



## Graduate Studies in the Department of Chemistry University of New Brunswick

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This document should be read by all graduate students of the Graduate Academic Unit (GAU) in the Department of Chemistry on a regular basis. Additional information (regulations, requirements etc.) on the School of Graduate Studies (SGS) appear in the UNB Graduate Calendar (available on the UNB website). If there is any conflict between this document and that of the School of Graduate Studies regulations, the latter will prevail.

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### 1. Safety Orientation

Supervisors are responsible for giving their students the appropriate training to work safely in the space where they will conduct research. The Departmental Safety Committee will provide all new researchers with WHMIS training and general safety training relating to the policies and procedures for Department itself. *It is the joint responsibility of the student and supervisor to inform the Safety Committee of the name and email address of the new student so that this training can be arranged in a timely manner.* Students will also be added to the *Department of Chemistry Safety Committee* "course" on Desire2Learn, which will give you access to policies, procedures and other safety-related information.

### 2. Program Advisory Committee

Each student accepted for graduate study in Chemistry will generally pursue a research program under the direction of one faculty member (the supervisor). The overall graduate program of each student is under the direction of a program advisory committee comprising the supervisor and at least two other faculty members.

Students are responsible (with consultation from their supervisors and the DoGS) for finding at least two members (normally one faculty member in the same general field of research and another faculty member outside the field of research) who will form this committee along with their supervisor. Meet with your Advisory Committee and complete the Program of Study form. *This must be done within the first month of starting their program.*

Conflict resolution should follow this chain of command:

- A. Supervisor

- B. Committee members
- C. Director of Graduate Studies
- D. Department Chair
- E. Dean of Science

It is the responsibility of the graduate student to schedule Advisory Committee meetings. At least one such meeting must be held before the end of October each year. During these meetings, students make a brief presentation of progress with their research and report which required courses (including seminar courses) have been completed. They also outline future plans for completing their degree requirements including their research project and the writing of the thesis.

Progress will be recorded using the SGS "Annual Progress Report" form as well as the Report of Graduate Program Advisory Committee. Both forms can be received from the Graduate Studies Coordinator. The student will bring the form to the meetings, bookings of the meeting room (typically Toole Hall, Room 244) and a laptop and AV projector are made by contacting the Department's Administrative Assistant (Krista Coy, Toole Hall, Room 15, [coyy@unb.ca](mailto:coyy@unb.ca)). Either the student or the supervisor can request additional meetings of the Program Advisory Committee at any time. Such meetings are meant to solve unexpected problems that either the student or supervisor are facing.

The Advisory Committee acts on behalf of the student in requesting a transfer from an MSc program to a PhD program and in requesting the extension of a graduate program. In both cases, the committee should meet with the student and then present any recommendations to the Director of Graduate Studies.

Thesis Reading/Examining Committees for Defense', it is normally expected that 1 Advisory Committee member will serve as Reading Committee for GAU approval and the other as Examining Committee member.

### **3. Keys**

Keys for the building and laboratory spaces can be obtained from the Department's Administrative Assistant (Krista Coy, Toole Hall, Room 15, [coyy@unb.ca](mailto:coyy@unb.ca)). A deposit of \$50 for the first key, plus \$10 per additional key is required, and will be refunded once the keys are returned.

### **4. Chematix**

UNB uses a university wide, searchable, database to track amounts and locations of all chemicals. Any students who work in a lab that will order, store or use and chemicals should contact the Departmental Safety Committee so that they can be entered into the system. Note that supervisors must subsequently assign roles and locations for students, to enable them to add/remove chemicals from the list. The web address for the database is: <https://cheminv.unb.ca/Chematix/> Instructions for its use can be found on the *Department of Chemistry Safety Committee* "course" on Desire2Learn.

## 5. Courses

For each year of study, students must register in the appropriate thesis courses: CHEM 6997 for MSc and CHEM 6998 for PhD.

Graduate level courses are those numbered as 6000 or above. A list of courses is available here: <https://eservices.unb.ca/calendar/graduate/display.cgi?tables=coursesSubLevel1&id=33>.

Graduate course offerings vary from year to year based on need. In almost all years, the 3ch courses, CHEM6112, 6222, 6422, and 6622, are taught simultaneously with the 2ch undergraduate courses, CHEM4112, 4222, 4422, and 4622 respectively. The graduate 6x22 courses require the student to do some extra work relative to the undergraduates taking the 4x22 courses. Your Supervisor and Advisory Committee should approve the courses.

Minimum course requirements are:

Inorganic, Physical and theoretical:

CHEM6000 Series Seminar

Plus for MSc: two term courses at the 4000 level or higher

Plus for PhD: three term courses at the 4000 level or higher

Organic/Bio-organic:

CHEM6000 Series Seminar

CHEM6460 Group Seminar

Plus for MSc one of the following / PhD two of the following:

CHEM6401 Organic Materials.

CHEM6402 Modern Synthetic Methods.

CHEM6403 Supramolecular Chemistry.

CHEM6404 Asymmetric Synthesis: C-C Bond Formation.

CHEM6405 Stereoelectronic Effects.

CHEM6406 Molecular Modelling.

CHEM6407 Organic Structure Determination Using NMR Spectroscopy.

Plus MSc & PhD: one term course at the 4000 level or higher

The advisory committee must approve the selection of all courses. Additional courses may be required and will be determined by the committee in consultation with the Director of Graduate Studies. Term courses must be at least three credit hours. Where the PhD program follows an MSc, the course requirements will be determined by the committee.

## 6. Seminars

The non-thesis related seminars will be scheduled by the CHEM6000 coordinator early in the term. It is the student's responsibility to register for the appropriate seminar course each year. Departmental seminars on the thesis topic (which must be completed 6 months before the anticipated defense date) must be scheduled through the Departmental Seminar Coordinator. Titles and abstracts for all seminars must be submitted to the Science Graduate Coordinator (Heidi Stewart, [scigrad@unb.ca](mailto:scigrad@unb.ca)) at least 2 weeks before the presentation date.

MSc students are required to present one Series Seminar on a non-thesis topic, and one Departmental Seminar on a research topic.

PhD students are required to present one Series Seminar per year on non thesis topics. (maximum of three) towards the degree, and one Departmental Seminar on the research topic.

## **7. Qualifying Comprehensive Exam**

PhD students and MSc students transferring to a PhD program are required to pass a Qualifying Exam in the first 16 months of their program.

Each PhD candidate is required to prepare a written research proposal and literature review on their thesis topic and present the proposal at a meeting of their advisory committee. Following the presentation the committee will conduct an oral comprehensive examination of the candidate, who will be expected to defend the proposal and demonstrate familiarity with the relevant literature and competency in the subject area at the senior undergraduate level. The presentation and comprehensive exam will be chaired by the Director of Graduate Studies or a designate who is not a member of the candidate's advisory committee. Copies of the written proposal and literature review must be provided to the members of the advisory committee a minimum of one week in advance of the presentation and exam.

It is the responsibility of the student to arrange, at least one month in advance, for the scheduling of the exam at a mutually convenient time.

The research proposal and comprehensive exam will be assessed on a pass/fail (satisfactory/unsatisfactory) basis. In the event that the result is not wholly satisfactory, the committee may require one or more of the following actions by the student:

- Revise and resubmit the written research proposal and literature review.
- Successfully complete \ supplementary coursework (i.e.: outside of the normal degree requirements) to address deficiencies in the candidate's background.
- Repeat the proposal presentation and comprehensive examination within six months.
- Withdraw from PhD program.

A student who fails the comprehensive exam a second time will normally be required to withdraw from the PhD program.

The written research proposal and literature review should be prepared in compliance with the general formatting guidelines outlined by the School of Graduate Studies for graduate theses and reports.

Students should discuss with their supervisor any additional style or formatting requirements that may be followed in their research group. Students are encouraged to use one of the templates available from the [Electronic theses and Dissertations](#) website. Templates and user manuals are available for download. It is expected that this report will provide a useful starting point for the introductory sections of the student's doctoral thesis. See the [Regulations and Guidelines](#) document found under "Theses, dissertations and report guidelines".

To help provide consistency in the comprehensive exams, these will normally be chaired by the Director of Graduate Studies. In the event the DoGS is a member of the candidate's advisory committee, another faculty member of the Graduate Affairs Committee who is not a member

of the advisory committee may chair the comprehensive exam. The chair of the exam may participate in the questioning of the candidate.

The candidate's summary presentation should be 20-30 minutes in duration. The entire meeting should be completed within two hours.

Candidates should expect questions relating to their presentation and literature review as well as questions testing their background knowledge both within their research discipline and in general chemistry.

### **8. Theses and Defense**

The initial stages of the thesis submission and review process are the same for MSc and PhD theses:

1 – Students must complete their Departmental Seminar 6 months prior to expected Defense. This is a 45-50 minute research seminar scheduled as part of the regular departmental seminar series.

2 – Thesis is submitted to the Chemistry office for GAU approval. GAU will appoint two readers who will review the thesis, identifying any deficiencies and providing a written recommendation to the Director of Graduate Studies regarding whether GAU approval for the thesis should be granted. Corrections and revisions will be communicated to the student. While the readers are encouraged to point out typographical, spelling and grammatical errors in the thesis, it is not their responsibility to act as copy editors. If the number of errors is excessive, the thesis will be returned to the student for further editing and revision prior to consideration for GAU approval. The Reading Committee is asked to submit their report within one week.

3 – Both the Reading Committee and Advisory Committee sign the Chemistry Committees Approval form and submit it to the Graduate Studies Coordinator.

4 – Student revises the thesis as necessary following comments from Reading Committee. For well-written theses with no scientific issues to resolve, this may require less than one week. In other cases, considerably more time may be required. If major revisions are required, it may be necessary to resubmit the thesis to the GAU readers for review following the revision.

The entire MSc Defense process is handled with the Chemistry GAU. The final thesis is submitted to the School of Graduate Studies following the successful oral examination. Once steps 1-4 (above) have been completed, the MSc theses proceeds as follows:

5 – The thesis is forwarded to the examining committee. Examiners are asked to complete their assessments of the thesis within 3 weeks. They submit the completed and signed Examining Committee Approval form to the Graduate Studies Coordinator.

6 – A minimum one week's notice must be given for the oral exam. A Defense package will be prepared and delivered to Chair of Defense (usually DoGS), following the oral defense all paperwork should be reviewed and signed by all parties and returned to Graduate Studies Coordinator.

7 – Student makes any necessary final corrections and revisions to the thesis as required, then reviewed by SGS for formatting.

8 – Final copies of the thesis are printed, placed in blue boxes with labels and delivered to SGS and HIL with the appropriate paperwork.

Following GAU approval (Steps 1-4), the PhD theses approval and examination process is handled by the School of Graduate Studies. The following is only a guide, based on estimates of time required, the School of Graduate Studies is the definitive authority on these procedures.

5 – The Supervisor submits 4 potential External Examiners to the DoGS, who chooses one and verifies their willingness to be an examiner.

6 – The thesis and accompanying forms are submitted to the School of Graduate Studies, where they are reviewed for completeness.

7 – SGS confirms the composition of the examining board and forwards the thesis to the members of the examining board, including the external examiner. Examiners are asked to complete their assessments of the thesis within one month.

8 – SGS receives the reports on the thesis from the examining board and confirms that the thesis has been deemed ready to proceed to oral examination. The oral examination is scheduled by the SGS upon consultation with the individuals involved.

9 – A minimum one weeks' notice must be given for the oral exam.

10 – Following a successful oral examination, the candidate makes any necessary final corrections and revisions to the thesis, as required by the examining board. All necessary paperwork is completed and the final thesis and accompanying paperwork are submitted to the School of Graduate Studies.

The deadlines to apply (online) to graduate are March 1st for the May Encaenia or by Sept 1st for Fall Convocation: <http://www.unb.ca/graduation/> .

International Students who wish to invite family members to attend graduation should complete the Invitation Letter Request and submit it to the School of Graduate Studies.

**Websites:**

[http://www2.unb.ca/chem/Grad\\_programs.htm](http://www2.unb.ca/chem/Grad_programs.htm)

[http://www2.unb.ca/chem/Grad\\_policies.htm](http://www2.unb.ca/chem/Grad_policies.htm)

<http://www.unb.ca/gradstudies/index.html> (includes a link to the calendar of academic dates for grad students)