Chemistry

Program Requirements

M.Sc. Chemistry (5.0 credits)
Requirements:
1. 1.0 credit in:
   - CHEM 5801 [1.0] Seminar I
2. 1.0 credit in CHEM graduate courses
3. 3.0 credits in:
Total Credits 5.0

M.Sc. Chemistry with Collaborative Specialization in Biochemistry (5.0 credits)
Requirements:
1. 1.0 credit in:
   - CHEM 5800 [0.5] Seminar in Biochemistry I
   - CHEM 5806 [0.5] Advances in Applied Biochemistry
2. 1.0 credit in:
   - CHEM 5801 [1.0] Seminar I
3. 3.0 credits in:
Total Credits 5.0

M.Sc. Chemistry with Specialization in Chemical and Environmental Toxicology (5.0 credits)
Requirements:
1. 1.0 credit in:
   - BIOL 6402/ CHEM 5708 [0.5] Principles of Toxicology
   - CHEM 5705/ BIOL 6403 [0.5] Ecotoxicology
   - BIOL 6405/ CHEM 5805 [0.5] Seminar in Toxicology
2. 1.0 credit in:
   - CHEM 5801 [1.0] Seminar I
3. 3.0 credits in:
Total Credits 5.0

M.Sc. Chemistry with Concentration in Food Science and Nutrition (5.0 credits)
Requirements:
1. 1.0 credit in:
   - FOOD 5801 [1.0] Seminar I
2. 0.5 credit in FOOD at the graduate level
3. 0.5 credit in CHEM or FOOD at the graduate level, or, with permission of the department in another discipline
4. 3.0 credits in:
Total Credits 5.0

Ph.D. Chemistry (10.0 credits)
Requirements:
1. 2.0 credits in:
   - CHEM 5801 [1.0] Seminar I
   - CHEM 5802 [1.0] Seminar II
2. 2.0 credits in CHEM graduate courses
3. A two-part comprehensive examination in Chemistry (see Note below)
4. 6.0 credits in:
   - CHEM 6909 [6.0] Ph.D. Thesis
Total Credits 10.0

Ph.D. Chemistry with Collaborative Specialization in Biochemistry (10.0 credits)
Requirements:
1. 1.0 credit in:
   - CHEM 5806 [0.5] Advances in Applied Biochemistry
   - CHEM 6800 [0.5] Seminar in Biochemistry II
2. 2.0 credits in:
   - CHEM 5801 [1.0] Seminar I
   - CHEM 5802 [1.0] Seminar II
3. 1.0 credit in graduate courses
4. A two-part comprehensive in Chemistry (see Note below)
5. 6.0 credits in:
   - CHEM 6909 [6.0] Ph.D. Thesis (in the specialization)
6. At least three years of full-time study
Total Credits 10.0

Ph.D. Chemistry with Specialization in Chemical and Environmental Toxicology (10.0 credits)
Requirements:
1. 1.5 credits from:
   - CHEM 5708/ BIOL 6402 [0.5] Principles of Toxicology
   - CHEM 5705/ BIOL 6403 [0.5] Ecotoxicology
   - CHEM 5805 [0.5] Seminar in Toxicology (not required for students who have already completed the Seminar in Toxicology for the Master's specialization)
2. 2.0 credits in:
   - CHEM 5801 [1.0] Seminar I
   - CHEM 5802 [1.0] Seminar II
3. 0.5 credit in additional graduate courses
4. A two-part comprehensive examination in Chemistry (see Note below)
5. 6.0 credits in:
   - CHEM 6909 [6.0] Ph.D. Thesis (in the specialization)
6. At least three years of full-time study
Total Credits 10.0

Ph.D. Chemistry with Concentration in Food Science and Nutrition (10.0 credits)
Requirements:
1. 2.0 credits in:
   - FOOD 5801 [1.0] Seminar I
   - FOOD 5802 [1.0] Seminar II
2. 1.0 credit in FOOD at the graduate level 1.0
3. 1.0 credit in CHEM or FOOD at the graduate level, or, with permission of the department, in another discipline 1.0
4. A two-part comprehensive examination in Food Science and Nutrition
5. 6.0 credits in: 6.0

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<th>Course</th>
<th>Credits</th>
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<tr>
<td>FOOD 6909 [6.0] Ph.D. Thesis (in the specialization)</td>
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Total Credits 10.0

Comprehensive examination Part 1 examines the depth and breadth of knowledge in the student's own research area.

Comprehensive examination Part 2 will involve the submission of a research proposal that is both novel and of a sound scientific basis that may be loosely related to the thesis research of the student but not a topic that the student has investigated in any manner. The research proposal will be submitted to a committee for oral defense.

Failure to pass either part of the comprehensive examination will result in deregistration from the graduate program.

**Program Requirements from M.Sc. Chemistry**

- Only one seminar course will be required if a grade of at least A- has been obtained in Seminar I (CHEM 5801 [1.0] or equivalent). In addition, credit for up to 1.0 credit of graduate courses may be given to reduce the requirement for graduate course credit from two to one, if a grade of at least an A- has been obtained in each of the courses taken during M.Sc. Students must complete their comprehensive examination within two years or be withdrawn from the program.

**Regulations**

See the General Regulations section of this Calendar.

**Residence Requirement**

At least one year of full-time study is required for the M.Sc. program.

**Guidelines for Completion of Master's Degree**

Full-time students in the master's program will normally complete the degree requirements in two years. Part-time students will normally complete the degree requirements in four years.

**Regulations**

See the General Regulations section of this Calendar.

**Thesis Advisory Committee**

Within four months of initial registration in the Ph.D. program, a Thesis Advisory Committee (TAC) will be appointed for each student. The committee will consist of a minimum of three members, including the thesis supervisor and, where practicable, at least one member will be from the other campus of OCCI. Committee membership may include adjunct faculty members of the Faculty of Graduate and Postdoctoral Studies (FGPS) at the University of Ottawa or the Faculty of Graduate Studies and Research at Carleton.

Once a year, the student will prepare a formal Thesis Progress Report. The report is not to exceed one page and will outline the problem, methodology used, results achieved, and aims for future research. The TAC will evaluate the report and indicate whether the student has made satisfactory progress. A meeting to discuss the student's progress may be held at any time at the request of either the student or the committee.

**Admission**

Honours B.Sc. degree in Chemistry, with a B+ average in the last two years and a B average overall.

Applicants who do not meet this requirement, or whose undergraduate degree is in another, closely related field, may be accepted into the program, but may be assigned extra courses.

**Qualifying Year**

Applicants who do not qualify for direct admission to the Master's program may be admitted to a qualifying-year program (see 2.3 under General Regulations).

5.0 credits must be completed within two consecutive fall and winter terms, including a 1.0 credit Research Project and Seminar course (CHEM 4908 [1.0]), and 4.0 credits in 0.5- and 0.25-credit courses, as assigned by the Graduate Supervisor. An average grade of A- over these five credits, with a minimum grade of B in each course must be presented to be considered for admission to the M.Sc. program.

**Orientation Examinations**

Students coming from outside Canada or the United States must write orientation examinations at approximately the third-year university level. Each student will be informed of this requirement upon admission. The examinations will be given in the first week of the term in September and January. Students can choose from any three examination modules in: organic, physical, inorganic/analytical, and biochemistry.

In examination areas where the student shows unsatisfactory performance or deficiency, the Graduate Supervisor will assign undergraduate-level remedial courses. To be eligible to continue in the graduate program, the student must achieve a minimum grade of A- in each remedial course.

**Admission**

The normal requirement for admission to the Ph.D. program is an M.Sc. degree in Chemistry. Direct entrance from a B.Sc. degree in Chemistry will be considered in exceptional cases.

**Orientation Examinations**

Students coming from outside Canada or the United States must write orientation examinations at approximately the third-year university level. Each student will be informed of this requirement upon admission. The examinations will be given in the first week of the term in September and January. Students can choose from any three examination modules in: organic, physical, inorganic/analytical, and biochemistry.
In examination areas where the student shows unsatisfactory performance or deficiency, the Graduate Supervisor will assign undergraduate-level remedial courses. To be eligible to continue in the graduate program, the student must achieve a minimum grade of A- in each remedial course.