutorial, RELI 2010 [1.0] Intermediate Language Tutorial and RELI 3010 [1.0] Advanced Language Tutorial are intended for students specializing in a particular religious tradition. They are offered according to the availability of members of the Discipline. Courses taken at the 2000-level or above will be mainly independent study under the supervision of a member of the Discipline. Students interested in taking these courses should consult the Coordinator.

RELI 1010 [1.0 credit]  
**Elementary Language Tutorial**  
Elementary study of the language required for studying a religious tradition.  
Precludes additional credit for RELI 1902 (no longer offered).  
Prerequisite(s): Major/Minor in Religion or permission of the department.  
Tutorial two hours a week.

RELI 1710 [0.5 credit]  
**Judaism, Christianity, Islam**  
A survey of the history, beliefs and practices of these major religious traditions.  
Precludes additional credit for RELI 1715, RELI 1716.  
Lecture three hours a week.

RELI 1712 [0.5 credit]  
**Religions of South and East Asia**  
A survey of the history, beliefs, and practices of South and East Asian religious traditions, including Hinduism, Buddhism, Jainism, Sikhism, Daoism, Confucianism, and Shinto.  
Precludes additional credit for RELI 1715, RELI 1716.  
Lecture three hours per week.
RELI 1731 [0.5 credit]  
Varieties of Religious Experience  
The variety of religious experiences and their interpretations: myth, literature, art and religious doctrine. Topics include time, self, the other, journey and wisdom. Examples ranging from shamanistic experience to the abstractions of Buddhist philosophy. Precludes additional credit for RELI 1205, RELI 1206, RELI 1402, and RELI 2002. Prerequisite(s): restricted to students registered in the Bachelor of Humanities & Religion program. Lecture three hours a week.

RELI 1741 [0.5 credit]  
Global Religions: Identity and Community  
An introduction to major issues in the study of religion in global contexts, drawing on historical and contemporary examples. Lecture three hours a week.

RELI 2010 [1.0 credit]  
Intermediate Language Tutorial  
Intermediate study of the language required for studying a religious tradition. Restricted to students registered in a Religion program. Precludes additional credit for RELI 2902 (no longer offered). Prerequisite(s): RELI 1902 or RELI 1010 or permission of the department. Tutorial two hours a week.

RELI 2110 [0.5 credit]  
Judaism  
The history of Judaism and the Jewish people from the Second Temple until the present day. The organization, basic beliefs, social and ethical practices of the Jews and Judaism. Precludes additional credit for RELI 1008 and RELI 2508. Lecture three hours a week.

RELI 2121 [0.5 credit]  
Hebrew Bible  
Introduces the Hebrew Bible within historical and religious frameworks. All texts are in English. Precludes additional credit for RELI 3505C taught in 2007-2008. Prerequisite(s): RELI 1710 or RELI 1000 or RELI 2110 or RELI 2508 or permission of the department. Lecture three hours a week.

RELI 2200 [0.5 credit]  
Christianity  
An introduction to the history, beliefs, traditions, practices, and diversity of Christianity from its beginnings to the present day. Lecture three hours per week.

RELI 2220 [0.5 credit]  
Early Christianity  
Introduction to the critical study of the writings of the New Testament with discussion of their Hellenistic and Jewish background, the historical Jesus, Paul and his letters, and historical and sociological explanations for the rise of the early church and interpretation of its writings. Precludes additional credit for RELI 1003, RELI 1200 and RELI 2207. Lecture three hours a week.

RELI 2230 [0.5 credit]  
Global Christianity  
Survey of recent and current Christian movements around the world, both by region and thematically, with emphasis on institutions and networks that connect Christian communities across national boundaries. Special consideration is given to the cultural and political capacities of such Christian communities and networks. Lecture three hours a week.

RELI 2310 [0.5 credit]  
Islam  
The study of Muslim religious tradition and investigation of its organization, basic beliefs, social and ethical principles and practices. Precludes additional credit for RELI 1009 and RELI 2509. Lecture three hours a week.

RELI 2330 [0.5 credit]  
The Qur'an  
An examination of the Qur'an's content, form, style, central themes, canonization, and classical and contemporary interpretive traditions. Prerequisite(s): second-year standing. Lecture three hours a week.

RELI 2350 [0.5 credit]  
Classical Islamic Thought  
A survey of the development of the central ideas and schools of Islamic theology and philosophy from the eighth century to the end of the seventeenth century CE. Precludes additional credit for RELI 3320 or RELI 3321. Lecture three hours a week.

RELI 2355 [0.5 credit]  
Islamic Ethics  
A survey of Muslim ethical writings on the pursuit of virtue and the good life, human nature, individual agency, and moral responsibility. Lecture three hours per week.

RELI 2410 [0.5 credit]  
Buddhism  
Basic beliefs and practices of the Buddhist tradition and a brief survey of its development and transformations in India, Sri Lanka, Southeast Asia, Tibet, China and Japan. Precludes additional credit for RELI 1006 and RELI 2106. Lecture three hours a week.
RELI 2510 [0.5 credit]  
Hinduism  
Basic beliefs, practices, and social structures of the Hindu tradition as reflected in Hindu scriptures, myths and symbols, and philosophical schools. Precludes additional credit for RELI 1005 and RELI 2005. Lecture three hours a week.

RELI 2515 [0.5 credit]  
Religion and Aesthetics in India  
Myths and symbols of the Indian tradition expressed in Hindu and Buddhist art. Hindi theories of beauty and the interface of the arts with the spiritual traditions of India. Precludes additional credit for RELI 2005 (if taken before 2007-2008) and RELI 2008. Prerequisite(s): second-year standing. Lecture three hours a week.

RELI 2535 [0.5 credit]  
Religion and Gender  
An exploration of women and religion in historical and contemporary contexts. Lecture three hours a week.

RELI 2600 [0.5 credit]  
Religions of China  
Survey of the origins, development, and diffusion of Chinese religious traditions, including Confucianism, Daoism, Chinese Buddhism and popular religion(s). Includes: Experiential Learning Activity. Lecture three hours a week.

RELI 2710 [1.0 credit]  
Maccabees to Muhammad  
The early history, literature and ideas of Judaism, Christianity and Islam from 200 BCE to 750 CE. Precludes additional credit for RELI 2208. Prerequisite(s): restricted to students in the Bachelor of Humanities & Religion program. Lecture three hours per week.

RELI 2711 [0.5 credit]  
Love and Its Myths  
Major devotional movements in Hinduism and Christianity, focusing on the love of the divine and philosophical accounts of these ideas over time. Lecture three hours a week.

RELI 2712 [0.5 credit]  
Religious Diversity of Canada  
An historical survey emphasizing the interactions of various religious traditions in Canada, including indigenous religions, Christian missionary and colonial traditions, immigrant and global diaspora religions. Precludes additional credit for RELI 2307 Section A (2007-2008). Lectures three hours a week.

RELI 2713 [0.5 credit]  
Mystical and Contemplative Traditions  
An historical and functional study of mystical experience in its religious context, relying on examples from selected traditions such as the Christian, Buddhist, Hindu, Jewish and Muslim. Precludes additional credit for RELI 2300. Lecture three hours a week.

RELI 2720 [0.5 credit]  
Indigenous Religions of Canada  
Religions of Inuit, First Nations and Métis peoples, past and present. Considerations include concepts of tradition, syncretism and “creative ritual.” Primary sources may include textual, visual and oral materials. Course may include fieldwork, as well as in-class presentations by community elders. Lecture three hours a week.

RELI 2732 [0.5 credit]  
Death and Afterlife  
The meaning of death and afterlife in some religious traditions and secular philosophies with emphasis on the Hindu teaching of the immortal soul; the Hebraic idea of collective survival; the Christian doctrine of resurrection of the body; the Buddhist conception of no-soul and nirvana. Precludes additional credit for RELI 2308. Lecture three hours a week.

RELI 2735 [0.5 credit]  
Greek Religion  
A study of religion in ancient Greece. Also listed as CLCV 2103. Precludes additional credit for CLCV 2102, RELI 2734, RELI 2102. Lecture three hours a week.

RELI 2736 [0.5 credit]  
Religion and Society  
Cross-cultural survey of religious institutions, focusing on theories and methodologies in the study of religion. Topics may include myth, totemism, cults, ritual, belief systems, altered states of consciousness, new religious and/or new age movements and the relationship of religion with other social institutions and processes. Includes: Experiential Learning Activity. Also listed as ANTH 2550. Lectures and workshop three hours a week.

RELI 2737 [0.5 credit]  
Roman Religion  
A study of religion in ancient Rome. Also listed as CLCV 2104. Precludes additional credit for CLCV 2102 and RELI 2734 and RELI 2102. Lecture three hours a week.
RELI 2738 [0.5 credit]
Philosophy of Religion
A study of philosophical issues arising from religion. Topics may include: arguments for and against the existence of God, religious experience, death and the afterlife, miracles, God and evil, the relationship between religion and science, and the relationship between religion and ethics.
Also listed as PHIL 2601.
Prerequisite(s): a course in philosophy or second-year standing.
Lecture three hours a week.

RELI 2741 [0.5 credit]
Big Questions in Religious Studies
In this Inquiry course, students will be introduced to a specific topic in Religious Studies (e.g., ritual, narrative, space) and develop a research project related to it. Focus on fostering intellectual curiosity and developing practical skills of reading, writing and research fundamentals.
Precludes additional credit for RELI 2002 (no longer offered), RELI 1205 (no longer offered), RELI 1402 (no longer offered), and RELI 1730 (no longer offered).
Seminar three hours per week.

RELI 2750 [0.5 credit]
Sikhism
An examination of the basic beliefs, practices, and social structures of the Sikh tradition as reflected in Sikh scriptures, history and philosophical schools.
Lecture three hours a week.

RELI 2800 [0.5 credit]
Indigenous Traditions
This course illuminates a recent category of “World Religions” by examining cases from all five continents, as well as in diaspora (e.g., Brazilian Candomblé, Roma/Sinti religion). Considerations include the study of minority religions, religion in oral cultures, myth & ritual studies, colonialism, globalization.
Precludes additional credit for RELI 1720 (no longer offered).
Lecture three hours per week.

RELI 2810 [0.5 credit]
Special Topics in Religion and Popular Culture
Examination of interactions between religion and popular culture in the form of music, film, video games, literature, and other media. Topic and focus will vary year to year; please check departmental website for information. May be repeated for credit when the topic changes.
Includes: Experiential Learning Activity
Lecture three hours per week.

RELI 2811 [0.5 credit]
Religions and the Environment
Attitudes in the major world religions to nature and the environment and recent responses by religious traditions to ecological degradation and crisis. Includes examination of religious sensibilities expressed in environmentalism.
Precludes additional credit for RELI 3710.
Lecture three hours per week.

RELI 2840 [0.5 credit]
Topics in Religion
Content of this course may vary from year to year. Please check departmental website for information on the topic.
Precludes additional credit for repeated topics.
Lecture three hours a week.

RELI 3000 [0.5 credit]
Religion and Public Life
This course examines some aspect of the intersection between religion(s) and public life, broadly construed, including social, economic, political, institutional aspects, either in the contemporary world or focused on a particular historical period.
Seminar three hours per week.

RELI 3010 [1.0 credit]
Advanced Language Tutorial
Advanced study of the language required for studying a religious tradition.
Precludes additional credit for RELI 3902 (no longer offered).
Prerequisite(s): RELI 2902 (no longer offered) or RELI 2010 or permission of the department.
Tutorial two hours a week.

RELI 3101 [0.5 credit]
Special Topics in Religions and the Body
Discussion of the embodiment of religious ideas in life, law, and practice, for example in food consumption, gender ideologies, sexuality, adornment, and death rituals.
Topic will vary year to year; please check departmental website for information. May be repeated for credit when the topic changes.
Precludes additional credit for RELI 3130 (no longer offered), RELI 3131 (no longer offered), RELI 3331 (no longer offered), RELI 3734 (no longer offered).
Lecture three hours a week.

RELI 3140 [0.5 credit]
Holocaust Encounters
An examination of the experiences of different Jewish communities before, during, and after the Holocaust.
Issues to be discussed include anti-Semitism, relations with non-Jewish neighbours, perpetrator motivation, local collaboration, resistance, postwar trials and memory.
Also listed as HIST 3714.
Prerequisite(s): third-year standing or permission of the department.
Lecture three hours a week.
RELI 3220 [0.5 credit]
Reformation Europe
A history of the Protestant and Catholic Reformation of the sixteenth century, with emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era.
Also listed as HIST 3708.
Precludes additional credit for RELI 3708 (no longer offered).
Prerequisite(s): 0.5 credit at the 2000-level in HIST or third-year standing.
Lecture three hours a week.

RELI 3230 [0.5 credit]
Jesus of Nazareth
A study of the historical records of the life of Jesus, the methods used to interpret them, and the resulting images of Jesus.
Precludes additional credit for RELI 2207 or RELI 2220 or permission of the department.
Lectures three hours a week.

RELI 3231 [0.5 credit]
Paul of Tarsus
The social, religious, and historical context of Paul, the communities he founded, and the letters he wrote to them.
Precludes additional credit for RELI 3300 and RELI 3106.
Prerequisite(s): RELI 2207 or RELI 2220 or permission of the department.
Lecture three hours a week.

RELI 3232 [0.5 credit]
Christian Discipline
An historical survey of key Christian thought and practices at the individual and collective level. Topics may include self-discipline, body discipline, monastic discipline, church discipline and social discipline.
Precludes additional credit for RELI 3302 Section "A" taught in 2007-2008.
Prerequisite(s): third-year standing or permission of the department.

RELI 3250 [0.5 credit]
Evangelical Christianity in Social-Historical Perspective
The development of some protestant Christianities in relation to material factors, such as colonialism, industrial or consumer capitalism, imperialism, and in relation to major ideological trends, such as nationalism, economic or political liberalism and atheism.
Lecture three hours a week.

RELI 3301 [0.5 credit]
Music and Religion
An examination of the integral role music plays in religion and sacred ritual in different world cultures and religions. Through various case studies, the course broadly considers how sacred soundscapes shape people’s worldviews, identities, and experiences within and outside of their communities.
Also listed as MUSI 3301.
Prerequisite(s): second-year standing.
Seminars three hours a week.

RELI 3330 [0.5 credit]
Sufism
An introduction to the main practical and theoretical dimensions of Islam’s mystical tradition as seen through the life and work of its key representatives.
Prerequisite(s): RELI 2710 or RELI 2713 or permission of the department.
Lecture three hours a week.

RELI 3340 [0.5 credit]
The Life and Image of Muhammad
Overview of the life and teaching of the Prophet Muhammad, and the most salient motifs and features of Muslim devotion to him.
Precludes additional credit for RELI 2340.
Prerequisite(s): RELI 1710 or RELI 2310 or permission of the department.
Lecture three hours a week.

RELI 3360 [0.5 credit]
Special Topics in Islamic Texts & Narratives
A focus on post-Qur’anic Islamic literature and interpretive traditions (e.g. tafsir, hadith); texts and topics will vary from year to year; please check departmental website for information. May be repeated for credit when the topic changes.
Prerequisite(s): RELI 2310 or RELI 2330.
Lecture three hours per week.

RELI 3420 [0.5 credit]
Early Buddhism
The development of early Buddhist philosophy, psychology and practice with emphasis on the Pali Canon and its commentators.
Precludes additional credit for RELI 3215.
Prerequisite(s): RELI 2106 or RELI 2410 or permission of the department.
Lecture three hours a week.

RELI 3422 [0.5 credit]
Buddhism Beyond India
The rise of the Mahayana and the dissemination and development of Buddhist thought and practice outside of India.
Precludes additional credit for RELI 3217.
Prerequisite(s): RELI 2106 or RELI 2410 or permission of the department.
Lecture three hours a week.
RELI 3520 [0.5 credit]
Early Hinduism
Precludes additional credit for RELI 3015.
Lecture three hours a week.

RELI 3522 [0.5 credit]
Modern Hinduism
A survey of major developments in Hinduism since the period of colonial British rule. The development of "reform" Hinduism in the 18th and 19th centuries, and the emergence of Hindu nationalist movements in the 20th century.
Precludes additional credit for RELI 3007.
Lecture three hours a week.

RELI 3722 [0.5 credit]
Religion and Violence
A thematic course that examines putative cases of "religion and violence" from a range of world traditions, but also interrogates aspects of the "religion and violence" rubric itself.
Prerequisite(s): third-year standing or permission of the department.
Lecture three hours a week.

RELI 3732 [0.5 credit]
Studies in Greek Art
A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year.
Also listed as ARTH 3102, CLCV 3306.
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.
Lecture three hours a week.

RELI 3733 [0.5 credit]
Studies in Roman Art
A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.
Also listed as ARTH 3105, CLCV 3307.
Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.
Lecture three hours a week.

RELI 3741 [0.5 credit]
Classical Approaches to Religion
Examination of reflection on the nature and origin of religion from the ancient world up to key figures and founders of the discipline of the systematic, critical, and scientific study of religion in the nineteenth and early twentieth century.
Prerequisite(s): second-year standing.
Lecture three hours.

RELI 3840 [0.5 credit]
Topics in Religion
Content of this course may vary from year to year. Please check departmental website for information on the topic.
Precludes additional credit for repeated topics.
Lecture three hours a week.

RELI 3850 [0.5 credit]
Topics in the Study of Religion Abroad
This travel course explores religion in its historical and/or contemporary contexts in a particular geographic locale. Travel destinations, religious traditions studied, course content, and themes vary from year to year.
Prerequisite(s): third year standing and 1.0 credit of study in the area related to the year's topic religion, and permission of the department. Permission of the department is required to repeat this course.
Hours to be arranged. Costs associated with the course are borne by the student.

RELI 4741 [0.5 credit]
Contemporary Issues in the Study of Religion
This course engages with the real world implications of late twentieth and twenty-first century scholarship on religion with a focus on applied learning and developing employable skills that facilitate transition from academia to a career.
Includes: Experiential Learning Activity
Precludes additional credit for RELI 3301, RELI 4301, RELI 4740 (no longer offered).
Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.
Seminar three hours per week.

RELI 4840 [0.5 credit]
Tutorial
A tutorial on a topic in religious studies. Contents of the tutorial to be arranged with the supervising faculty member.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.

RELI 4850 [0.5 credit]
Seminar in the Study of Religion
Content of this course may vary from year to year. Please consult the departmental website for information on the topic.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.
Also offered at the graduate level, with different requirements, as RELI 5850, for which additional credit is precluded.
Seminar three hours per week.
RELI 4990 [1.0 credit]
Honours Research Essay
Honours research paper (approx. 40 pages) is due on the last day of winter term classes. Written proposal due to the Proposal Board on the first day of fall term classes. Please consult department document for full requirements and information.
Includes: Experiential Learning Activity
Precludes additional credit for RELI 4908 and RELI 4909.
Prerequisite(s): 10.0 CGPA and fourth-year standing in the Honours B.A. Religion program, or permission of the department.

Russian (RUSS)

Russian (RUSS) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

RUSS 1010 [0.5 credit]
First-Year Russian I
For students with no knowledge of Russian. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for RUSS 1110.
Four hours a week.

RUSS 1020 [0.5 credit]
First-Year Russian II
Continuation of first-year Russian. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for RUSS 1110.
Prerequisite(s): grade of C or higher in RUSS 1010, or permission of the School.
Four hours a week.

RUSS 1110 [1.0 credit]
Intensive First-Year Russian
For students with no knowledge of Russian. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for RUSS 1010 and RUSS 1020.
Eight hours a week (one term).

RUSS 2010 [0.5 credit]
Second-Year Russian I
Further study of Russian to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 1020 or RUSS 1110, or permission of the School.
Four hours a week.

RUSS 2020 [0.5 credit]
Second-Year Russian II
Continuation of second-year Russian. Further study of Russian to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 2010, or permission of the School.
Four hours a week.

RUSS 3010 [0.5 credit]
Third-Year Russian I
Further study of Russian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 2020, or permission of the School.
Three hours a week.

RUSS 3015 [0.5 credit]
Russian for Heritage Speakers I
For students who have attained Russian language proficiency in informal settings or who completed elementary school in a Russian speaking country. The course builds literacy skills, formalizes grammar awareness, and develops writing and reading language skills in a formal academic setting.
Precludes additional credit for all 1000 through 3000 level Russian courses.
Prerequisite(s): Permission of the School.
Online.

RUSS 3020 [0.5 credit]
Third-Year Russian II
Continuation of third-year Russian. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Prerequisite(s): grade of C or higher in RUSS 3010, or permission of the School.
Three hours a week.
RUSS 3025 [0.5 credit]
Russian for Heritage Speakers II
Further study of Russian to enhance students' literacy skills and formalize grammar awareness in a formal academic setting. Emphasis on the use of formal and academic language in oral and written form; further development of writing and reading skills. Precludes additional credit for all 1000 through 3000 level Russian courses. Prerequisite(s): RUSS 3015 or permission of the School. Online.

RUSS 4010 [0.5 credit]
Fourth-Year Russian I
Advanced spoken and written Russian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance. Prerequisite(s): grade of C or higher in RUSS 3020, or permission of the School. Three hours a week.

RUSS 4020 [0.5 credit]
Fourth-Year Russian II
Continuation of fourth-year Russian. Advanced spoken and written Russian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance. Prerequisite(s): grade of C or higher in RUSS 4010, or permission of the School. Three hours a week.

RUSS 4115 [0.5 credit]
Russian for Social Studies
Russian language skills for translation of modern history and social science texts from Russian into English, with an emphasis on syntax. Compulsory attendance. Includes: Experiential Learning Activity Precludes additional credit for Russian translation offered under EURR 4901. Prerequisite(s): permission of the School. Not open to students with native-like Russian proficiency. Three hours a week.

RUSS 4120 [0.5 credit]
Russian for Research
Russian language skills for conducting research in modern history and social sciences, with an emphasis on practice and theory of translation from Russian into English. Compulsory attendance. Includes: Experiential Learning Activity Precludes additional credit for Russian translation offered under EURR 4902. Prerequisite(s): grade of C in RUSS 4115, or permission of the School. Not open to students with native-like Russian proficiency. Three hours a week.

RUSS 4900 [1.0 credit]
Independent Study
Research in a topic in Russian language, literature or linguistics under the supervision of a member of the School. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Russian, grade of C or higher in RUSS 3020 or equivalent, or permission of the School.

RUSS 4901 [0.5 credit]
Independent Study
Research in a topic in Russian language, literature or linguistics under the supervision of a member of the School. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Russian, grade of C or higher in RUSS 3020, or equivalent, or permission of the School.

Sexuality Studies (SXST)

Sexuality Studies (SXST) Courses

SXST 2101 [0.5 credit]
Sexuality Studies: A Critical Introduction
While sexuality is often considered the most private and 'natural' of personal concerns, it is saturated with issues of social power, historical change, and public politics. This course offers a critical introduction to interdisciplinary studies of sexuality, focusing on history, theory, and cultural practice. Includes: Experiential Learning Activity Precludes additional credit for DIST 2101 (no longer offered). Prerequisite(s): second-year standing or permission of the Institute. Lectures and discussions three hours a week.

SXST 2102 [0.5 credit]
Sexuality, Gender, and Security
Historical and contemporary analysis of surveillance, security, and regulation of sexuality, race, class, and gender. Students will critically examine how 'subversives' were created through discourse and administrative logics such as policy and law. Includes: Experiential Learning Activity Also listed as HUMR 2102. Prerequisite(s): second year standing. Lectures and discussions three hours a week.

SXST 3103 [0.5 credit]
Sexuality and Disability
Exploration of ways that embodied categories of sex and gender, as well as desire are mediated through mainstream and alternative discourses of disability. Topics may include: crip theory, mental health issues, and LGBTQ sexualities. Prerequisite(s): third-year standing or permission of the Institute. Lecture three hours a week.
SXST 3104 [0.5 credit]
Transnational Sexualities
Students analyze sex, gender and sexuality as power relations within, and between nation-states comprising the Global North and South, as well as new knowledge created through national border crossings. Topics may include: Orientalism, colonialization, and diasporic identities.
Prerequisite(s): third-year standing and SXST 2101. Lecture three hours a week.

SXST 3106 [0.5 credit]
Queer(ing) Archives
Examination of the archival turn in historical and theoretical perspective with an emphasis on sexuality, race, and gender as subjectivities in queer, trans, and colonial archives.
Also listed as HIST 3102.
Prerequisite(s): third-year standing.
Seminar three hours a week.

SXST 4101 [0.5 credit]
Interdisciplinary Studies of Sexuality
A study of selected issues in sexuality studies considered from an interdisciplinary perspective. The course may focus on any one, or combination of, sexuality studies in relation to history, theory, and/or cultural practice.
Includes: Experiential Learning Activity
Prerequisite(s): SXST 2101 and fourth-year standing.
Seminar three hours a week.

SXST 4102 [0.5 credit]
Queer Theory
A critical approach to gender and sexuality by engaging in key debates and texts in the field of queer theory and studies.
Prerequisite(s): SXST 2101 and fourth-year standing.
Also offered at the graduate level, with different requirements, as WGST 5102, for which additional credit is precluded.
Seminar three hours a week.

SXST 4103 [0.5 credit]
Politics of Kink
This seminar analyzes critically the existence and regulation of non-normative sexual attitudes, behaviours and practices. Topics may include: non-monogamy, sadomasochism, pornography.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.
SOWK 2001 [0.5 credit]
Structural Analysis and Social Work
Evolution of structural social work, theories and critiques of structural social work and contemporary issues and challenges.
Precludes additional credit for SOWK 2000 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.
Lecture three hours a week.

SOWK 2005 [0.5 credit]
Values and Ethics for Social Work
Focuses on knowledge and skills for ethical decision-making in social work; understanding social work values and ethics, accountability and the professional use of self. Includes: Experiential Learning Activity
Precludes additional credit for SOWK 2000 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.
Lecture three hours a week.

SOWK 2100 [0.5 credit]
The Political Economy of the Social Welfare State
Political economic theories as lenses for structural analysis of social problems and policies affecting social work practice in Canada.
Prerequisite(s): SOWK 1001 and SOWK 1002 or permission of the School of Social Work.
Lecture three hours a week.

SOWK 2202 [0.5 credit]
Introduction to Social Work Practice with Individuals and Families
Understand and develop skills required for working with individuals and families; active listening; use of self; engagement; rapport-building; interviewing and interventions; empathy; interpersonal and professional collaboration; supervision.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 3201 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.
Lecture three hours a week.

SOWK 2203 [0.5 credit]
Introduction to Social Work Practice with Groups and Communities
Introduces students to theory and practice skills for group work and community work; structural social work with groups and communities.
Precludes additional credit for SOWK 3200 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.
Lecture three hours a week.

SOWK 2300 [0.5 credit]
Drugs in Society: Theory, Policy, Practice
Examines extent and nature of alcohol, prescription and illicit drug use, theories of drug dependence, history of drug policy; contemporary drug strategies and treatment in Canada.
Precludes additional credit for SOWK 2003 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002.
Lecture three hours a week.

SOWK 2301 [0.5 credit]
Working with Children and Youth
Preventative and protective social work intervention with children and youth. Issues addressed include child neglect, abuse and violence in the context of family; organizational mandate and social political contexts. Programs and services for children and youth.
Precludes additional credit for SOWK 2201 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002.
Lecture three hours a week.

SOWK 3001 [0.5 credit]
Introduction to Research Methods in Social Work
Research methods used in social work; research paradigms; quantitative and qualitative analysis in social work and social welfare; stages in conducting research.
Precludes additional credit for SOWK 2501 (no longer offered) and SOWK 2500 (no longer offered).
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3002 [0.5 credit]
Introduction to Statistical Analysis in Social Work
Fundamentals of statistical analysis; descriptive and inferential statistics and their use in social work research. Statistical tests including Chi-Square, t-tests, correlations and simple linear regressions.
Precludes additional credit for SOWK 2500 (no longer offered), SOWK 2502 (no longer offered).
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3100 [0.5 credit]
Social Policy and Administration
Understanding the welfare state and social policy in Canada; exploring issues in administration including program design and implementation; understanding and developing skills in policy-making and policy analysis. Canadian focus; recognition of the distinctiveness of social policy in Quebec.
Prerequisite(s): SOWK 2100 and third-year standing or permission of the School of Social Work.
Lecture three hours a week.
SOWK 3206 [0.5 credit]
Community Development and Social Change in an International Context
Introduction to theories, models and methods of community organizing as a strategy for social change in an international context.
Prerequisite(s): SOWK 1001 and SOWK 1002; or PAPM 2000, or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3207 [0.5 credit]
Human Rights Practice in Civil Society
Examines the advocacy role and capacity of organizations in civil society to increase popular participation in promoting and protecting human rights; includes transnational and national non-governmental organizations, grassroots movements, community organizations, and virtual or Internet-based organizations.
Prerequisite(s): SOWK 1001 and SOWK 1002 or PAPM 1000 or HUMR 1001 or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3400 [0.5 credit]
Special Topics in Social Work
Theory, policy or direct practice topics not covered in the regular course program. Choice of topics varies from year to year.
Prerequisite(s): SOWK 1001 and SOWK 1002 or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3600 [2.0 credits]
Practicum I (Fall and Winter)
Focus on integrating theory and practice in an approved community setting supervised by a field supervisor.
Graded as Sat/Uns.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 3601, SOWK 3602. Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
352 hours of field work over two terms and concurrent practicum seminars.

SOWK 3601 [2.0 credits]
Practicum I (Winter Term)
Focus on integrating theory and practice in an approved community setting supervised by a field supervisor; 352 field hours and compulsory field seminars. Graded as Sat/Uns.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 3600, SOWK 3602. Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
352 hours of field work over one term and concurrent practicum seminars.

SOWK 3602 [2.0 credits]
Practicum I (Fall term)
Focus on integrating theory and practice in an approved community setting supervised by a field supervisor; 352 field hours and compulsory field seminars. Limited enrolment in this course subject to discretion of Field coordinator. Graded as Sat/Uns.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 3601, SOWK 3600. Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
352 hours of field work over one term and concurrent practicum seminars.

SOWK 3804 [0.5 credit]
Law of the Family
Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody, and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes.
Also listed as LAWS 3804. Prerequisite(s): LAWS 1000, LAWS 2201 and LAWS 2003.
Lectures three hours a week.

SOWK 4000 [0.5 credit]
Social Work and Indigenous Peoples
Social work in partnership with Indigenous peoples in Canada; impact of the past on current relationships; rebuilding through dialogue and respect; understanding Indigenous social work.
Precludes additional credit for SOWK 4200. Prerequisite(s): third-year standing in Bachelor of Social Work.
Lecture three hours each week.

SOWK 4001 [0.5 credit]
Advanced Social Work Practice with Individuals and Families
Advanced theory, methods, techniques, and skills for direct social work practice with individuals and families; individual and family assessments, treatment planning, intervention skills, and evaluation.
Includes: Experiential Learning Activity
Prerequisite(s): SOWK 2202 and fourth-year standing in the Bachelor of Social Work.
Seminar three hours a week.

SOWK 4002 [0.5 credit]
Advanced Social Work Practice with Groups
Advanced theory, methods, techniques, and skills for social work with groups; knowledge of group work and various group formats; and social work interventions in group process.
Prerequisite(s): SOWK 2203 and fourth-year standing in the Bachelor of Social Work.
Seminar three hours a week.
SOWK 4003 [0.5 credit]
Advanced Social Work Practice with Communities
Advanced theory, methods, techniques and skills for engaging in community-based practice. Politics and challenges of social work community organizing and strategies and skills for community work.
Prerequisite(s): SOWK 2203 and fourth-year standing in the Bachelor of Social Work.
Seminar three hours a week.

SOWK 4004 [0.5 credit]
Social Policy Development and Practice
Social policy development processes in government and non-governmental agencies; refining skills in evaluating and critiquing processes of policy formation; role of lobbying and social activism.
Prerequisite(s): SOWK 3100 and fourth-year standing in the Bachelor of Social Work.
Seminar three hours a week.

SOWK 4102 [0.5 credit]
Indigenous Peoples and Social Policy
History of colonization, legacy of colonialism, Royal Proclamation, BNA Act, treaties, impact of residential schools; implications of government social policy for Indigenous peoples in Canada; importance of self-determination and Declaration on the Rights of Indigenous Peoples.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4103 [0.5 credit]
Practice and Policy in Immigration
History of immigration policies in Canada; direct practice with immigrants and refugees; diaspora, settlement and integration issues; immigrants and refugee women; intergenerational family relations; resources and community organizing.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4105 [0.5 credit]
Management of Non-Profit Organizations
Introduction to theories, models and methods of managing non-profit organizations; role, nature and values of the non-profit sector in a market society; practical knowledge of management in different types of non-profit organizations (e.g. cooperatives, voluntary associations, public advocacy and community service organizations).
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4204 [0.5 credit]
Social Work and Aging
Social perspectives on aging with focus on models of practice that contribute to the independence of elderly people. Social programs and policies, such as social insurance, social services, housing, public health and health care. Social, psychological and political issues related to independence in later life.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4206 [0.5 credit]
Feminist Counselling
Examines theory and practice of feminist counselling, feminist counselling skills development.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4209 [0.5 credit]
Special Topics in Direct Social Work Practice
Theory and knowledge development of direct practice topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4210 [0.5 credit]
Special Topics in Direct Social Work Practice
Theory and knowledge development of direct practice topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4211 [0.5 credit]
Special Topics in Social Policy
Theory and knowledge development of social policy topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): SOWK 3100 and third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4212 [0.5 credit]
Special Topics in Social Policy
Theory and knowledge development of social policy topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): SOWK 3100 and third-year standing or permission of the School of Social Work.
Lecture three hours a week.
SOWK 4213 [0.5 credit]
Special Topics in Social Work
Theory and knowledge development of a combination of practice and policy topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4214 [0.5 credit]
Special Topics in Social Work
Theory and knowledge development of a combination of practice and policy topics not in the regular course program. Topics may vary from year to year.
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 4300 [0.5 credit]
Social Work and Persons with Disabilities
Social work theory and practice with persons with disabilities. Structural analysis of theory, models, policies and practices; disability rights; critical analysis of medical model and ableism.
Prerequisite(s): fourth-year standing in the Bachelor of Social Work.
Lecture three hours a week.

SOWK 4301 [0.5 credit]
Racialization and Social Work
Social work and racialization; racism and consequences; critical analysis of cultural formations, difference, and identities; critical examination of whiteness and privilege.
Prerequisite(s): fourth-year standing in the Bachelor of Social Work.
Lecture three hours a week.

SOWK 4302 [0.5 credit]
Poverty and Social Welfare Policy
Social work analysis of theories of poverty and economic inequality; labour force participation; poverty and wealth and income distribution in Canada and international comparisons; Canadian social policies and poverty.
Precludes additional credit for SOWK 4101 (no longer offered).
Prerequisite(s): fourth-year standing in the Bachelor of Social Work.
Lecture three hours a week.

SOWK 4303 [0.5 credit]
Gender and Sexuality
Social work and social, political, institutional and economic relations shaping everyday experiences of gender and sexuality and implications for contemporary social work.
Prerequisite(s): fourth-year standing in the Bachelor of Social Work.
Lecture three hours a week.

SOWK 4600 [2.0 credits]
Practicum II (Fall or Summer Terms)
Development, application, testing and integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or in social administration and policy. Graded Sat/Uns.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 4601, SOWK 4602.
Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
352 hours of fieldwork and concurrent practicum seminars.

SOWK 4601 [1.0 credit]
Practicum IIA
Development, application, testing, integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns. Part one of two part practicum taken consecutively with SOWK 4602.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 4600.
Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
176 hours of fieldwork and concurrent practicum seminars.

SOWK 4602 [1.0 credit]
Practicum IIB
Development, application, testing, integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns. Part two of two part practicum taken consecutively with SOWK 4601.
Includes: Experiential Learning Activity
Precludes additional credit for SOWK 4600.
Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, SOWK 4601 and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.
176 hours of fieldwork and concurrent practicum seminars.

SOWK 4701 [0.5 credit]
Special topic in Criminal Justice and Social Policy
Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Law.
Also listed as LAWS 4701.
Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.
SOWK 4702 [0.5 credit]
Special topic in Criminal Justice and Social Policy
Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Sociology. Also listed as LAWS 4702, SOCI 4702. Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4703 [0.5 credit]
Special topic in Criminal Justice and Social Policy
Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the School of Social Work. Also listed as LAWS 4703. Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4908 [1.0 credit]
Honours Essay
Research essay under supervision of accredited faculty member. Project may be in the form of case study, historical study or other form that meets the approval of faculty advisor. Includes: Experiential Learning Activity Prerequisite(s): fourth-year standing in the Bachelor of Social Work and permission of the School of Social Work.

SOCI 1001 [0.5 credit]
Introduction to Sociology I
Introduction to the discipline of sociology; theory, methods, history; key thinkers, concepts and disciplinary subfields in sociology; issues and problems in contemporary society. Emphasis on the everyday world of lived experience and social relations. Topics may include class, gender, sexuality, racialization, culture, social interaction. Includes: Experiential Learning Activity Precludes additional credit for SOCI 1003. Lectures/discussion groups three hours a week.

SOCI 1002 [0.5 credit]
Introduction to Sociology II
This course will further explore and expand upon the key thinkers, concepts and disciplinary subfields in sociology. The focus of analysis will shift from the everyday world to social institutions and structural processes. Topics may include globalization, education, media, health, social movements, colonialism, urbanization. Includes: Experiential Learning Activity Precludes additional credit for SOCI 1003, SOCI 1005. Prerequisite(s): SOCI 1001. Lectures/discussion groups three hours a week.

SOCI 1003 [1.0 credit]
Introduction to Sociological Perspectives
Introduction to the discipline of sociology; theory, methods and history; key thinkers, concepts and disciplinary subfields in sociology; issues and problems in contemporary society. Precludes additional credit for SOCI 1000, SOCI 1001 and SOCI 1002. Lectures/discussion groups three hours a week.

SOCI 1005 [0.5 credit]
Sociology for Bachelor of Commerce Students
The origins of sociology, why sociology matters, and how it is practiced. Concepts such as class, race, ethnicity, gender, sexual orientation, work, organization, and social movements help students develop their sociological 'eye' for thinking critically about society and their place within it. Precludes additional credit for SOCI 1002. Prerequisite(s): restricted to B.Com. students. Lecture three hours a week.

SOCI 2000 [0.5 credit]
Foundations of Sociological Inquiry
Introduction to sociological inquiry through the study of sociological approaches to knowledge, the relationship of theory to methods, introduction to different methodological traditions including their epistemological foundations, value and limitations. Students will acquire foundational academic skills. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002. Lectures/discussion groups three hours per week.

SOCI 2001 [0.5 credit]
Introduction to Qualitative Research Methods
Introduction to theory and practice of qualitative research methods involving human participants: research design; ethics; data analysis; data generation methods. Methods may include: qualitative interviewing, ethnography, oral history, focus groups, observation. Additional topics may include: historical development/debates in qualitative research/key historical studies. Includes: Experiential Learning Activity Precludes additional credit for SOCI 2003 (no longer offered). Prerequisite(s): SOCI 2000. Lectures/discussion groups or labs three hours a week.

SOCI 2005 [1.0 credit]
Histories of Sociological Thought
Traces theoretical traditions in sociological thought, situating traditions within historical, social and intellectual contexts. At least four of the following will be covered: orientalism, imperialism, colonialism; capitalism, social organization, rationalization; subject formation, identity; self and the everyday; work and leisure; and, social change and revolution. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002. Lectures/discussion groups three hours a week.
SOCI 2010 [0.5 credit]
Critical Approaches to Economic Inequality
Theoretical and empirical examination of economic inequalities in Canada. Topics may include the experience of economic marginalization, how economic inequality is reproduced, how economic inequalities intersect with other forces, such as gender and racialized inequality, and struggles to transform the economic organisation of society.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 3405 (no longer offered) and SOCI 3407 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2020 [0.5 credit]
Race and Ethnicity
Introduction to some of the recent theoretical literature and research on the issues of race, racism and ethnicity. Concepts, controversies and definitions dealing with race and ethnicity from the Canadian context and internationally.
Also listed as ANTH 2020.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2030 [0.5 credit]
Work, Industry and Occupations
An analysis of work practices and settings in societies. Topics of interest include the development of industrial and postindustrial societies; the experience of work, the structuring of work in organizations and in the society; conflict, resistance and labour relations, and the impact of new technologies.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2035 [0.5 credit]
Technology, Culture and Society
Introduction to the principal theories and methods used by Science and Technology Studies (STS) scholars to examine the social and cultural shaping of technology. The substantive focus of the course is on the design, development, production, diffusion, consumption and use of technology.
Also listed as DIGH 2035.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2040 [0.5 credit]
Food, Culture and Society
The sociological analysis of food and eating. The relationship between food and identity; the development of social movements organized around food; and more generally, on practices relating to the production, preparation, and consumption of food.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2043 [0.5 credit]
Sociology of the Family
How do we conceptualize the family? How has family changed over history? What are the diverse realities of families today? This course examines different family forms, relations and dynamics, emphasizing the relationship between family and larger social forces, such as gender, immigration or class.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2045 [0.5 credit]
Gender and Society
How gender and gender relations play out in everyday lives, and how people resist, reproduce, or reinforce gender norms. Considers how gender shapes experiences of family, school, work, media, relationships, bodies, violence, etc. Canadian and global cases are examined.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 2407 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2050 [0.5 credit]
Sociology of Health
Critical approaches to understanding health, illness and healthcare and how social, cultural, political and economic factors affect our health, our experiences with illness, and our encounters with healthcare systems.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2060 [0.5 credit]
Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
Drawing on anthropological and sociological approaches, students will explore girls’ lives in diverse cultural, political, economic, and social contexts. Topics may include: movement and migration, education, media, imaging and humanitarianism, consumerism, agency and activism, health, and violence.
Also listed as ANTH 2060.
Prerequisite(s): second year standing or permission of the instructor.
Two hour lecture plus one hour tutorial per week.
SOCI 2080 [0.5 credit]
Humans/Animals: the More-than-Human in Social Research
Examination of relationships between humans and animals in the sociological and broader social studies canon, including: multispecies ethnography, the role of the ‘more than human’ in Indigenous legal orders, posthumanist and STS theory, relationships between humans and animals and other non-human entities in the Anthropocene.
Also listed as ANTH 2080.
Lecture/discussion groups three hours per week.

SOCI 2150 [0.5 credit]
Social Psychology
Theoretical and empirical consideration of society and the individual. Topics include the public realm, situations, roles and interpersonal relations. Beliefs, attitudes, interests and opinions, leadership and decision making, conformity, coercion and compromise may be also examined.
Precludes additional credit for PSYC 2100.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2160 [0.5 credit]
War and Society
Sociological theory and research on large-scale conflict. How society and culture shape warfare through processes of socialization, bureaucratization, and ideological representation. Social impacts of war in terms of gender, race and ethnicity, class relations, and cultural values.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2170 [0.5 credit]
Foundations in Social Justice
Introduction to the study of social justice and the theorization of social justice sociology. Critical examination of resistance to oppression, social movements and solidarity both in Canada and transnationally. Exploration of the relationship between the university and community-based action.
Includes: Experiential Learning Activity
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2180 [0.5 credit]
Foundations in Community Engagement
Study of theoretical debates and practical applications relating to community engagement with a focus on Canadian examples. Exploration of the contested and complex meanings of community engagement in and between diverse communities, public institutions, non-profit sector and private enterprise with an emphasis on social justice.
Includes: Experiential Learning Activity
Also listed as ANTH 2180.
Prerequisite(s): Second year standing or permission of instructor.
Lecture, discussion and project work three hours a week.

SOCI 2445 [0.5 credit]
Sociology of Deviance
The construction of deviant behaviour and the consequences of such construction for both deviant and conforming persons. Emphasis upon deviance as a normal and necessary result of the socio-cultural processes resulting from, and affecting the activities of a viable society.
Precludes additional credit for SOCI 2505 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2450 [0.5 credit]
Crime and Society
Social reactions to crime, criminalization processes, and the criminal justice system, and their intersection with power relations and social inequalities.
Precludes additional credit for SOCI 2701.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2702 [0.5 credit]
Power and Social Change
An investigation of power and culture, with a focus on how ordinary people contribute to social change. Topics may include activism, leisure, consumption, identity, fashion, sexuality, tourism, health, pollution and work.
Includes: Experiential Learning Activity
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2705 [0.5 credit]
Popular Culture in the Digital Age
An examination of various approaches to analyzing digital media and their role in the production and consumption of contemporary cultural forms and practices. Students will reflect upon their use of digital media and the influence they have on their lives and popular culture, more generally.
Also listed as DIGH 2705.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.
SOCI 2810 [0.5 credit]
Selected Topics in Sociology
Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2820 [0.5 credit]
Selected Topics in Sociology
Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.
Lectures/discussion groups three hours a week.

SOCI 2910 [0.5 credit]
Course-Related Tutorials in Sociology
Consult the Department for information.

SOCI 2920 [0.5 credit]
Course-Related Tutorials in Sociology
Consult the Department for information.

SOCI 3000 [0.5 credit]
Descriptive Statistics in Social Research
The conceptual foundations of descriptive statistics and applications of these statistics using software (SPSS or Stata) to analyze and interpret social science data. Topics include frequency distributions, graphs, measures of central tendency and dispersion, measures of association, bivariate regression, and introduction to multivariate statistics.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 2002 (no longer offered).
Prerequisite(s): SOCI 2000 and third-year standing.
Lectures/computer labs three hours a week.

SOCI 3002 [0.5 credit]
Inferential Statistics in Social Research
Inferential statistics and hypotheses testing used in social science research. Topics may include relationship between samples and population, methods of sample selection, central limit theorem, confidence levels and confidence intervals, overview of selected hypothesis tests, multivariate data analysis and multiple regression analysis.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 3003 (no longer offered).
Prerequisite(s): SOCI 3000 or CRCJ 3001 and third-year standing.
Lectures/computer labs three hours a week.

SOCI 3004 [0.5 credit]
Qualitative Research: Approaches and Strategies
Specialized examination of select strategies or approaches to qualitative research. Topics may include: advanced application of research design involving human participants; historical research methods; textual/document-based research; visual sociologies; critical methodologies (such as feminist or decolonizing methods).
Includes: Experiential Learning Activity
Prerequisite(s): SOCI 2001 and third-year standing.
Lectures/computer labs three hours per week.

SOCI 3006 [0.5 credit]
Thinking the Social: Theories and Approaches
Examination of a select sociological tradition or thinker, or theoretically intensive study of a sociological area. Consult the department for topics offered.
Precludes additional credit for SOCI 3005 (no longer offered), SOCI 4006 (no longer offered).
Prerequisite(s): SOCI 2005 and third-year standing.
Lectures/discussion groups three hours a week.

SOCI 3010 [0.5 credit]
Power, Oppression and Resistance
What makes inequalities so persistent? Theoretical and empirical examination of the intersection of social inequalities in Canada and globally, including class, gender, race and ethnicity and age; study of resistance to structures and cultures of inequalities.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3019 [0.5 credit]
Sociology of International Migration
This course draws from global and interdisciplinary theoretical perspectives to examine primarily though not exclusively Canadian immigration policy and the socio-historical forces shaping policy, migration patterns, permanent, temporary and circular migration, the experiences of immigrants, refugees and migrants; and diasporic and transnational communities and identities.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3020 [0.5 credit]
Studies in Race and Ethnicity
Race, racism and ethnicity in Canada and internationally. Critical perspectives on race and ethnicity, which intersect with other social relations. Racism, Eurocentrism, Orientalism, nationalism, colonialism, international migration, citizenship, and diasporic cultures. Also listed as ANTH 3020.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.
SOCI 3027 [0.5 credit]
Globalization and Human Rights
Examination of the various dimensions and meanings of globalization and its relationship with human rights, with emphasis on the implications of the emerging global economy for economic, social, political and cultural rights. Also listed as ANTH 3027, PSCI 3802.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3030 [0.5 credit]
Studies in Work, Industry and Occupations: Authority and Expertise
The nature and place of expert knowledge in societies. The development of the practices and organization of the professions and their relation to social stratification, the state, patriarchy and gender; the systematic development of knowledge in societies.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 2508 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3035 [0.5 credit]
Science, Culture and Society: Social Studies of Science
Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.
Also listed as ANTH 3035.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3038 [0.5 credit]
Studies in Urban Sociology
Issues related to people and the urban environment, including the historical process of urbanization, rural-urban transition, the diffusion of urban values and life styles, contemporary urban problems such as urban renewal, pollution and the pressures of the urban environment on social institutions.
Precludes additional credit for SOCI 2504 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3040 [0.5 credit]
Studies in the Sociology of Gender
Sociological and feminist perspectives; applied understandings of gender, gender relations; women's and men's lives in contemporary Canadian society and in historical and cross-cultural terms. Multiple intersections between gender, race, ethnicity, class and sexuality.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3044 [0.5 credit]
Sociology of Sex and Sexuality
Key concepts of sex, sexuality, gender, eroticism and pleasure. The history of sex and sexuality. The regulation of sexual relations and practices. Social movements relating to sexuality, gender identities and sexual equality.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3045 [0.5 credit]
Children and Childhood in a Globalized World
A socio-historical and cross-cultural exploration of constructions, deconstructions, and the experience of childhood in Canada and internationally. Compulsory schooling, child labour, protection and regulation in law, the commodification and equalization of childhood, children's social movements, and the emergence of children's rights discourses.
Also listed as ANTH 3045.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3050 [0.5 credit]
Studies in the Sociology of Health
Current theory and research on health, disease and social responses to health issues. Topics include population differences incidence and prevalence of morbidity and mortality, access to care and government health policy. Focus upon cultural definitions of health and their consequences for health promotion practices.
Precludes additional credit for SOCI 3705.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.
SOCI 3055 [0.5 credit]
Studies in Addictions
Survey of alcohol and other drug use in cross-cultural and sub-group perspectives. Relationships between culture, social structure and patterns of use of psychoactive substances. Topics may include: substance use and the life cycle; gender and psychoactive substances; problem and non-problem use. Precludes additional credit for SOCI 3001. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Lecture three hours a week.

SOCI 3056 [0.5 credit]
Women and Health
Women's health issues and how they relate to social, political and economic factors. The intersection of gender, ethnicity, class, sexual orientation and able-bodiedness with women's health. Includes: Experiential Learning Activity Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Seminar 3 hours per week.

SOCI 3060 [0.5 credit]
Critical Disability Studies
Course engages contemporary disability theory, culture, and activism to consider bodily difference and its relation to the workings of power and social control, accessibility, normalization, ableism, and medicalization. Students will gain an understanding of the contemporary debates, theories, and methodologies of critical disability studies. Also listed as DBST 3060. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Lectures three hours a week.

SOCI 3150 [0.5 credit]
Sociology of Rightwing Populism
This course will make sense of Trumpism and other rightwing populisms by interrogating their sociological backgrounds and histories. Students will learn to recognize the systems and structures that make populist leaders possible, and how trends in North America relate to far-right movements elsewhere. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Lecture three hours a week.

SOCI 3160 [0.5 credit]
Political Violence
Sociological examination of political violence. Theoretical analysis of violence as social action that is historically situated and shaped by cultural and economic forces; the relationship between political violence and identity, nation/nationalism, modernity and globalization. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Lectures three hours a week.

SOCI 3170 [0.5 credit]
Social Justice in Action
Current debates in social justice theory and practice. The course includes substantial engagement with community actors, including activists and advocates as guest speakers. Students will be exposed to social justice principles applied in the community through a variety of approaches. Includes: Experiential Learning Activity Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Lecture three hours a week.

SOCI 3210 [0.5 credit]
Selected Topics in Sociology
Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Lecture three hours a week.

SOCI 3220 [0.5 credit]
Selected Topics in Sociology
Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Lecture three hours a week.

SOCI 3300 [0.5 credit]
Studies in the Sociology of Education
Critical analysis of selected work in educational sociology. Topics may include sociological theories of education, school ethnography, contemporary educational policy and practice. Note: Topic will vary in keeping with the interests of students and instructor. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing. Lecture three hours a week.
SOCI 3410 [0.5 credit]
Studies in Criminal Justice
Developments in criminal justice are examined in the context of broader social issues. Particular emphasis will be placed on contemporary developments in criminal justice institutions, programs and practices.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 3808 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3420 [0.5 credit]
Studies in Gender and Criminal Justice
An overview of current issues related to women as both perpetrators and victims of crime and the Canadian criminal justice system's response to them. Topics may include woman abuse, sexual assault, and federally sentenced women.
Precludes additional credit for SOCI 3201 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3430 [0.5 credit]
Studies in Collective Action and Social Movements
Precludes additional credit for SOCI 3408 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3450 [0.5 credit]
Studies in Law Enforcement
A comparative examination of contemporary law enforcement. Topics may include public versus private policing, centralized versus decentralized policing, and transnational policing.
Precludes additional credit for SOCI 3507 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3480 [0.5 credit]
Law and Social Regulation
A study of sociological theories of law as well as the nature of legal institutions. Impacts of legal regulation on various social institutions and on processes of social debate and conflict.
Also listed as LAWS 3106.
Precludes additional credit for SOCI 3801 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3570 [0.5 credit]
Studies in Art, Culture and Society
Aesthetic practices and institutions. Production and reception of diverse art forms (visual, musical, corporeal, etc.) in various sociocultural contexts. Institutions dedicated to supporting such practices (e.g., museums, theatres, festivals, rituals) are examined through a range of theoretical perspectives.
Also listed as ANTH 3570.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3710 [0.5 credit]
Introduction to Cultural Studies
Research and theory in the interdisciplinary area of Cultural Studies. Contemporary cultural change in the advanced industrialized societies and its impact on everyday life.
Includes: Experiential Learning Activity
Precludes additional credit for ANTH 3710.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3805 [0.5 credit]
Studies in Population
Historical and current debates on population growth. Historical declines in fertility and mortality from an international perspective. Contemporary demographic issues such as low fertility, longevity revolution, population aging, inequalities in health, migration and refugees.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3910 [0.5 credit]
Course-Related Tutorials in Sociology
Consult the Department for information, as departmental permission is required.

SOCI 3920 [0.5 credit]
Course-Related Tutorials in Sociology
Consult the Department for information, as departmental permission is required.
SOCI 3950 [0.5 credit]
Practicum Placement in Sociology
This course provides students with the opportunity to apply academic skills and knowledge while working within a sociology-related organization. Placements are organized with support from a co-ordinator.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Sociology with a GPA of 9.00 or higher and permission of the course instructor.
Placement six to eight hours a week.

SOCI 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

SOCI 4002 [0.5 credit]
Advanced Studies in Sociological Theory
Close study of the works of an author, tendency, or school of thought in theoretical sociology. Topic will vary in keeping with interests of the students and instructor.
Prerequisite(s): SOCI 3006 and fourth-year standing.
Seminar three hours a week.

SOCI 4003 [0.5 credit]
Advanced Studies in Qualitative Research
In-depth study into selected issues in qualitative research design, implementation and data analysis. Topics covered may include participant observation, ethnography, grounded theory, discourse analysis, narrative analysis, textual analysis, and document analysis. Intersections between epistemologies and methodologies.
Precludes additional credit for ANTH 4003.
Prerequisite(s): SOCI 3004 and fourth-year standing.
Seminar three hours a week.

SOCI 4009 [0.5 credit]
Advanced Studies in Quantitative Research
Study of specific quantitative methodological issues. Focus may be on one or two of the following topics: quantitative research design, sampling techniques, survey research methods and various statistical research methods including OLS and logistic regression.
Precludes additional credit for SOCI 4840 (no longer offered).
Prerequisite(s): SOCI 3002 and fourth-year standing.
Seminar/lab three hours a week.

SOCI 4020 [0.5 credit]
Advanced Studies in Race and Ethnicity
Selected topics in race and ethnicity in an international context. Specific topics will vary according to instructors' research interests.
Also listed as ANTH 4020.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.
SOCI 4171 [0.5 credit]
Community Engagement Capstone
Students in the capstone will reflect on their engagement experiences and advance their critical understanding of community through a series of in-class activities and readings. Students will produce a public-facing artifact (e.g., blog, podcast, video) related to their experiences, potentially in collaboration with community partners. Includes: Experiential Learning Activity
Also listed as ANTH 4171.
Prerequisite(s): SOCI 2180 and fourth year standing or permission of the instructor.
Lecture, discussion and project work three hours a week.

SOCI 4200 [0.5 credit]
War, Security and Citizenship
Critical theoretical and multidisciplinary examination of violent conflict, security and citizenship. How wars produce a variety of abject and new subjects, create and reproduce citizenship hierarchies, and expand and contract citizenship entitlements.
Also listed as ANTH 4200.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4410 [0.5 credit]
Advanced Studies in Criminology
Crime, criminal justice, social processes relating to the implementation of criminal justice policy, or other aspects of criminality and deviance.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4480 [0.5 credit]
Advanced Studies in the Sociology of Law
Contemporary debates about the role of law in society focusing on the potential and limits of law as a vehicle of social transformation.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4700 [0.5 credit]
Honours Capstone Seminar
Students carry out a small-scale research project to hone transferable skills acquired over the course of the degree programme.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4702 [0.5 credit]
Special Topic in Criminal Justice and Social Policy
Examination of a selected topic in criminal justice and social policy. Topics to be announced.
Also listed as LAWS 4702, SOWK 4702.
Prerequisite(s): fourth-year standing.
Seminars three hours a week.

SOCI 4730 [0.5 credit]
Colonialism and Post-Colonialism
Comparative ethnographic and historical approaches to colonialism including topics such as the formation of colonial regimes, colonial governmentality, servile labour systems, missionization, anti-colonial resistance, cultural hybridization and post-colonial memory. Exploration of debates over the relation between colonialism and the production of social scientific knowledge.
Also listed as ANTH 4730.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4750 [0.5 credit]
Advanced Studies in Globalization and Citizenship
Selected topics on the confluence of processes of globalization, development and citizenship; examination of debates about the meaning and impact of globalization on patterns of inequality and citizenship both internationally and within Canada, and about strategies for progressive development.
Also listed as ANTH 4750.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4810 [0.5 credit]
Advanced Studies in Social Policy
An examination of sociological research and social intervention.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4850 [0.5 credit]
Contemporary Problems in Sociology
Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.

SOCI 4860 [0.5 credit]
Contemporary Problems in Sociology
Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.
Prerequisite(s): fourth-year standing.
Seminar three hours a week.
SOCI 4900 [1.0 credit]
Honours Thesis
An independent research project under the supervision of a faculty member. Seminar supports students through each stage of the research process: development of a research question, designing the project, crafting a proposal, carrying out data generation and analysis, and writing the final thesis. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the Sociology B.A. Honours with a CGPA of 9.00 or higher in the Major or by permission of the instructor. Students are strongly encouraged to locate a faculty member to supervise their Honours Thesis prior to the start of this course. Seminars on a bi-weekly basis (three hours).

SOCI 4910 [0.5 credit]
Tutorial in Sociology
Consult the Department for information.

SOCI 4920 [0.5 credit]
Tutorial in Sociology
Consult the Department for information.

South Asian Studies (SAST)

South Asian Studies (SAST) Courses
SAST 1001 [0.5 credit]
Introduction to South Asian Studies I
An introduction to South Asian studies, including history, literature, religion, philosophy and the arts. Includes: Experiential Learning Activity
Lecture three hours per week.

SAST 1002 [0.5 credit]
Introduction to South Asian Studies II
An introduction to contemporary dimensions of South Asia including cultural, social and political thought and practice. Includes: Experiential Learning Activity
Lecture three hours per week.

Spanish (SPAN)

Spanish (SPAN) Courses
Placement for Language Students
Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

SPAN 1010 [0.5 credit]
First-Year Spanish I
For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for SPAN 1110.
Four hours a week.

SPAN 1020 [0.5 credit]
First-Year Spanish II
Continuation of first-year Spanish. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for SPAN 1110.
Prerequisite(s): grade of C or higher in SPAN 1010, or permission of the School.
Four hours a week.

SPAN 1110 [1.0 credit]
Intensive First-Year Spanish
For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance.
Precludes additional credit for SPAN 1010 or SPAN 1020.
Eight hours a week (one term).

SPAN 2010 [0.5 credit]
Second-Year Spanish I
Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for SPAN 2110.
Prerequisite(s): grade of C or higher in SPAN 1020, SPAN 1110, or permission of the School.
Four hours a week.

SPAN 2020 [0.5 credit]
Second-Year Spanish II
Continuation of second-year Spanish. Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for SPAN 2110.
Prerequisite(s): grade of C or higher in SPAN 2010, or permission of the School.
Four hours a week.

SPAN 2110 [1.0 credit]
Intensive Second-Year Spanish
Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.
Precludes additional credit for SPAN 2010, SPAN 2020.
Prerequisite(s): grade of C or higher in SPAN 2010, SPAN 1110, or permission of the School.
Eight hours a week (one term).
SPAN 3010 [0.5 credit]
Third-Year Spanish I
Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Precludes additional credit for SPAN 3110.
Prerequisite(s): grade of C or higher in SPAN 2020, SPAN 2110, or permission of the School.
Three hours a week.

SPAN 3020 [0.5 credit]
Third-Year Spanish II
Continuation of third-year Spanish. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Precludes additional credit for SPAN 3110.
Prerequisite(s): grade of C or higher in SPAN 3010 or SPAN 3015, or permission of the School.
Three hours a week.

SPAN 3110 [1.0 credit]
Intensive Third-Year Spanish
Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.
Precludes additional credit for SPAN 3010, SPAN 3020.
Prerequisite(s): grade of C or higher in SPAN 3010 or SPAN 3110 or permission of the School.
Six hours a week (one term).

SPAN 3220 [0.5 credit]
Introduction to Spanish Linguistics
Introduction to principles of linguistic analysis, illustrated through Spanish. Sound systems, word structures and sentence structures of Spanish. Basic principles of language variation and change, as evidenced in the development of Spanish. Linguistic aspects of bilingualism as manifested in Spanish/English bilinguals.
Prerequisite(s): SPAN 3020 or SPAN 3110 or permission of the School.
Three hours a week.

SPAN 4010 [0.5 credit]
Fourth-Year Spanish I
Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Precludes additional credit for SPAN 4110.
Prerequisite(s): grade of C or higher in SPAN 3020, SPAN 3110, or permission of the School.
Three hours a week.

SPAN 4015 [0.5 credit]
Spanish for Heritage Speakers I
For students who have attained Spanish language proficiency in informal settings. This course formalizes grammar awareness, enhances literacy skills, and develops existing language abilities in a formal academic setting.
Precludes additional credit for all SPAN courses numbered 4110 and below.
Prerequisite(s): permission of the School.
Online.

SPAN 4020 [0.5 credit]
Fourth-Year Spanish II
Continuation of fourth-year Spanish. Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Precludes additional credit for SPAN 4110.
Prerequisite(s): grade of C or higher in SPAN 4010, or permission of the School.
Three hours a week.

SPAN 4025 [0.5 credit]
Spanish for Heritage Speakers II
For students who have started to develop existing Spanish language abilities in a formal academic setting. This course enhances students' written expression while building on advanced knowledge of Spanish grammar and vocabulary.
Precludes additional credit for all SPAN courses numbered 4110 and below.
Prerequisite(s): SPAN 4015 or permission of the School.
Online.

SPAN 4110 [1.0 credit]
Intensive Fourth-Year Spanish
Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.
Includes: Experiential Learning Activity
Precludes additional credit for SPAN 4010 or SPAN 4020.
Prerequisite(s): grade of C or higher in SPAN 3020, SPAN 3110, or permission of the School.
Six hours a week (one term).

SPAN 4215 [0.5 credit]
Spanish for Specific Purposes
Development of language use for specific purposes in contexts such as the academic, business and technical domains.
Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in SPAN 4020 or SPAN 4110, or permission of the School.
Three hours a week.
SPAN 4320 [0.5 credit]
Topics in Spanish Linguistics
Selected topic in Spanish linguistics. Includes: Experiential Learning Activity
Prerequisite(s): LING 1001 or SPAN 3220, and grade of C or higher in SPAN 4020 or 4110, or permission of the School.
Three hours a week.

SPAN 4380 [0.5 credit]
Topics in Spanish-speaking Cultures
Selected topics in Spanish-speaking cultures and societies. Development of advanced language skills. Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in SPAN 4020 or SPAN 4110, or permission of the School.
Three hours per week.

SPAN 4900 [1.0 credit]
Independent Study
Research in a topic in Spanish language, literature or linguistics under the supervision of a member of the School. Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Spanish, grade of C or higher in SPAN 4020 or SPAN 4110 or equivalent, or permission of the School.

SPAN 4901 [0.5 credit]
Independent Study
Research in a topic in Spanish language, literature or linguistics under the supervision of a member of the School. Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in Spanish, grade of C or higher in SPAN 4020 or SPAN 4110 or equivalent, or permission of the School.

STAT 2507 [0.5 credit]
Introduction to Statistical Modeling I
A data-driven introduction to statistics. Basic descriptive statistics, introduction to probability theory, random variables, discrete and continuous distributions, contingency tables, sampling distributions, distribution of sample mean, Central Limit Theorem, interval estimation and hypothesis testing. A statistical software package will be used.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2606, and STAT 3502. May not be counted for credit in any program if taken after successful completion of STAT 2559.
Prerequisite(s): an Ontario Grade 12 university-preparation Mathematics or equivalent, or permission of the School of Mathematics and Statistics.
Lectures three hours a week, laboratory one hour a week.

STAT 2509 [0.5 credit]
Introduction to Statistical Modeling II
A data-driven approach to statistical modeling. Basics of experimental design, analysis of variance, simple linear regression and correlation, nonparametric procedures. A statistical software package will be used.
Includes: Experiential Learning Activity
Precludes additional credit for STAT 2607, ECON 2202, ECON 2220.
Prerequisite(s): STAT 2507 or STAT 2606 or STAT 3502; or permission of the School.
Lectures three hours a week, laboratory one hour a week.

STAT 2559 [0.5 credit]
Basics of Statistical Modeling (Honours)
Estimation and hypothesis testing for one and two samples, analysis of categorical data, basics of experimental design, analysis of variance, simple linear regression and correlation. Nonparametric procedures. A statistical software package will be used.
Includes: Experiential Learning Activity
Prerequisite(s): STAT 2655 or permission of the School.
Lectures three hours a week, tutorial/laboratory one hour a week.
STAT 2605 [0.5 credit]
Probability Models
Basic probability; discrete random variables with focus on binomial and Poisson random variables; continuous random variables, transformation theorem, simulating continuous random variables; exponential random variable, normal random variable, sums of random variables, central limit theorem. Elements of Markov chains, and introduction to Poisson processes.
Precludes additional credit for STAT 2655 and STAT 3502.
Prerequisite(s): MATH 1007 or MATH 1004 or MATH 1002 (no longer offered) or MATH 1104 or MATH 1107 or MATH 1102 (no longer offered) or MATH 1152. Restricted to students in Bachelor of Computer Science and Bachelor of Mathematics in Computer Mathematics.
Lectures three hours a week, tutorial one hour a week.

STAT 2606 [0.5 credit]
Business Statistics
Introduction to statistical computing; probability concepts; descriptive statistics; estimation and testing of hypotheses. Emphasis on the development of an ability to interpret results of statistical analyses with applications from business.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, and STAT 3502.
Prerequisite(s): MATH 1009. Restricted to B.Com. and B.I.B students.
Lectures three hours a week and laboratory one hour a week.

STAT 2607 [0.5 credit]
Business Statistics II
Topics include: experimental design, multiple regression and correlation analysis, covariance analysis, and introductory time series. Use of computer packages.
Restricted to students in the School of Business.
Includes: Experiential Learning Activity
Precludes additional credit for STAT 2509, ECON 2202, ECON 2220.
Prerequisite(s): STAT 2606.
Lectures three hours a week and one hour laboratory.

STAT 2655 [0.5 credit]
Introduction to Probability with Applications (Honours)
Probability axioms, basic combinatorial analysis; conditional probability and independence, discrete and continuous random variables, joint and conditional distributions, expectation and moments, probability and moment generating functions, Chebyshev's inequality and weak law of large numbers, central limit theorem, sampling distributions, simulation and applications to descriptive statistics.
Precludes additional credit for STAT 2605.
Prerequisite(s): MATH 2052 with a grade of C+ or higher or MATH 2007 or MATH 1005 with a grade of B+ or higher; and MATH 2152 with a grade of C+ or higher or MATH 2107 with a grade of B+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 2660 [0.5 credit]
Mathematics for Finance (Honours)
Interest rates, growth of money, discount functions, yield rates, time value of money, annuities, cash flows and portfolios, loans, mortgages, bonds, immunization, swaps, hedging and investment strategies, stocks and financial markets, arbitrage.
Prerequisite(s): i) one of MATH 2052 or MATH 2007 or MATH 1005, grade of C+ or higher; and ii) one of MATH 1152 or MATH 1107 or MATH 1104, grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 2907 [0.5 credit]
Directed Studies (Honours)
Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

STAT 3502 [0.5 credit]
Probability and Statistics
Axioms of probability; conditional probability and independence; random variables; distributions: binomial, Poisson, hypergeometric, normal, gamma; central limit theorem; sampling distributions; point estimation: maximum likelihood, method of moments; confidence intervals; testing of hypotheses: one and two populations; engineering applications: acceptance sampling, control charts, reliability.
Includes: Experiential Learning Activity
Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, STAT 2507, STAT 2605, and STAT 2606.
Prerequisite(s): MATH 2004 and enrolment in the Faculty of Engineering or B.Sc. programs of the Department of Physics [except Double Honours Mathematics and Physics].
Lectures three hours a week and one hour laboratory.
STAT 3503 [0.5 credit]
Regression Analysis
Review of simple and multiple regression with matrices, Gauss-Markov theorem, polynomial regression, indicator variables, residual analysis, weighted least squares, variable selection techniques, nonlinear regression, correlation analysis and autocorrelation. Computer packages are used for statistical analyses.
Includes: Experiential Learning Activity
Precludes additional credit for STAT 3504.
Prerequisite(s): i) STAT 2509 or STAT 2607 or ECON 2202 or ECON 2220 or equivalent; and ii) MATH 1152 or MATH 1107 or MATH 1119 or equivalent; or permission of the School.
Lectures three hours a week and one hour laboratory.

STAT 3504 [0.5 credit]
Analysis of Variance and Experimental Design
Single and multifactor analysis of variance, orthogonal contrasts and multiple comparisons, analysis of covariance; nested, crossed and repeated measures designs; completely randomized, randomized block, Latin squares, factorial experiments, related topics. Computer packages are used for statistical analyses.
Includes: Experiential Learning Activity
Precludes additional credit for STAT 4504.
Prerequisite(s): STAT 3503 or permission of the School.
Lectures three hours a week and one hour laboratory.

STAT 3506 [0.5 credit]
Stochastic Processes and Applications (Honours)
Conditional probability and conditional expectation; Stochastic modeling; discrete time Markov chains including classification of states, stationary and limiting distributions; exponential distribution and the Poisson processes; queueing models; applications to computer systems, operations research and social sciences.
Prerequisite(s): STAT 2655 with a grade of C- or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3507 [0.5 credit]
Sampling Methodology
The sample survey as a vehicle for information collection in government, business, scientific and social agencies. Topics include: planning a survey, questionnaire design, simple random, stratified, systematic and cluster sampling designs, estimation methods, problem of non-response, related topics.
Includes: Experiential Learning Activity
Prerequisite(s): one of: STAT 2507, STAT 2509, STAT 2606, STAT 2607, ECON 2201, ECON 2202, ECON 2210, ECON 2220, or equivalent; or permission of the School.
Lectures three hours a week and one hour laboratory.

STAT 3508 [0.5 credit]
Elements of Probability Theory
Discrete and continuous distributions, moment-generating functions, marginal and conditional distributions, transformation theory, limiting distributions.
Precludes additional credit for STAT 3558 and STAT 3608.
Prerequisite(s): i) MATH 2008 (or MATH 2004 or MATH 2009); and ii) one of STAT 2507, STAT 2606, ECON 2200, or ECON 2201 or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3509 [0.5 credit]
Mathematical Statistics
Point and interval estimation, sufficient statistics, hypothesis testing, chi-square tests with enumeration data.
Precludes additional credit for STAT 3559.
Prerequisite(s): STAT 3508 or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3553 [0.5 credit]
Regression Modeling (Honours)
Linear regression - theory, methods and application(s). Normal distribution theory. Hypothesis testing and confidence intervals. Model selection. Model diagnostics.
Introduction to weighted least squares and generalized linear models.
Includes: Experiential Learning Activity
Precludes additional credit for STAT 3503.
Prerequisite(s): i) STAT 2559 with a grade of C- or higher; or STAT 2509 with a grade of B or higher; and ii) a grade of C- or higher in MATH 1152 or MATH 1107 or MATH 1104; or permission of the School.
Lectures three hours a week, laboratory one hour a week.

STAT 3558 [0.5 credit]
Elements of Probability Theory (Honours)
Random variables and moment-generating functions, concepts of conditioning and correlation; laws of large numbers, central limit theorem; multivariate normal distribution; distributions of functions of random variables, sampling distributions, order statistics.
Precludes additional credit for STAT 3508 and STAT 3608.
Prerequisite(s): i) STAT 2655 with a grade of C- or higher; or STAT 2509 with a grade of B or higher; and ii) MATH 2000 with a grade of C- or higher, or (a grade of C+ or higher in MATH 2008 or MATH 2004, and permission of the instructor); or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3559 [0.5 credit]
Mathematical Statistics (Honours)
Empirical distribution functions, Monte Carlo methods, elements of decision theory, point estimation, interval estimation, tests of hypotheses, robustness, nonparametric methods.
Precludes additional credit for STAT 3509.
Prerequisite(s): STAT 3558 with a grade of C- or higher; or (STAT 3508 with a grade of B or higher, and permission of the instructor); or permission of the School.
Lectures three hours a week, tutorial one hour a week.
STAT 3660 [0.5 credit]
Actuarial Mathematics I
Severity, frequency models, loss models, risk measures, value at risk, stochastic processes, Poisson process, characteristics of actuarial models, creating new univariate distributions, heavy-tailed distributions, mixed distributions, coverage modifications.
Prerequisite(s): STAT 2655, or permission from the school.
Lectures three hours a week, tutorial one hour a week.

STAT 3661 [0.5 credit]
Life Contingent Risk Modelling I
Introduction to life insurance; traditional and modern insurance contracts; underwriting; premiums; present value random variable; force of mortality; life tables; insurance benefits; annuities; premium calculation, reserves.
Prerequisite(s): STAT 2660 and STAT 3660, or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 3907 [0.5 credit]
Directed Studies
Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

STAT 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

STAT 4500 [0.5 credit]
Parametric Estimation (Honours)
Preliminaries on probability theory; exact and asymptotic sampling distributions; unbiasedness, consistency, efficiency, sufficiency and completeness; properties of maximum likelihood estimators; least squares estimation of location and scale parameters based on order statistics and sample quantiles; Best Asymptotically Normal (BAN) estimators.
Prerequisite(s): STAT 3559 or permission of the School. Also offered at the graduate level, with different requirements, as STAT 5600, for which additional credit is precluded.
Lectures three hours a week.

STAT 4501 [0.5 credit]
Probability Theory (Honours)
Introduction to probability, characteristic functions, probability distributions, limit theorems.
Prerequisite(s): STAT 3506 and STAT 3558 or permission of the School.
Lectures three hours a week.

STAT 4502 [0.5 credit]
Survey Sampling (Honours)
Basic concepts in sampling from finite populations; simple random sampling; stratified sampling; choice of sampling unit; cluster and systematic sampling; introduction to multistage sampling; ratio estimation; sampling with unequal probabilities and with replacement; replicated sampling; related topics.
Prerequisite(s): i) STAT 2559 or STAT 2509; and ii) either STAT 3559, or a grade of C + or better in STAT 3509; or permission of the School.
Lectures three hours a week.

STAT 4503 [0.5 credit]
Applied Multivariate Analysis (Honours)
Selected topics in regression and correlation non-linear models. Multivariate statistical methods, principal components, factor analysis, multivariate analysis of variance, discriminant analysis, canonical correlation, analysis of categorical data.
Prerequisite(s): STAT 3553 or (STAT 3509 and STAT 3503) or permission of the School. Also offered at the graduate level, with different requirements, as STAT 5509, for which additional credit is precluded.
Lectures three hours a week.

STAT 4504 [0.5 credit]
Statistical Design and Analysis of Experiments (Honours)
An extension of the designs discussed in STAT 2559 to include analysis of the completely randomized design, designs with more than one blocking variable, incomplete block designs, fractional factorial designs, multiple comparisons; and response surface methods. Includes: Experiential Learning Activity. Precludes additional credit for STAT 3504 and ECON 4706. PSYC 3000 is precluded for additional credit for students registered in a Mathematics program.
Prerequisite(s): STAT 3553 or STAT 3503; or permission of the School of Mathematics and Statistics.
Lectures three hours a week, laboratory one hour a week.

STAT 4506 [0.5 credit]
Nonparametric Statistics (Honours)
Order statistics; projections; U-statistics; L-estimators; rank, sign, and permutation test statistics; nonparametric tests of goodness-of-fit, homogeneity, symmetry, and independence; nonparametric density estimation; nonparametric regression analysis: kernel estimators, orthogonal series estimators, smoothing splines; high-dimensional inference and false discovery.
Prerequisite(s): STAT 3559 or permission of the School. Also offered at the graduate level, with different requirements, as STAT 5516, for which additional credit is precluded.
Lectures three hours a week.
STAT 4507 [0.5 credit]
Statistical Inference (Honours)
Sufficient statistics, simple and composite hypotheses, most powerful and similar region test, distribution-free tests, confidence intervals, goodness-of-fit and likelihood ratio tests, large sample theory, Bayesian and likelihood methods, sequential tests.
Prerequisite(s): STAT 4500 or permission of the School. Also offered at the graduate level, with different requirements, as STAT 5501, for which additional credit is precluded.
Lectures three hours a week.

STAT 4508 [0.5 credit]
Stochastic Models (Honours)
Review of discrete Markov chains and Poisson processes; continuous time Markov chains; pure jump Markov processes, and birth and death processes including the Q-matrix approach; the Kolmogorov equations; renewal theory; introduction to Brownian motion; queueing theory.
Prerequisite(s): STAT 3506 or permission of the School. Also offered at the graduate level, with different requirements, as STAT 5701, for which additional credit is precluded.
Lectures three hours a week.

STAT 4509 [0.5 credit]
Advanced Mathematical Modeling (Honours)
Real-life situations in the physical, social, and life sciences are often modeled using mathematical tools. This course will examine various models and techniques used in their analysis, e.g., matrix procedures in connection with population models. Students will use a computer package to obtain numerical results.
Prerequisite(s): i) MATH 2454 and STAT 2655 (or MATH 2404 and STAT 2605) and ii) STAT 3506; or permission of the School. Also offered at the graduate level, with different requirements, as STAT 5601, for which additional credit is precluded.
Lectures three hours a week.

STAT 4555 [0.5 credit]
Monte Carlo Simulation (Honours)
Basic ideas and algorithms of Monte Carlo; simulation of basic stochastic processes. Brownian motion and the Poisson process, applications to financial modelling, queueing theory. Output analysis; variance reduction. Markov chain Monte Carlo methods; Gibbs sampling, simulated annealing and Metropolis-Hastings samplers with applications.
Includes: Experiential Learning Activity
Precludes additional credit for STAT 3555 (no longer offered).
Prerequisite(s): STAT 3558, or a grade of B or higher in STAT 3508, or permission of the School.
Lectures three hours a week, tutorial/laboratory one hour a week.

STAT 4601 [0.5 credit]
Data Mining I (Honours)
Data visualization; knowledge discovery in datasets; unsupervised learning: clustering algorithms; dimension reduction; supervised learning: pattern recognition, smoothing techniques, classification. Computer software will be used.
Includes: Experiential Learning Activity
Prerequisite(s): STAT 3553 or STAT 3503 or MATH 3806, or permission of the School.
Lectures three hours a week, laboratory one hour a week.

STAT 4603 [0.5 credit]
Time Series and Forecasting (Honours)
Includes: Experiential Learning Activity
Prerequisite(s): STAT 3553 or STAT 3503, or permission of the School.
Lectures three hours a week.

STAT 4604 [0.5 credit]
Statistical Computing (Honours)
Statistical computing techniques, pseudo-random number generation, tests for randomness, numerical algorithms in statistics; optimization techniques; environments for data analysis, efficient programming techniques; statistics with mainstream software.
Includes: Experiential Learning Activity
Prerequisite(s): STAT 3553 or STAT 3503, or permission of the School.
Lectures three hours a week, laboratory one hour a week.

STAT 4607 [0.5 credit]
Bayesian Statistical Analysis (Honours)
Includes: Experiential Learning Activity
Prerequisite(s): STAT 3553 or permission of the School.
Lectures three hours a week, laboratory one hour a week.

STAT 4660 [0.5 credit]
Actuarial Mathematics II
Empirical models, complete data, grouped data, credibility theory, failure time, accuracy, kernel estimation, goodness of fit tests, Bayesian analysis, inference for loss models, frequentist estimation, model selection.
Prerequisite(s): STAT 3660 with C+ or higher, or permission of the school.
Lectures three hours a week, tutorial one hour a week.
STAT 4661 [0.5 credit]
Life Contingent Risk Modelling II
Policy values; multiple state models; formulae for probability; Markov multiple state models; pension mathematics; yield curves; interest rate risk; emerging costs for life insurance; equity linked insurance; deterministic and stochastic pricing; reserving, participating, and universal life insurance.
Precludes additional credit for STAT 3662 (no longer offered).
Prerequisite(s): STAT 3661 with a grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 4905 [0.5 credit]
Honours Project (Honours)
Consists of a written report on some approved topic or topics in the field of statistics, together with a short lecture on the report.
Includes: Experiential Learning Activity
Prerequisite(s): B.Math.(Honours) students only.

STAT 4907 [0.5 credit]
Directed Studies (Honours)
Prerequisite(s): B.Math.(Honours) students only.

Sustainable and Renewable Energy (SREE)

Sustainable and Renewable Energy (SREE) Courses

SREE 1000 [0.0 credit]
Introduction to Sustainable Energy
Prerequisite(s): registration in Sustainable and Renewable Energy Engineering.
Lectures one hour per week.

SREE 3001 [0.5 credit]
Sustainable and Renewable Energy Sources
Primary energy sources and the pathways to use. Renewables: photovoltaic, solar-thermal, hydropower, geothermal, tidal. Fossil fuels and nuclear. Terrestrial, thermodynamic and electrical limitations.
Includes: Experiential Learning Activity
Prerequisite(s): ENVE 2001 and MAAE 2300 and (ELEC 3605 or ELEC 2501 or fourth-year status in Environmental Engineering).
Lectures three hours per week, laboratories/problem analysis one hour per week.

SREE 3002 [0.5 credit]
Electricity: Use, Distribution, Integration of Distributed Generation
Electricity use in Ontario: rates, government incentives, smart use. Electricity Distribution: topology, reliability, load characteristics, voltage regulation, power loss, capacitors, economics of optimum choice, system protection. Distributed Generation: guides and regulations, case study.
Includes: Experiential Learning Activity
Prerequisite(s): SREE 3001, ELEC 4602 and (ELEC 2501 or ELEC 3605).
Lectures three hours per week, laboratories three hours per week alternate weeks.

SREE 3003 [0.5 credit]
Sustainable and Renewable Electricity Generation
Power system structures; photovoltaic (PV) cell model, PV current-voltage curves, maximum power point tracking, grid-connected PV systems; power flow of wind generation, grid connection of wind generator; energy storage classification, battery equivalent circuit model, battery charging and discharging; renewable generation; feed-in tariff program.
Includes: Experiential Learning Activity
Prerequisite(s): SREE 3001, ELEC 4602 and (ELEC 2501 or ELEC 3605).
Lectures three hours per week, laboratories three hours per week alternate weeks.

SREE 4001 [0.5 credit]
Efficient Energy Conversion
Includes: Experiential Learning Activity
Precludes additional credit for MECH 4403.
Prerequisite(s): MAAE 2300, MAAE 2400 and fourth year status in Sustainable & Renewable Energy Engineering.
Lectures three hours per week, laboratories/problem analysis three hours per week.

SREE 4002 [0.5 credit]
The Energy Economy, Reliability and Risk
Interrelationship between energy and economic policy and regulations. Reliability of energy supply systems. Risk analysis and its application to the generation, distribution and environmental impacts of energy. Risks analysis and management associated with natural and human and regulatory influences. Environmental and public health risk analysis.
Prerequisite(s): fourth-year status in Engineering.
Lectures three hours per week.
SREE 4907 [1.0 credit]
Energy Engineering Project
Student teams develop professional-level experience by applying, honing, integrating and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): ECOR 3800, SREE 3002 and SREE 3003, fourth-year status in Sustainable and Renewable Energy Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites or corequisites.
Lecture one hour a week, laboratory seven hours a week.

Systems and Computer Engineering (SYSC)

Systems and Computer Engineering (SYSC) Courses
Note: the Departments of Systems and Computer Engineering and Electronics offer courses in: Biomedical and Electrical Engineering, Communications Engineering, Computer Systems Engineering, Electrical Engineering, Software Engineering and Engineering Physics.

SYSC 1005 [0.5 credit]
Introduction to Software Development
Software development as an engineering discipline, using a modern programming language, Language syntax. Algorithm design. Tracing and visualizing program execution. Testing and debugging. Program style, documentation, reliability. Lab projects are drawn from a variety of application domains: digital image manipulation, computer games, robotics.
Includes: Experiential Learning Activity
Precludes additional credit for ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, SYSC 1100 (no longer offered), COMP 1005 and COMP 1405.
Lectures three hours a week, laboratory three hours a week.

SYSC 2001 [0.5 credit]
Computer Systems Foundations
Computer architecture and organization: CPU, cache, memory, input/output, bus structures, interrupts; computer arithmetic: integer and floating point; CPU: instruction sets, addressing modes, instruction encoding. Input/output: programmed, interrupt-driven, block-oriented. Examples from several modern processor families.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2320, SYSC 3006.
Prerequisite(s): ECOR 1606 or SYSC 1005. Additional recommended background: SYSC 2006.
Lectures three hours a week, laboratory two hours a week.

SYSC 2003 [0.5 credit]
Introductory Real-Time Systems
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3006 and SYSC 3310.
Prerequisite(s): SYSC 2001 and SYSC 2006.
Lectures three hours a week, laboratory two hours a week.

SYSC 2004 [0.5 credit]
Object-Oriented Software Development
Designing and implementing small-scale programs as communities of collaborating objects, using a dynamically-typed or statically-typed programming language. Fundamental concepts: classes, objects, encapsulation, information hiding, inheritance, polymorphism. Iterative, incremental development and test-driven development.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 1101, COMP 1006 and COMP 1406.
Prerequisite(s): SYSC 2006 or permission of the department, and second-year status in Engineering.
Lectures three hours a week, laboratory two hours a week.

SYSC 2006 [0.5 credit]
Foundations of Imperative Programming
Includes: Experiential Learning Activity
Precludes additional credit for COMP 2401, SYSC 4006.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, laboratory two hours a week.

SYSC 2010 [0.5 credit]
Programming Project
Programming, testing, and debugging of small team-based software projects that use data from sensors to display results graphically. Modern programming tools: frameworks, libraries, version control, package management, tool chains. Sensors, signal acquisition, display, and basic filtering. Introductory network programming.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3010, SYSC 3110.
Prerequisite(s): 2nd year status in Biomedical and Electrical Engineering or Communications Engineering.
Lectures three hours a week, laboratory three hours a week.
SYSC 2100 [0.5 credit]
Algorithms and Data Structures
Thorough coverage of fundamental abstract collections: stacks, queues, lists, priority queues, dictionaries, sets, graphs. Data structures: review of arrays and linked lists; trees, heaps, hash tables. Specification, design, implementation of collections, complexity analysis of operations. Sorting algorithms.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2002 (no longer offered) and COMP 2402.
Prerequisite(s): SYSC 2006 with a minimum grade of C-, and second-year status in Engineering.
Lectures three hours a week, laboratory two hours a week.

SYSC 2310 [0.5 credit]
Introduction to Digital Systems
Includes: Experiential Learning Activity
Precludes additional credit for ELEC 2607.
Prerequisite(s): Enrolment in Computer Systems Engineering, Communications Engineering, or Software engineering, and second-year status in Engineering.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 2320 [0.5 credit]
Introduction to Computer Organization and Architecture
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2001 and SYSC 3006.
Prerequisite(s): SYSC 2310 and second-year status in Engineering.
Lectures three hours a week, laboratory three hours a week.

SYSC 2510 [0.5 credit]
Probability, Statistics and Random Processes for Engineers
Includes: Experiential Learning Activity
Pre requisite(s): MATH 1004 and MATH 1104, and second-year status in Engineering.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 2306 [0.5 credit]
Computer Organization
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2001, SYSC 2003, SYSC 2320 and SYSC 3310. May not be taken for credit by students in Computer Systems Engineering, Communications Engineering, or Software Engineering.
Prerequisite(s): SYSC 2006 and ELEC 2607.
Lectures three hours a week, laboratory two hours a week.

SYSC 3010 [0.5 credit]
Computer Systems Development Project
Development of expertise in designing, implementing and testing industrial-quality embedded systems through team projects. Applying modern programming languages, system design practices, current development processes (refactoring, iterative and incremental development) as well as current team-management tools (communication, version control) to medium-scale projects.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 2404, SYSC 2010, SYSC 2101 (no longer offered), and SYSC 3110.
Prerequisite(s): SYSC 2100 and either SYSC 2003 or SYSC 3310 (may be taken concurrently), and enrolment in Computer Systems Engineering.
Lectures two hours a week, laboratory three hours a week.
SYSC 3020 [0.5 credit]  
**Introduction to Software Engineering**  
Introduction to software engineering principles, software development life-cycles. Modelling in software engineering. Current techniques, notations, methods, processes and tools used in software engineering. UML modelling. Introduction to software quality, software verification and validation, software testing. Includes: Experiential Learning Activity  
Precludes additional credit for SYSC 3100, SYSC 3120, SYSC 4120 and COMP 3004.  
Prerequisite(s): SYSC 2004 and (SYSC 2006 or SYSC 2002).  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3101 [0.5 credit]  
**Programming Languages**  
Principles underlying different kinds of programming languages (procedural, functional, logic programming) and their semantics. Overview of machinery needed for language support (compilers, interpreters and run-time systems). Includes: Experiential Learning Activity  
Precludes additional credit for COMP 3007.  
Prerequisite(s): SYSC 2004.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3110 [0.5 credit]  
**Software Development Project**  
Development of expertise in designing, implementing and testing maintainable, reusable software through team projects. Applying modern programming languages, design patterns, frameworks, UML and modern development processes (detection of olfactible source code defects, refactoring, iterative and incremental development, version control techniques) to medium-scale projects. Includes: Experiential Learning Activity  
Precludes additional credit for COMP 2404, SYSC 2010, SYSC 2101 and SYSC 3010.  
Prerequisite(s): SYSC 2004 and SYSC 2100, and enrolment in Software Engineering.  
Lectures two hours a week, laboratory three hours a week.

SYSC 3120 [0.5 credit]  
**Software Requirements Engineering**  
Current techniques, notations, methods, processes and tools used in Requirements Engineering. Requirements elicitation, negotiation, modeling requirements, management, validation. Skills needed for Requirements Engineering and the many disciplines on which it draws. Requirements analysis: domain modeling, modeling object interactions; UML modeling. Introduction to software development processes. Includes: Experiential Learning Activity  
Precludes additional credit for SYSC 3020 and COMP 3004.  
Prerequisite(s): SYSC 2004 and enrolment in Software Engineering.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3200 [0.5 credit]  
**Industrial Engineering**  
Techniques of operations research for decision-making in complex engineering systems. Linear programming, network models, PERT, integer programming, dynamic programming, queuing systems and inventory models. Problem solving is emphasized. Includes: Experiential Learning Activity  
Precludes additional credit for BUSI 2300, ECON 4004, or MATH 3801.  
Prerequisite(s): MATH 1004 and MATH 1104, and second-year status in Engineering.  
Lectures three hours a week, laboratory/problem analysis one and a half hours per week.

SYSC 3203 [0.5 credit]  
**Bioelectrical Systems**  
Prerequisite(s): MATH 1005 and (ELEC 2507 or ELEC 3605), and enrolment in Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering, and second-year status in Engineering.  
Lectures three hours a week, laboratory three hours a week.
SYSC 3303 [0.5 credit]
Real-Time Concurrent Systems
Principles and practice of a systems engineering approach to the development of software for real-time, concurrent, distributed systems. Designing to achieve concurrency, performance, and robustness, using visual notations. Converting designs into programs. Introduction to hard real-time systems. Team project.
Includes: Experiential Learning Activity
Prerequisite(s): for students in the Faculty of Engineering and Design: (SYSC 2003 or SYSC 3310) and SYSC 2004. For students in Computer Science: COMP 2401 and COMP 2402.
Lectures three hours a week, laboratory two hours a week.

SYSC 3310 [0.5 credit]
Introduction to Real-Time Systems
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 2003, SYSC 3006. Prerequisite(s): SYSC 2006 with a minimum grade of C-and SYSC 2320.
Lectures three hours a week, laboratory two hours a week.

SYSC 3320 [0.5 credit]
Computer Systems Design
System on Chip (SoC)-based computer system design. SoC internal organization. Cache memory. Interfacing: external memory, hardware subsystems. Direct memory access. Floating point units. Introduction to field programmable gate arrays.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3601 and ELEC 4601. Prerequisite(s): SYSC 3310 and third year status in Computer Systems Engineering, or permission of the Department.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3500 [0.5 credit]
Signals and Systems
Signals: energy and power signals, discrete-time and continuous. Linear systems and convolution. Fourier Transform; complex Fourier series; signal spectral properties and bandwidth. Laplace transform and transient analysis. Transfer functions, block diagrams. Baseband and passband signals, with applications to communications systems.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3600 and SYSC 3610. Prerequisite(s): MATH 1005 and enrolment in Communications Engineering, and second-year status in Engineering.
Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 3501 [0.5 credit]
Communication Theory
Review of signals, linear systems and Fourier theory; signal bandwidth and spectra; digital waveform coding; introduction to analog and digital modulation systems; synchronization; characterization and effects of noise; link budgets; communications media and circuits; applications to current communications systems.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3503. Prerequisite(s): SYSC 3600 or SYSC 3610.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3503 [0.5 credit]
Communication Theory II
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3501 or SYSC 4600. Prerequisite(s): SYSC 3500 and (STAT 2605 or SYSC 2510).
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3600 [0.5 credit]
Systems and Simulation
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3500 or SYSC 3610. Prerequisite(s): MATH 1005 and second-year status in Engineering.
Lectures three hours a week, laboratory three hours a week.
SYSC 3601 [0.5 credit]
Microprocessor Systems
Microprocessor-based system design for different microprocessor families. Microprocessors: internal organization, instruction sets, address generation, pin-outs, bus cycles, signalling waveforms. Interfacing memory and I/O devices. Interrupt structures, direct memory access. Floating point coprocessors. System bus standards. Introduction to DSPs. Includes: Experiential Learning Activity
Prerequisites: SYSC 3320 or ELEC 4601. Additional credit for SYSC 3320 or ELEC 4601.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3610 [0.5 credit]
Biomedical Systems, Modeling, and Control
Prerequisites: MATH 1005 and enrolment in Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering, and second-year status in Engineering. Lectures three hours a week, laboratory three hours a week.

SYSC 3999 [0.0 credit]
Co-operative Work Term
Includes: Experiential Learning Activity

SYSC 4001 [0.5 credit]
Operating Systems
Introduction to operating system principles. Processes and threads. CPU scheduling. Managing concurrency: mutual exclusion and synchronization, deadlock and starvation. Managing memory and input/output. Concurrent programming, including interprocess communication in distributed systems. Includes: Experiential Learning Activity
Prerequisites: SYSC 3001 and COMP 3000.
Lectures three hours a week, laboratory three hours a week.

SYSC 4005 [0.5 credit]
Discrete Simulation/Modeling
Prerequisites: (ECOR 2050 or SYSC 2510 or STAT 2605 or STAT 3502) and fourth-year status in Engineering, or permission of the Department. Also offered at the graduate level, with different requirements, as SYSC 5001, for which additional credit is precluded. Lectures three hours a week, laboratory one hour a week.

SYSC 4006 [0.5 credit]
Introduction to Systems Programming
Introduction to C programming: Data types, flow control, functions, arrays, pointers, and arithmetic, logical and bitwise operators. Memory models, collections. Low-level I/O. Build pipeline (version control, make, preprocessing, compiling, linking) in Linux. Testing and debugging. Precludes additional credit for SYSC 2006.
Prerequisites: SYSC 3020 or SYSC 3120. Lectures three hours a week.

SYSC 4007 [0.5 credit]
Software Validation
Techniques for the systematic testing of software systems. Software validation and verification, software debugging, quality assurance, measurement and prediction of software reliability. Emphasis on the treatment of these topics in the context of real-time and distributed systems. Includes: Experiential Learning Activity
Prerequisites: SYSC 3120 or COMP 2004. Lectures three hours a week, laboratory three hours a week.

SYSC 4102 [0.5 credit]
Performance Engineering
Techniques based on measurements and models, for predicting and evaluating the performance of computer systems. Instrumentation. Simple queueing models and approximations. Techniques for modifying software designs to improve performance. Includes: Experiential Learning Activity
Prerequisites: ECOR 2050 or STAT 3502 and SYSC 4001. Also offered at the graduate level, with different requirements, as SYSC 5102, for which additional credit is precluded. Lectures three hours a week, laboratory three hours a week.
SYSC 4106 [0.5 credit]  
The Software Economy and Project Management  
Introduction to software project management and economics; Return on software investments; Software life cycle; Work breakdown structure, scheduling and planning; Risk analysis and management; Product size and cost estimation; Earn value management; Statistical process control; Managing project team and process improvement; Bidding and contract types.  
Prerequisite(s): SYSC 3120 (may be taken concurrently) or COMP 3004, and enrolment in Software Engineering or the Bachelor of Computer Science.  
Lectures three hours a week.

SYSC 4111 [0.5 credit]  
Formal Methods in Software Engineering  
Introduction to formal methods in software engineering with coverage of propositional and first-order logic (syntax, semantics, proof theory), formal specification languages, bounded analysis and validation, formal specification tools, and model checking with finite-state machines, temporal logic, and model checking tools.  
Prerequisite(s): COMP 1805, SYSC 3120, and SYSC 4001.  
Lectures three hours a week.

SYSC 4120 [0.5 credit]  
Software Architecture and Design  
Introduction and importance of software architectures and software system design in software engineering. Current techniques, modeling notations, methods, processes and tools used in software architecture and system design. Software architectures, architectural patterns, design patterns, software qualities, software reuse.  
Includes: Experiential Learning Activity  
Precludes additional credit for COMP 3004, SYSC 3020 and SYSC 4800 (no longer offered).  
Prerequisite(s): SYSC 3120.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4201 [0.5 credit]  
Ethics, Research Methods and Standards for Biomedical Engineering  
Ethical theories, ethical decision-making, biomedical research ethics: informed consent, confidentiality, privacy, research ethics boards; research methods: hypothesis formulation, data collection, sampling bias, experimental design, statistical literacy; regulations for design, manufacture, certification of medical devices; impact of technology and research (social, political, financial).  
Includes: Experiential Learning Activity  
Prerequisite(s): ELEC 3605 or SYSC 3203.  
Lectures three hours a week, problem analysis one and a half hours per week.

SYSC 4202 [0.5 credit]  
Clinical Engineering  
Overview of the Canadian health care system; brief examples of other countries; clinical engineering and the management of technologies in industrialized and in developing countries; safety, reliability, quality assurance; introduction to biomedical sensor technologies; applications of telemedicine; impact of technology on health care.  
Includes: Experiential Learning Activity  
Prerequisite(s): fourth-year status in Biomedical and Electrical or Biomedical and Mechanical Engineering.  
Also offered at the graduate level, with different requirements, as BIOM 5406, for which additional credit is precluded.  
Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 4203 [0.5 credit]  
Bioinstrumentation and Signals  
Bioinstrumentation and biological signals; instrumentation systems, noise, electrical safety, and biocompatibility; bioelectric signals; biopotential electrodes: material properties, selection, and fabrication; measurement of flow and pressure; data acquisition; signal processing; biomedical imaging technologies; performance and characteristics of bioamplifier systems; major physiological systems and associated measurements.  
Includes: Experiential Learning Activity  
Prerequisite(s): (SYSC 3600 or SYSC 3500 or SYSC 3610) and (ELEC 2507 or ELEC 3605 or SYSC 3203) and fourth-year status in Biomedical and Electrical Engineering or fourth-year status in Biomedical and Mechanical Engineering.  
Lectures three hours a week, laboratory/problem analysis three hours a week.

SYSC 4205 [0.5 credit]  
Image Processing for Medical Applications  
Includes: Experiential Learning Activity  
Prerequisite(s): MATH 1005 and fourth-year status in Engineering.  
Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.
SYSC 4310 [0.5 credit]  
**Computer Systems Architecture**  
Includes: Experiential Learning Activity  
Precludes additional credit for SYSC 4507.  
Prerequisite(s): SYSC 3320, and enrolment in Computer Systems Engineering.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4320 [0.5 credit]  
**Case Studies in Computer Systems**  
Examples of several modern computer systems are presented in a computer systems context: system objectives, software and hardware components, interactions. The case studies present computer systems trends emerging in practice.  
Prerequisite(s): SYSC 4310, and enrolment in Computer Systems Engineering.  
Lectures three hours a week, problem analysis one hour a week.

SYSC 4405 [0.5 credit]  
**Digital Signal Processing**  
Includes: Experiential Learning Activity  
Prerequisite(s): SYSC 3500 or SYSC 3600 or SYSC 3610.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4415 [0.5 credit]  
**Introduction to Machine Learning**  
Introduction to supervised and unsupervised machine learning (ML), including deeper knowledge of several algorithms of each type. Evaluation and quantification of predictive performance of ML systems. Use of one or more ML development environments.  
Prerequisite(s): (ECOR 2050 or STAT 3502 or STAT 2605 or SYSC 2510), SYSC 2006 (with a minimum grade of C-), and third-year status in Engineering.  
Lectures three hours a week, problem analysis one hour a week.

SYSC 4502 [0.5 credit]  
**Communications Software**  
Communications software architectures, protocols and operating systems. Application layer protocols, APIs and socket programming. P2P algorithms, network virtualization, SDN. Reliable data transfer algorithms, FSM, MSC. Network security. Multimedia applications, RTSP, CDN, DASH, RTP, RTCP. Packet scheduling algorithms, DiffServ, IntServ, RSVP. Traffic classification, cross-layer optimization.  
Includes: Experiential Learning Activity  
Prerequisite(s): SYSC 2004 and SYSC 4602.  
Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 4504 [0.5 credit]  
**Fundamentals of Web Development**  
Includes: Experiential Learning Activity  
Precludes additional credit for COMP 2406.  
Prerequisite(s): SYSC 2004. Additional recommended background: SYSC 4602 or SYSC 3303.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4505 [0.5 credit]  
**Automatic Control Systems I**  
Includes: Experiential Learning Activity  
Precludes additional credit for MAAE 3500, MAAE 4500 (no longer offered).  
Prerequisite(s): MATH 2004 and (SYSC 3500 or SYSC 3600 or SYSC 3610).  
Lectures three hours a week, laboratory three hours alternate weeks.
SYSC 4507 [0.5 credit]
Computer Systems Architecture
Evolution of computer systems architecture, influences of changing technology, techniques to improve performance, memory hierarchy, hardware accelerators. Instruction level parallelism, pipelining, vector processing, superscalar, out of order execution, speculative execution. Thread level parallelism, multi-core, many-core, heterogeneous systems. Evolution of architectures for specific application domains.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 4310.
Prerequisite(s): ELEC 2607 and (SYSC 2001 or SYSC 3006).
Lectures three hours a week, laboratory/problem analysis one hour a week.

SYSC 4600 [0.5 credit]
Digital Communications
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 4503 and SYSC 4604.
Prerequisite(s): SYSC 3501 and STAT 3502.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4602 [0.5 credit]
Computer Communications
Includes: Experiential Learning Activity
Precludes additional credit for COMP 3203.
Prerequisite(s): ECOR 2050 or SYSC 2510 or STAT 2605 or STAT 3502 (may be taken concurrently), and third-year status in Biomedical and Electrical, Electrical, Communications, Computer Systems, Software, or Sustainable and Renewable Energy Engineering.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4604 [0.5 credit]
Digital Communication Theory
Introduction to information theory, source coding and data compression, Error control coding, Trellis coded modulation, advanced topics of current interest: spread spectrum; digital wireless communications.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 4600.
Prerequisite(s): SYSC 3503.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4607 [0.5 credit]
Wireless Communications
Wireless radio channel characterization, diversity, equalization; cellular architecture, multiple access principles, spread spectrum systems, radio resource management; examples from modern wireless systems, networks, and standards, including cellular networks, WLANs, ad hoc networks, and satellite systems.
Includes: Experiential Learning Activity
Prerequisite(s): SYSC 3501 or SYSC 3503.
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4700 [0.5 credit]
Telecommunications Engineering
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Electrical, Computer Systems or Communications Engineering, and (SYSC 3501 or SYSC 3503).
Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4701 [0.5 credit]
Communications Systems Lab
Project-oriented level experience in the design of communication systems to meet user requirements. Lectures on queueing theory and teletraffic analysis; system specification and design: requirements analysis, solution alternatives, evaluation of alternative technologies, design, costing, implementation, test.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Communications Engineering or permission of the department.
Lectures two hours a week, laboratory four hours a week.
SYSC 4805 [0.5 credit]
Computer Systems Design Lab
Project-oriented experience in the design of embedded computer systems. Lectures will discuss practical aspects related to the design and development of embedded systems, starting from sensor data acquisition and processing to decision systems, testing and embedded-system based project management, with practical application examples.
Includes: Experiential Learning Activity
Prerequisite(s): SYSC 3320 or SYSC 3601, and enrolment in Computer Systems Engineering.
Lectures two hours a week, laboratory four hours a week.

SYSC 4806 [0.5 credit]
Software Engineering Lab
Applying the full spectrum of engineering and programming knowledge acquired in the program through team projects in the laboratory. Practice in doing presentations and reviews. Lectures will discuss software engineering issues as they relate to the projects, from a mature point of view.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 3005, SYSC 3110, and enrolment in Software Engineering, or permission of the department.
Lectures two hours a week, laboratory four hours a week.

SYSC 4810 [0.5 credit]
Introduction to Network and Software Security
Fundamental concepts, terminologies, and theories of computer security; principles underlying common security controls; various types of threats and attacks on networks and software systems, how they work, and controls for dealing with them; security risk assessment and management; legal and ethical aspects of computer security.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 4108.
Prerequisite(s): fourth-year status in Communications, Computer Systems or Software Engineering.
Lectures three hours a week, problem analysis one and a half hours a week.

SYSC 4906 [0.5 credit]
Special Topics
At the discretion of the Department, a course dealing with selected advanced topics of interest to students in Biomedical and Electrical, Communications, Computer Systems, Electrical, Software Engineering, and Engineering Physics may be offered.
Prerequisite(s): permission of the Department.

SYSC 4907 [1.0 credit]
Engineering Project
Student teams develop professional-level experience by applying previously acquired knowledge to a major design project. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.
Lecture one hour a week, laboratory seven hours a week.

SYSC 4917 [1.0 credit]
Biomedical Engineering Project
Student teams develop professional-level experience by applying previously acquired knowledge to a major design project in biomedical engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in Biomedical and Electrical Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.
Lecture one hour a week, laboratory seven hours a week.

SYSC 4927 [1.0 credit]
Software Engineering Project
Student teams gain professional-level experience by applying and extending previously acquired knowledge in a major design project in software engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Software Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.
Lecture one hour a week, laboratory seven hours a week.

SYSC 4937 [1.0 credit]
Communications Engineering Project
Student teams gain professional-level experience by applying and extending previously acquired knowledge in a major design project in communications engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year status in Communications Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.
Lecture one hour a week, laboratory seven hours a week.
Technology, Society, Environment Studies (TSES)

Technology, Society, Environment (TSES)
COURSES

TSES 2006 [0.5 credit]
Ecology and Culture
Cultural adaptations to the environment are set within globalization processes. New symbolic, historical and political ecologies arise out of the hubris of classical models. The advocacy role of applied ecological anthropology and the consequences of Western cultures’ adaptive capacities will be examined.
Prerequisite(s): second year standing or equivalent. Lectures three hours a week.

TSES 2305 [1.0 credit]
Ancient Science and Technology
Development of science and technology in the ancient world and their practical application. The craftsman and artisan in society; the attitude of intellectuals to science and manual labour. Effects of the institution of slavery. Suitable for students with no previous knowledge of Greece or Rome. Also listed as CLCV 2305.
Prerequisite(s): second-year standing or equivalent. Lectures two hours a week.

TSES 3001 [0.5 credit]
Technology-Society Interactions
Ethical issues in introducing technology; historical review of technology and human development; effects on society of medical and communications technologies; automation and its effects on society, especially work; impact of technology on international affairs, especially through multinational enterprises. Guest lectures.
Includes: Experiential Learning Activity
Precludes additional credit for TSES 3000 and TSES 3500.
Prerequisite(s): at least second-year standing. Lectures and workshops three hours per week.

TSES 3002 [0.5 credit]
Energy and Sustainability
History of energy use by humans; utilization of renewable energy sources; energy and agriculture; energy and mineral resources; options for electricity generation; nuclear energy; risks of accidents in large systems, e.g. nuclear plants, hydroelectric dams. Guest lectures.
Includes: Experiential Learning Activity
Precludes additional credit for TSES 3000 and TSES 3500.
Prerequisite(s): at least second-year standing. Lectures and workshops three hours per week.

TSES 3500 [0.5 credit]
Interactions in Industrial Society
Ethical issues involving technology; effects on society of automation, medical and communications technologies; technology and international affairs; energy use by humans; renewable energy sources; energy in agriculture and mineral extraction; electricity generation; nuclear energy; accidents in large systems, e.g. nuclear plants and hydroelectric dams.
Precludes additional credit for TSES 3001, TSES 3002 and TSES 3000.
Prerequisite(s): at least second-year standing. Lectures three hours per week for both terms.

TSES 4001 [0.5 credit]
Technology and Society: Risk
Examines the complex practice of evaluating technology's impact on society and the environment; risk analysis; cost-benefit analysis; technology regulation; retrospective project assessment; necessary aspects of assessment and assessment examples. Guest lecturers.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or equivalent. Lectures and workshops three hours a week.

TSES 4002 [0.5 credit]
Technology and Society: Forecasting
Methods used for forecasting technological and social change; technological and social change portrayed in literature; science fiction factors involved in such change. Guest lecturers.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or equivalent. Lectures and workshops three hours a week.

TSES 4003 [0.5 credit]
Technology and Society: Innovation
Technological and social innovation, especially in Canada: historical examples; the relation of innovation to economic development; analysis of the steps involved; effect on employment; impediments and incentives. Guest lecturers.
Prerequisite(s): third-year standing or equivalent. Lectures and seminars three hours a week.

TSES 4005 [0.5 credit]
Information Technology and Society
Investigation of the human and social impacts of electronic information and communication on our working, educational, and personal lives from various disciplinary perspectives; problem issues and competing values in the creation, manipulation, dissemination, and control of information are identified; resolution initiatives encouraged. Guest lecturers.
Prerequisite(s): third-year standing or equivalent. Lectures and seminars three hours a week.
TSES 4006 [0.5 credit]
Technology and Society: Work
Explores the relationship between technology, employment and the individual; work organizations; employment restructuring; rural/urban split; the impact of information technologies; demographic impacts and globalization; Canadian issues and public policy explored. Guest lecturers.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or equivalent.
Lectures and workshops three hours a week.

TSES 4007 [0.5 credit]
Product Life Cycle Analysis
Life cycle analysis of products and processes, from resource extraction through design and use to waste management or recycling; social and environmental implications of product design and use; how we value material objects and the environment; consumerism; evolution of design. Guest lectures.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing or equivalent.
Lectures and workshops three hours a week.

TSES 4008 [0.5 credit]
Environmentally Harmonious Lifestyles
Brief history of humans as part of the ecosystem; religious and ethical views; current degree of ecosystem disturbance by industrial society; innovations in products and services furthering the sustainability of the ecosystem, emphasis on the Canadian context. Guest lecturers and a major project.
Prerequisite(s): third-year standing or equivalent.
Lectures and seminars three hours a week.

TSES 4009 [0.5 credit]
Special Topics
Reading course for students who wish to investigate a particular topic relevant to TSES.
Prerequisite(s): third-year standing or equivalent and permission of the Chair of TSE.

TSES 4010 [0.5 credit]
Special Topics
Specific topics of current interest. Topics may vary from year to year.
Prerequisite(s): third-year standing or equivalent.
Lectures three hours a week.

TSES 4011 [0.5 credit]
Technology and Society: Development
Created in collaboration with Engineers Without Borders Carleton, the course explores appropriate ways of meeting technological needs of communities. Uses Canadian and African case studies to examine how capacity building has a greater impact than simple delivery of technological goods.
Prerequisite(s): third-year standing or equivalent.
Lectures three hours a week.

TSES 4012 [0.5 credit]
Science and Fiction: Creating Tomorrow
Scenarios are used to speculate about the planned future. Science fiction and speculative fiction project ideas about imagined futures. Using readings from scenarios, speculative fiction and science fiction the course explores the mutual shaping of fiction, science and technology.
Prerequisite(s): third-year standing or equivalent.

TSES 4014 [0.5 credit]
Technology-Society: Time
Time is a universal human experience, but it presents some profound mysteries. It governs our behaviour on personal, societal and cultural levels. This course will bring together experts from physics, sociology, philosophy, biology, literature and psychology to illuminate our understanding.
Prerequisite(s): third-year standing or equivalent.
Lectures three hours a week.

Women's and Gender Studies (WGST)

Women's and Gender Studies (WGST) Courses

WGST 1808 [1.0 credit]
Introduction to Feminist Social Transformation
Overview of intersectional feminist debates as well as historical and contemporary theoretical traditions in gender and sexuality studies, critical race studies, and disability studies. Topics include the social construction of femininity, masculinity, and other identifications; Indigenous, decolonial, and transnational feminisms.
Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1402.
Lectures and discussion three hours a week.

WGST 2800 [0.5 credit]
Intersectional Identities
Critical examination of the multiple intersections between gender, as a relation of power and social identity, as these intersect with (neo)colonialism, racism, poverty, ableism and heterosexism in a globalized world.
Includes: Experiential Learning Activity
Prerequisite(s): one of WGST 1808, HUMR 1001, FYSM 1402 or FYSM 1403 or permission of the Institute of Women's and Gender Studies.
Lectures and discussion three hours a week.

WGST 2801 [0.5 credit]
Activism, Feminisms, and Social Justice
A comparative, interdisciplinary examination of feminist activism in the modern era. A range of perspectives and materials are used to examine the objectives, scope, and impact of feminists' efforts to effect social and political change in different historical, cultural, and national settings.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.
WGST 2803 [0.5 credit]
Body Matters: The Politics of Bodies
Introduction to feminist studies of globalization and politics of bodies. Globalization of ideas, cultures, economics and politics, movement of bodies, bodies as spaces for disrupting norms of sex, gender, race, class, ability, sexuality, embodiment and embodied resistance in a globalized world.
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 2811 [0.5 credit]
Masculinities
Theoretical, experiential, cultural and policy issues around masculinities studies. The complexities of masculinities; the intersections of feminist and masculinity studies. Topics may include hegemonic, racialized, homosexual, and Other(ed) masculinities. Feminist theories and transnational perspectives frame course content and discussions.
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 2812 [0.5 credit]
Selected Topics in Women's and Gender Studies
An interdisciplinary analysis of one or more topics in women's and gender studies.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week. This course is repeatable when the topic changes.

WGST 2814 [0.5 credit]
Gender, Sexuality and Cultural Production
How gender and cultural (re)production (literature, visual/performing arts, social media) and consumption articulate, circulate, and transform each other within economic, political, and social contexts. Emphasis on role, object, processes, and representations.
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 3001 [0.5 credit]
Theory and Research in Feminist Social Transformation
Interdisciplinary and intersectional approach introducing students to contemporary feminist, Indigenous, decolonial, and transnational theories, issues, conflicts, methodologies, and critiques of prevailing approaches to the construction of knowledge. Themes include, feminist epistemology, ontology, knowledge, and ethics in feminist research.
Includes: Experiential Learning Activity
Precludes additional credit for WGST 3809 (no longer offered), WGST 3810 (no longer offered).
Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute of Women's and Gender Studies.
Lecture three hours a week.

WGST 3803 [0.5 credit]
Feminisms and Transnationalism
Feminist analyses of the diversity of transnational experiences around rights, health, education, motherhood, fathering, work, social media and technological change, among others. Topics may include: migration, environment, wars/conflicts, neocolonialism, diaspora, human trafficking, refugee issues and displaced populations.
Prerequisite(s): third-year standing, and 1.0 credit in WGST; or permission of the Institute.

WGST 3806 [0.5 credit]
Girlhoods
The emerging discipline of girhood studies; social and cultural constructions of girhood and categories of difference. Topics may include the commercialization of girhood, popular culture and girls, negotiating identities, violence, sexualities, agency and activism in a globalizing world.
Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute.
Lecture three hours a week.

WGST 3807 [0.5 credit]
Gendered Violence
Theories, concepts and contexts of the complex manifestations of gendered violence in the lives of women, men and children globally.
Precludes additional credit for WGST 3005 Section "A", if taken in Winter 2012 and WGST 3005 Section "A" if taken in Fall 2009.
Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute of Women's and Gender Studies.
Lecture three hours a week.

WGST 3812 [0.5 credit]
Selected Topics in Women's and Gender Studies
An interdisciplinary analysis of one or more topics in women's and gender studies.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing.
Lecture three hours a week.

WGST 4003 [0.5 credit]
Traversing Feminisms
Interdisciplinary overview of key historical concepts and issues in Women's and Gender Studies in the areas of theory, epistemology, and research design. Topics will vary from year to year. Provides additional background for students entering Women's and Gender Studies from other disciplines.
Includes: Experiential Learning Activity
Prerequisite(s): permission of the Institute.
Also offered at the graduate level, with different requirements, as WGST 5003, for which additional credit is precluded.
Seminar three hours a week.
WGST 4800 [0.5 credit]
Women's and Gender Studies Practicum
Experience in research through a combination of classroom seminars and a field placement. Each project will be negotiated individually as a contract between the student, instructor and institutional partner. Includes: Experiential Learning Activity
Precludes additional credit for WGST 4903 (no longer offered).
Prerequisite(s): WGST 3809 and WGST 3810, and fourth-year standing with a minimum 6.5 CGPA in B.A. Hons. Women's and Gender Studies program or permission of the Institute.

WGST 4801 [1.0 credit]
Women's and Gender Studies Practicum
Experience in applied feminisms through a combination of classroom seminars and internship. Each project will be negotiated individually as a contract between the student, instructor and institutional partner. Students must complete both the in-class and the internship portion of the course. Includes: Experiential Learning Activity
Precludes additional credit for WGST 4800, WGST 4903 and WGST 4904 (no longer offered).
Prerequisite(s): WGST 3809, WGST 3810, and fourth-year standing with a minimum 6.5 CGPA in B.A. Hons. Women's and Gender Studies program or permission of the Institute.
Also offered at the graduate level, with different requirements, as WGST 5920, for which additional credit is precluded.
This full-credit course is offered intensively in one term.

WGST 4811 [1.0 credit]
Honours Research Project in Women's and Gender Studies
Students will undertake a major research project on some aspect of women's and gender studies under the supervision of a faculty member. Includes: Experiential Learning Activity
Prerequisite(s): a major CGPA of at least 11.00, plus WGST 3809 and WGST 3810 and fourth-year standing in B.A. Hons. Women's and Gender Studies program, or permission of the Institute of Women's and Gender Studies.

WGST 4812 [0.5 credit]
Selected Topics in Women's and Gender Studies
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing and 1.0 credit in Women's and Gender Studies or permission of the Institute of Women's and Gender Studies.
Seminar three hours a week. This course is repeatable when the topic changes.

WGST 4814 [0.5 credit]
Independent Study
Reading or research course supervised by a faculty member. Written proposal approved by the supervisor must be submitted before last day of course changes. Normally, only 0.5 credit of independent study may be counted in the program. Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in a Women's and Gender Studies program or permission of the Institute of Women's and Gender Studies.
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