



What can you expect in terms of timelines and program requirements for a Ph.D?

Ph.D. Program

PROGRAM TIME LIMITS

9 terms from a M.Sc. degree

12 terms from an Honours B.Sc. degree (direct transfers)

The number of terms specified in these time limits apply regardless of whether the student is registered full-time or part-time.

Students who run over their time limit **may not be guaranteed financial support**. It is the student's responsibility to ensure that he/she has completed all the requirements and written his/her thesis within the time limit (six terms for an M.Sc.; nine terms for a Ph.D. after M.Sc.; twelve terms for a Ph.D. after B.Sc.).

PROGRAM REQUIREMENTS

Regular Option: Students in the Ph.D. program must successfully complete two additional one term courses beyond those required for the Master's degree, pass an oral comprehensive examination, present a 30-minute seminar, and submit and defend an acceptable thesis. Half of the graduate courses must be taken within the Department of Chemistry. One of the two graduate courses may be taken through other departments within their registered University or students may request a transfer credit for a course taken from another University to meet the course requirements. Students are advised to consult with their supervisor in the selection of courses.

Direct Entry from B.Sc.: This option is possible for outstanding students who graduated with an overall 'A' standing at the undergraduate level. Students in this program must successfully complete four regular graduate courses, plus the M.Sc. Seminar, the Ph.D. Seminar and the Ph.D. oral comprehensive examination and submit and defend an acceptable thesis.

Direct Transfers To Ph.D. From M.Sc.: Exceptional students may transfer directly into the Ph.D. program without first completing all of the M.Sc. requirements. The following guidelines will be applied in consideration of applications for such a transfer.

- ✓ The applicant who is applying for direct transfer must have demonstrated a superior academic record both at the undergraduate and graduate level. This will normally mean that the student has a minimum overall B+ average as an undergraduate and has demonstrated a first-class standing with consistently above average performance in at least two graduate courses as well as in the Masters Seminar.
- ✓ The applicant must have already demonstrated an oral and written communication ability appropriate for a Ph.D. level student. In addition, there must be clear evidence of research productivity and promise.
- ✓ The request will be considered by the Director/Coordinating Committee at the end of the student's third term in the M.Sc. program. If the result is positive, the Director will forward this recommendation and supporting documentation to the Dean of Graduate Studies.
- ✓ Students in the program must successfully complete, in total, five regular graduate courses, plus the M.Sc. Seminar, the Ph.D. Seminar and the Ph.D. oral comprehensive examination and submit and defend an acceptable thesis.

Ph.D. Coop Option, Direct from BSc: Under this option four of the six required one-term courses, including the Master's Seminar, must be completed within the first two academic terms in residence in the Centre. After successful completion of these two terms of coursework, the candidate will spend one year (three terms) working in an industrial or governmental laboratory. Registration in the Co-operative Option commits students to the acceptance of employment either through a regular interview procedure organized by the Department of Co-operative Education and Career Services, or, where their interests are best served, on an assignment that the Centre may determine. On completion of the work year, a student will be required to submit a work report which will be evaluated by the Centre and the Co-operative Education and Career Services Department. During the work-terms, the student is paid by the host organization a salary that is based on the student's experience and the host's salary scale. When the student returns to the campus following the work term he/she will find a supervisor. The research project chosen need not bear any relation to the job experience. The student will complete any graduate courses which are needed, a seminar on their research topic, the oral comprehensive examination and complete and defend a thesis.

A student is eligible to apply for admission to the Ph.D. Co-operative option if he/she has a first class Honours Bachelor of Science degree, or the equivalent, from an accredited university and is restricted to Canadian citizens or landed immigrants.

PROGRAM REGULATIONS

Admission Standards

The minimum academic requirements normally consist of a Master's degree in Science from a recognized university. Strong emphasis is also placed on the letters of recommendation received in support of the student's application. Students from foreign countries where English is not the language of instruction are also required to prove their proficiency in English through a TOEFL exam and may be required to complete a GRE (Graduate Record Examination) in Advanced Chemistry to assist the Director in assessing their academic background.

Courses

All graduate courses in (GWC)² have final examinations, unless prior to the start of the course, the course instructor has proposed an alternate rigorous method of assessment to the Director. Although the overall method of evaluation is left up to the individual professors, general monitoring has shown the method of assessment to include assignments, a mid-term and final examination. All graduate courses are evaluated by the students each semester with respect to the course content and to the performance of the professors. These evaluations are kept on file in the Centre Office and are made available to the instructors for their information.

Academic Integrity (Plagiarism)

Please review the following websites regarding academic integrity (plagiarism):

University of Guelph: www.academicintegrity.uoguelph.ca

University of Waterloo: Policy 71 - Student Academic Discipline Policy
(<http://secretariat.uwaterloo.ca/Polices/policy71.htm>)

Plagiarism and Other Written Offences
(http://arts.uwaterloo.ca/arts/ugrad/academic_responsibility.html)

Academic Integrity
<http://uwaterloo.ca/academicintegrity>

Doctoral Seminar Requirement

This seminar [Chemistry 795(0)] is a credit (CR) requirement. Students must complete this requirement within six months of entry into the Ph.D. program. It is about a 30 minute presentation, and is usually based on the thesis research topic. As with the M.Sc. seminar, the goal is not the presentation of new data, but an explanation of the thesis research area which should be geared to a general audience of chemists. At the conclusion of the open discussion period following your seminar presentation, you may have your annual Supervisory Committee meeting. Please note it is a Faculty of Science policy that all Ph.D. students are required to hold a Supervisory Committee meeting once a year following the Doctoral Seminar to informally present and discuss the progress made in your research project.

Doctoral Oral Comprehensive Requirement

The examination will normally be of the oral type. To facilitate the selection of topics to be covered, the student will present a research seminar [Chemistry 795(0)] not more than 6 months after entry into the program for regular students and not later than 6 months after returning from work term for Co-op students. Immediately following the Chemistry 795(0) presentation, the student's Ph. D. Advisory Committee, in consultation with the student's supervisor(s), will define the topics to be covered. The Comprehensive/Qualifying Examination will be scheduled to occur within six (6) to twelve (12) weeks of the Chemistry 795(0) presentation, but must take place in the second term. The candidate is given the paper 30 minutes before the examination and allowed to collect his/her thoughts, write down formulae, etc. In general, the student will be asked to complete 6 questions chosen from among the 9 on the examination paper. There will be an approximate time limit of 15 minutes per question. The student may, if he/she so desires, request one ten minute break in the proceedings to gather his/her thoughts.

Timing of PhD Seminar and Comprehensive Exam

For regular entry PhD students, the PhD Seminar and Comprehensive Exam is held in the second term of their program.

For PhD Direct Entry students, it is the fifth term. For the PhD Direct Entry students, the first three terms are the equivalent of a MSc program, thus the 4th term is the equivalent 1st term of the regular PhD program and thus the 2nd term falls on their 5th term.

For a PhD transfer from an MSc program, the student can apply in their 3rd term as a MSc Student to the PhD program. If accepted, they start their 1st term as a PhD student in their 4th term and thus their equivalent 2nd term as a PhD student is their 5th term.

Ph.D. Thesis

Students are required to seek out the advice of the Advisory Committee during the preparation of the thesis and provide them with a copy of the thesis to the Advisory Committee before it is submitted to the Examining Committee. The Advisory Committee should be given a minimum of two weeks to review the thesis. It is the student's responsibility to consult with each member of the Advisory Committee to make sure to allow for sufficient time for the Committee to read and comment on the thesis. Once the Advisory Committee agrees that the thesis is ready for submission a date for the defence can be set.

To reward strong performances in seminar presentations, a prize of \$100 is awarded annually on each campus of the Centre for the best Masters and Doctoral seminar.