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

AFRI 3004 [0.5]	The African City
ARCC 1202 [0.5]	History of Structures
ARCH 4002 [0.5]	Canadian Architecture
ARCH 4105 [0.5]	Theories of Landscape Design
ARCH 4206 [0.5]	Recycling Architecture in Canada and Abroad
ARCH 4502 [0.5]	Research and Criticism
ARCH 4505 [0.5]	Seminar in Theory and History
ARCU 2100 [0.5]	Special Topics in Urbanism
ARCU 3405 [0.5]	Urban Design
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 2610 [0.5]	Twentieth-Century Architecture
ARTH 3710 [0.5]	Architecture and Empire
ARTH 3810 [0.5]	A Closer Look at the Designed Environment
CDNS 2300 [0.5]	Critical Nationalism
CDNS 2400 [0.5]	Heritage Conservation in Canada
CDNS 3600 [0.5]	Cultural Politics and Identities in Canada
CDNS 4300 [0.5]	Contested Spaces and Communities
CDNS 4400 [0.5]	Cultural Landscape and Cultural Identity in Canada
CIVE 2005 [0.5]	Architectural Technology 2
CIVE 4303 [0.5]	Urban Planning
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions
ENST 4022 [0.5]	Seminar in People, Resources, and Environmental Change
FYSM 1107 [1.0]	Social Justice and the City
GEOG 1020 [0.5]	People, Places and Environments
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 4007 [0.5]	Special Topics in Geography and Environmental Studies
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change
GEOG 4023 [0.5]	Seminar in Special Topics on the City
GEOG 4304 [0.5]	Transportation Engineering and Planning
GEOM 3007 [0.5]	Cartographic Theory and Design
HIST 3209 [0.5]	Canadian Urban History
HUMR 3002 [0.5]	Right to the City

Conservation and Sustainability Core Electives

ARCC 4103 [0.5]	Energy and Form
ARCC 4300 [0.5]	Building Materials
ARCC 4400 [0.5]	Design for Construction
ARCC 4801 [0.5]	Architectural Technology
ARCH 3902 [0.5]	Theory of Architecture
ARCH 4004 [0.5]	Architectural Theory
ARCH 4105 [0.5]	Theories of Landscape Design
ARCH 4201 [0.5]	History of Modern Housing
ARCH 4206 [0.5]	Recycling Architecture in Canada and Abroad
ARCH 4502 [0.5]	Research and Criticism
ARCH 4505 [0.5]	Seminar in Theory and History
ARCH 4801 [0.5]	Special Topics
ARCS 4302 [1.0]	Conservation Studio 5
ARCU 4103 [0.5]	Cities
ARCU 4300 [0.5]	History of Theories of Urbanism
ARCU 4700 [0.5]	Urban Utopias
ARCU 4801 [0.5]	Topics in Urbanism
ARTH 1105 [0.5]	Art as Visual Communication
ARTH 2300 [0.5]	Italian Renaissance Art
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]
ARTH 2610 [0.5]	Twentieth-Century Architecture
ARTH 3107 [0.5]	History and Methods of Architectural History
ARTH 4005 [0.5]	Topics in Contemporary Indigenous Art
ARTH 4107 [0.5]	Topics in Islamic Architecture and Art
ARTH 4800 [0.5]	Topics in Architectural History
ARTH 5403 [0.5]	Architecture and Its Institutions
CDNS 2300 [0.5]	Critical Nationalism
CDNS 2400 [0.5]	Heritage Conservation in Canada
CDNS 3901 [0.5]	Selected Topics in Canadian Studies
CDNS 4300 [0.5]	Contested Spaces and Communities
CDNS 4400 [0.5]	Cultural Landscape and Cultural Identity in Canada
CDNS 4901 [0.5]	Selected Topics in Canadian Studies
CDNS 5301 [0.5]	Canadian Cultural Studies
CIVE 2700 [0.5]	Civil Engineering Materials
CIVE 3203 [0.5]	Introduction to Structural Analysis
CIVE 3204 [0.5]	Introduction to Structural Design
CLCV 2305 [1.0]	Ancient Science and Technology
ENVE 4106 [0.5]	Indoor Environmental Quality

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 3105 [0.5]	Climate and Atmospheric Change	
HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950	
HIST 3209 [0.5]	Canadian Urban History	
IDES 1001 [0.5]	Industrial Design Analysis	
IDES 3306 [0.5]	Special Studies	
MATH 1004 [0.5]	Calculus for Engineering or Physics (Design Core Electives)	

Design Core Electives

Category 1: History/Theory

ARCC 3502 [0.5]	Introduction to Architectural Conservation
ARCH 4002 [0.5]	Canadian Architecture
ARCH 4105 [0.5]	Theories of Landscape Design
ARCH 4200 [0.5]	Architectural Conservation Philosophy and Ethics
ARCH 4201 [0.5]	History of Modern Housing
ARCH 4206 [0.5]	Recycling Architecture in Canada and Abroad
ARCH 4505 [0.5]	Seminar in Theory and History
ARCH 4801 [0.5]	Special Topics
ARCH 5002 [0.5]	Architecture Seminar II
ARCU 4103 [0.5]	Cities
ARCU 4700 [0.5]	Urban Utopias
ARCU 4801 [0.5]	Topics in Urbanism
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
ARTH 3002 [0.5]	Canadian Architecture
ARTH 3003 [0.5]	Architecture and Representation
ARTH 3809 [0.5]	A Closer Look at Art and Visual Culture
ARTH 3810 [0.5]	A Closer Look at the Designed Environment
ARTH 4107 [0.5]	Topics in Islamic Architecture and Art
ARTH 4800 [0.5]	Topics in Architectural History
ARTH 4809 [0.5]	Topics in Art History and Criticism
CDNS 2300 [0.5]	Critical Nationalism
CDNS 3600 [0.5]	Cultural Politics and Identities in Canada
CDNS 3901 [0.5]	Selected Topics in Canadian Studies
CDNS 4300 [0.5]	Contested Spaces and Communities

CDNS 4400 [0.5]	Cultural Landscape and Cultural Identity in Canada
CDNS 4403 [0.5]	Heritage Conservation and Sustainability
CDNS 4901 [0.5]	Selected Topics in Canadian Studies
PHIL 1000 [0.5]	Introductory Philosophy: Fields, Figures and Problems
PHIL 1100 [1.0]	Looking at Philosophy
PHIL 1301 [0.5]	Mind, World, and Knowledge
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues
PHIL 2001 [0.5]	Introduction to Logic
PHIL 2003 [0.5]	Critical Thinking
PHIL 2005 [1.0]	Ancient Philosophy: The Search for Wisdom
PHIL 2103 [0.5]	Philosophy of Human Rights
PHIL 2106 [0.5]	Information Ethics
TSES 2006 [0.5]	Ecology and Culture
TSES 2305 [1.0]	Ancient Science and Technology
TSES 3001 [0.5]	Technology-Society Interactions
TSES 3002 [0.5]	Energy and Sustainability
TSES 4005 [0.5]	Information Technology and Society
TSES 4007 [0.5]	Product Life Cycle Analysis
TSES 4008 [0.5]	Environmentally Harmonious Lifestyles
TSES 4011 [0.5]	Technology and Society: Development
TSES 4012 [0.5]	Science and Fiction: Creating Tomorrow

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	
ARTH 4610 [0.5]	Topics in Modern Architecture or Design	
CIVE 2004 [0.5]	GIS, Surveying, CAD and BIM	
CIVE 2700 [0.5]	Civil Engineering Materials	
CIVE 3203 [0.5]	Introduction to Structural Analysis	
CIVE 3204 [0.5]	Introduction to Structural Design	
CIVE 3209 [0.5]	Building Science	
CIVE 4202 [0.5]	Wood Engineering	
CIVE 4303 [0.5]	Urban Planning	
CIVE 4400 [0.5]	Construction/Project Management	
CLCV 2305 [1.0]	Ancient Science and Technology	
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions	
ENVE 4105 [0.5]	Green Building Design	
ENVE 4106 [0.5]	Indoor Environmental Quality	
GEOG 1020 [0.5]	People, Places and Environments	
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 4021 [0.5]	Seminar in Culture, Identity and Place	
GEOG 4023 [0.5]	Seminar in Special Topics on the City	
GEOG 4304 [0.5]	Transportation Engineering and Planning	
GEOG 4323 [0.5]	Urban and Regional Planning	
HUMR 2202 [0.5]	Power Relations and Human Rights	
HUMS 1000 [1.0]	Myth and Symbol	
HUMS 2101 [0.5]	Art from Antiquity to the Medieval World	
IDES 1000 [0.5]	Theory and History of Design	
IDES 1001 [0.5]	Industrial Design Analysis	
IDES 3502 [0.5]	Contextual Nature of Products	
INDG 2011 [0.5]	Contemporary Indigenous Studies	
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing	
INDG 4001 [0.5]	Indigeneity in the City	
INDG 4011 [0.5]	Indigenous Representations	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	

Program Requirements

Design
B.A.S. (20.0 credits)

Requirements

1. 4.0 credits in:		4.0
ARCS 1005 [0.5]	Drawing	
ARCS 1105 [1.0]	Studio 1	
ARCN 2106 [0.5]	Introduction to Multimedia	
ARCH 1000 [0.5]	Introduction to Architecture	
ARTH 1200 [0.5]	History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.5]	History and Theory of Architecture: 1500 to Present	
ARCC 1202 [0.5]	History of Structures	
2. 4.0 credits in:		4.0
ARCH 2300 [0.5]	Introduction to Modern Architecture	
ARCC 2202 [0.5]	Architectural Technology 1	
CIVE 2005 [0.5]	Architectural Technology 2	
ARCN 2105 [0.5]	Digital Practice and Theory	
ARCC 2203 [0.5]	Architectural Technology 3	
ARCU 3100 [0.5]	The Morphology of the City	
ARCC 3202 [0.5]	Architectural Technology 4	
ARCC 4500 [0.5]	Design Economics	
3. 8.0 credits in:		8.0
ARCS 2105 [1.5]	Studio 2	
ARCS 2106 [1.5]	Studio 3	
ARCS 3105 [1.5]	Studio 4	
ARCS 3107 [1.0]	Studio 5	
ARCS 4105 [1.5]	Comprehensive Studio	
ARCS 4107 [1.0]	Option Studio	
4. 1.5 credits in History/Theory Design Core Electives		1.5
5. 1.5 credits in History/Theory or Complementary Studies Design Core Electives, or a combination of both		1.5

6. 1.0 credit in free electives		1.0
Total Credits		**20.0**

Urbanism
B.A.S. Honours (20.0 credits)

A. Credits Included in the Major (15.0 credits)

1. 1.5 credits in:		1.5
ARCH 1000 [0.5]	Introduction to Architecture	
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. 11.0 credits in:		11.0
ARCC 2202 [0.5]	Architectural Technology 1	
ARCC 2203 [0.5]	Architectural Technology 3	
ARCC 3202 [0.5]	Architectural Technology 4	
ARCC 4500 [0.5]	Design Economics	
ARCH 2300 [0.5]	Introduction to Modern Architecture	
ARCH 4201 [0.5]	History of Modern Housing	
ARCS 2303 [1.0]	Urbanism Studio 1: Fundamentals of Urbanism	
ARCS 3303 [1.0]	Urbanism Studio 2: Urbanism in the Core	
ARCS 3304 [1.0]	Urbanism Studio 3: Urbanism on the Periphery	
ARCS 4105 [1.5]	Comprehensive Studio	
ARCS 4304 [1.0]	Urbanism Studio 5: Global Perspectives	
ARCU 3100 [0.5]	The Morphology of the City	
ARCU 4103 [0.5]	Cities	
ARCU 4300 [0.5]	History of Theories of Urbanism	
ARCU 4700 [0.5]	Urban Utopias	
ARCU 4801 [0.5]	Topics in Urbanism	

3. 2.5 credits in:		2.5
GEOG 4323 [0.5]	Urban and Regional Planning	
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2200 [0.5]	Global Connections	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOM 2007 [0.5]	Points, Lines and Polygons	

B. Credits Not Included in the Major (5.0 credits)

4. 2.0 credits in:		2.0
ARCN 2106 [0.5]	Introduction to Multimedia	
ARCS 1005 [0.5]	Drawing	
ARCS 1105 [1.0]	Studio 1	

5. 0.5 credit in:		0.5
ARCN 2105 [0.5]	Digital Practice and Theory	

6. 1.5 credit in Urbanism core electives.		1.5
7. 1.0 credit in free electives.		1.0
Total Credits		**20.0**

Conservation and Sustainability
B.A.S. Honours (20.0 credits)

A. Credits Included in the Major (15.0 credits)

1. 2.0 credits in:		2.0
ARCH 1000 [0.5]	Introduction to Architecture	
ARTH 1200 [0.5]	History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.5]	History and Theory of Architecture: 1500 to Present	
ARCC 1202 [0.5]	History of Structures	

2. 10.5 credits in:		10.5
ARCH 2300 [0.5]	Introduction to Modern Architecture	
ARCH 4200 [0.5]	Architectural Conservation Philosophy and Ethics	
ARCC 2202 [0.5]	Architectural Technology 1	
ARCC 2203 [0.5]	Architectural Technology 3	
ARCC 3202 [0.5]	Architectural Technology 4	
ARCC 3502 [0.5]	Introduction to Architectural Conservation	
ARCC 4500 [0.5]	Design Economics	
ARCH 4002 [0.5]	Canadian Architecture	
ARCC 4207 [0.5]	Advanced Building Assessment	
ARCS 2302 [1.0]	Conservation Studio 1	
ARCS 3301 [1.0]	Conservation Studio 2	
ARCS 3302 [1.0]	Conservation Studio 3	
ARCS 4301 [1.5]	Conservation Studio 4	
ARCU 3100 [0.5]	The Morphology of the City	
ARCN 4100 [0.5]	Historic Site Recording and Assessment	
ARCN 4200 [0.5]	Building Pathology and Rehabilitation	

3. 2.5 credits in:		2.5
CDNS 2400 [0.5]	Heritage Conservation in Canada	
CIVE 2005 [0.5]	Architectural Technology 2	
CIVE 2200 [0.5]	Mechanics of Solids I	
ENVE 4105 [0.5]	Green Building Design	
ENVE 1001 [0.5]	Architecture and the Environment	

B. Credits Not Included in the Major (5.0 credits)

4. 2.0 credits in:		2.0
ARCN 2106 [0.5]	Introduction to Multimedia	
ARCS 1005 [0.5]	Drawing	
ARCS 1105 [1.0]	Studio 1	

5. 0.5 credit in:		0.5
ARCN 2105 [0.5]	Digital Practice and Theory	

6. 1.5 credits in Conservation and Sustainability core electives		1.5
7. 1.0 credits in free electives		1.0
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.

• 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.

B.A.S. Design

The B.A.S. Design follows the academic performance evaluation regulations for Engineering and Design programs as described in section 3.2 of the Academic Regulations of the University.

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:

B.A.S. Design

ARCS 1005 [0.5]	Drawing
ARCS 1105 [1.0]	Studio 1
ARCS 2105 [1.5]	Studio 2

ARCS 2106 [1.5]	Studio 3
ARCS 3105 [1.5]	Studio 4
ARCS 3107 [1.0]	Studio 5
ARCS 4105 [1.5]	Comprehensive Studio
ARCS 4107 [1.0]	Option Studio

B.A.S. Urbanism

ARCS 1005 [0.5]	Drawing
ARCS 1105 [1.0]	Studio 1
ARCS 2303 [1.0]	Urbanism Studio 1: Fundamentals of Urbanism
ARCS 3303 [1.0]	Urbanism Studio 2: Urbanism in the Core
ARCS 3304 [1.0]	Urbanism Studio 3: Urbanism on the Periphery
ARCS 4105 [1.5]	Comprehensive Studio
ARCS 4304 [1.0]	Urbanism Studio 5: Global Perspectives

B.A.S. Conservation and Sustainability

ARCS 1005 [0.5]	Drawing
ARCS 1105 [1.0]	Studio 1
ARCS 2302 [1.0]	Conservation Studio 1
ARCS 3301 [1.0]	Conservation Studio 2
ARCS 3302 [1.0]	Conservation Studio 3
ARCS 4301 [1.5]	Conservation Studio 4
ARCC 3502 [0.5]	Introduction to Architectural Conservation

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.

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 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:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	W	Summer	W/S		

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 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 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 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 phenomenom. 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, 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
Introduction to structural design in timber. Properties, anatomy of wood, wood products, factors affecting strength and behaviour, strength evaluation and testing. Design of columns, beams and beam-columns. Design of trusses, frames, glulam structures, plywood components, formwork, foundations, connections, connectors. Inspection, maintenance and repair. (Elective course).
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 sties 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
Principles of building economics. Determinants and prediction of building costs. Uncertainty and investment economics. Creative cost control for buildings during schematic design, design development, construction document preparation and construction. Economic evaluation during all phases of design process; emphasis on sustainable strategies.
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.

ARCN 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).
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
18 th - and 19 th- 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.

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.