Graduate Studies in the Department of Chemistry
University of New Brunswick

Latest Revision: July 25, 2025 (section 8 corrected)

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 general information about graduate studies at UNB can be accessed at the School of Graduate Studies (SGS) Website: http://www.unb.ca//gradstudies/index.html

In particular, students are directed to consult the School of Graduate studies General regulations at: https://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/regulations/index.html. If there is any conflict between this document and that of the School of Graduate Studies regulations, the latter will prevail.

Contents:

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 the 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). On arrival, at the start of their

program, students and their supervisor must meet to discuss duties and expectations of both student and supervisor and complete the SGS student/supervisor checklist at: https://www.unb.ca/gradstudies/_assets/documents/studentsupervisorchecklist.pdf

The overall graduate program of each student is under the direction of a program advisory committee comprising of the supervisor and at least two other faculty members. Students are responsible, in consultation with their supervisors and the Director of graduate studies (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. All members of the committee must be either full faculty members, adjunct professors or Honorary Research Associates at UNB. You are to meet with your Advisory Committee and complete the Program of Study form *within the first month of starting in your program.*

Conflict resolution should follow this chain of command:

A. Supervisor
B. Advisory 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 will make a brief presentation of progress with their research, report which required courses (including seminar courses) have been completed and outline future plans for completing their degree requirements including their research project and the writing of the thesis. For more details on the guideline for the operation of the chemistry GAU program advisory committees see: https://www.unb.ca/fredericton/science/_assets/documents/chemistry/gradcommitee.pdf.

Progress will be recorded using the SGS "Annual Progress Report" form, as well as the "Report of the Graduate Program Advisory Committee." You can get these forms from the Graduate Studies Coordinator, (Heidi Stewart, scigrad@unb.ca). The student will bring the forms to the meetings.

For science students, the annual progress reports are due December first of each year (https://www.unb.ca/gradstudies/_assets/documents/student_annual_progress_report.pdf). 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.

Students wanting to transfer from a MSc program to a PhD program may do so only if they obtain the unanimous approval of their Advisory Committee. The request must be made before the end

of the second year of residence. Approval will be contingent on the student successfully completing the PhD comprehensive qualifying exam (see section 8 below), prior to the transfer. Students should review any courses taken as MSc student that they wish to have transfer to their PhD program. The program advisory committee is also where the reverse transfer from the PhD to the MSc master program will be initiated.

Students wanting to transfer from a PhD program to a MSc program may do so at their discretion. You can get transfer forms from the Graduate Studies Coordinator, (Heidi Stewart, scigrad@unb.ca).

The Graduate School has set limits on the lengths of Graduate Programs: 4 years for completion of a MSc degree (5 years for part time students) and 7 years (both full time and part-time students) for the completion of a PhD degree. If a student feels unable to meet these deadlines, the problem should be discussed with their Advisory Committee. If the committee recommends requesting an extension, the supervisor and graduate student should make representation to the Director of Graduate Studies at least six months prior to the deadline for the student's tenure in the program. An explanation of the reasons for requesting an extension, including a detailed timetable outlining what will be completed and by what dates (up to the point that the thesis is submitted for formal examination). You can get Extension Request forms from the Graduate Studies Coordinator, (Heidi Stewart, scigrad@unb.ca)

3. Keys

Keys for the laboratory spaces can be obtained from the Department's Administrative Assistant (Angela Carr, Toole Hall, Room 15, angela.carr1@unb.ca) A deposit of $20 for the first key, plus $10 per each 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 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. Funding

A brief description of funding and different funding available for graduate students is given at: https://www.unb.ca/fredericton/science/depts/chemistry/graduate/funding.html

Fully qualified students admitted to a graduate program in chemistry can normally expect financial support for up to two years for MSc and up to four years (from B.Sc.) for PhD. The recommended minimum per annum stipends currently are $20,000 for MSc and $21,000 for

PhD. For students that have no external funding of any type (scholarships, awards, prizes, etc.), this is made up of a combination of GAA, from your supervisor's research funding, GRA from the department and GSTA, a salary for demonstrating in undergraduate laboratory courses and marking. Without GSTA funding the minimum per annum stipends may be below the recommended level depending on the amount of GAA funds available from the supervisor.

For are general description of how your payments work see:
https://www.unb.ca/fredericton/science/grad/current-students/grad-funding.html

The document is for all faculty of science graduate students, not specific to Chemistry. The principle is to attempts to keep the bi-weekly payments students are receiving approximately equal for each pay period during the year.

Note: To ensure you receive your payment in a timely manner, it is important that all required documentation (e.g. signed Funding Forms) is received in a timely fashion. All paperwork must reach People and Culture at least 2 weeks before a pay run. Note that if students have not completed their 6997/6998 registration (see section 6 below) for the term, Financial Services will place the funding on hold, resulting in a significant delay in pay. It is the student's responsibility to ensure that Financial Services have the completed Authorization to Deduct form (done once per degree) and that People and Culture have up-to-date documentation (e.g. banking information; tax forms; and Study permits). Also, there are two tax forms to submit.

6. 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. However, 4000-level courses can be acceptable courses for credit towards a graduate degree, when approved by the advisory committee. A list of courses is available here:
https://www.unb.ca/academics/calendar/graduate/current/courses-/fredericton-courses/chemistry-courses/index.html . 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 6000 level courses require the student to do some extra work relative to the undergraduates taking the 4000 level courses. Your Supervisor and Advisory Committee should approve course selections.

Minimum course requirements are:

For MSc one seminar course, CHEM6010, plus two one term courses (normally 3ch) at the 4000 level or higher.

For PhD two seminar courses, CHEM6010 and 6020, plus three term courses (normally 3ch) at the 4000 level or higher.

Where the PhD program follows an MSc, course and seminar credit for previous work done at the MSc level may be granted by the advisory committee in consultation with the DoGS on a case-by-case basis. Additional courses may be required and will be determined by your advisory committee in consultation with the Director of Graduate Studies.

7. Seminars

MSc students are required to present one CHEM6000 Series Seminar (CHEM6010) on a non-thesis topic, and one Departmental Seminar on their research topic. PhD students are required to present two CHEM6000 Series Seminars (CHEM6010 and 6020) on non-thesis topics, and one Departmental Seminar on their research topic.

The non-thesis related seminars will be scheduled by the CHEM6000 course coordinators, the faculty members in charge of the seminar courses that year. Early in the term, the coordinators will call a meeting of all registered students to go over the syllabus and set the schedule. Students will be required to give one presentation each, approximately 40 minutes followed by a 15 minute question and answer period, on a topic not related to their thesis topic; and attend the presentations given by all the other students registered in the course, as well as any talk by invited external speakers.

It is the student's responsibility to register for the appropriate seminar course each year. And, once you know the date of your presentation it is your responsibility to submit to the the Science Graduate Coordinator (Heidi Stewart, scigrad@unb.ca) a title for your presentation as well as a short 150-300 words abstract a minimum of two weeks before your scheduled presentation times. The Science Graduate Coordinator is responsible for preparing and circulating the seminar notice for your talk. Failure to do so may results in a delay in your presentation.

Departmental seminar on the thesis topic must be completed 6-12 months before the anticipated defense date. This is a 40-45 minutes research seminar. Contact the director of graduate studies for scheduling. If a departmental seminar is to be given during the academic year (Sept-May) it will normally be scheduled as part of the regular departmental CHEM6000 seminar series.

8. Qualifying Comprehensive Exam

Each Ph.D. candidate is required to prepare a written report on their thesis topic and present this QE report at a meeting of their program advisory committee. Following the presentation, the committee will conduct an oral comprehensive examination of the candidate, who will be expected to defend the report and demonstrate familiarity with the relevant literature and competency in the subject area. 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 program

advisory committee. Copies of the written report must be provided to the members of the program advisory committee a minimum of one week in advance of the presentation and exam.

Students admitted directly into the Ph.D. program are required to complete the comprehensive exam within 16 months of being admitted[1]. Students admitted to the M.Sc. program, who wish to transfer to the Ph.D. program must complete the report and pass the oral comprehensive exam within the same 16 months period following their admission to the M.Sc. program. Students that request a transfer to the Ph.D. program, 16 months or more after their admission to the M.Sc. program must pass the comprehensive qualifying exam before they will be permitted to transfer to the Ph.D. program.

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 QE progress report 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 the Ph.D. program.

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

Report format and guidelines

In the QE report, the candidate should demonstrate a good understanding of their PhD research project, including the rational for undertaken the work, familiarity with prior work and literature on the topic, the objectives and goals of the work, the methodology to be employed, the novelty of the research and expected results, etc. Candidates should also include a summary of what has already been achieved since they started, and what are the next step or steps. It should be written at a level accessible to readers with a general chemistry background, at BSc holder level.

Length of the document is expected to vary, but for most candidates **10,000 words or less** should be sufficient. Depending on the field of research, and the scope of the project some candidates may be able to adequately cover these topics in a shorter document. The report should be arranged in three sections.

[1] Time extension can be requested, up to 20 months after the start of graduate student, with approval of the student advisor committee and the Director of Graduate studies. A student that does not complete the QE within 20 months will be considered to have failed.

1) Introduction: A summary of the background, a literature review of relevant prior works and an overview of the aims and objectives of the PhD research program.
2) Progress to date: A summary of what has already been done, results obtained, measurements done, etc. and discussion of their significance.
3) Future work: What do you propose to do in the second half of your PhD. What experiments or measurements need to be done. Any new avenue of research or new projects, etc.

The three sections are equally important for the proper evaluation of your progress. And should be given approximately equal weight. However, it is understood that this could vary significantly depending on the nature of the project and/or area of research. For example, research program requiring extensive presentation of the background and justification for the work may require a more extensive introduction, up to 60-65% of the report. On the other hand, projects with long lead times may have a shorter progress report section, especially for students choosing to do the QE early in their program. We want to see a well written introduction and a significant future work section.

The written QE report 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 supervisors 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 web site. Templates are available for a number of popular word processors, along with detailed user's manuals. It is expected that this report will provide a useful starting point for the introductory sections of the student's doctoral thesis. Proper use of one of the provided templates can save considerable time in the later stages of the thesis preparation process and helps ensure compliance with formatting regulations.

- Regulations and Guidelines for the Preparation of Dissertations, Theses and Reports
- Electronic Theses and Dissertations

Comprehensive exam 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 program advisory committee, another faculty member of the Graduate Affairs Committee who is not a member of the candidate's program 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 of the report should be 20-30 minutes in duration. The entire meeting should be completed within two hours.

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

9. Theses and Defense

Before submitting your thesis, ensure you have met all the requirements for your degree. This includes completing all required courses and seminars, including the departmental seminar, having maintained a cumulative grade point average of at least 3.0, having completed the residency requirements, etc. Please, Refer to the the School of Graduate studies General regulations at: https://www.unb.ca/gradstudies//current/resources/regulations-and-guidelines/regulations/index.html, sections 6 and 7.

See https://www.unb.ca/fredericton/science/grad/thesis-preparation.html for a step-by-step description of theses preparation and submission. Submission and defense of your thesis is a two-stage process.

The first approval, by the Chemistry GAU, is an internal process and is the same for both MSc and PhD thesis. Once you and your supervisor are satisfied that the thesis is ready, it will be submitted to the Reading committee for GAU approval (Steps 1 -3).

1 – Thesis is submitted to the Chemistry Department for GAU approval. The Students Advisory committee should appoint two readers and email the Director of Graduate Studies. The readers 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. Normally, but not always, the readers will be the members of the student Advisory committee. 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. Reading Committee approval is moved through email recommendation to the Graduate Director.

2 – Student revises the thesis as necessary following comments from the 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.

Note it is important that both the Director of Graduate Studies and the Science Graduate Coordinator be kept informed of the progress of the review. Before you can proceed to stage two (below), the Director of Graduate must formally indicate that the thesis has received GAU approval.

The second stage is submission to the examining board. Here the process is different for MSc and PhD thesis.

Stage 2
For MSc:
The entire MSc Defense process is handled within the Chemistry GAU. The final defense paperwork is submitted to the SGS after presentation. The final MSc thesis is submitted to the School of Graduate Studies only following successful oral examination. Once a MSc thesis has received GAU approval, steps 1-3 (above), the MSc thesis proceeds as follows:

3- Reader / Advisory Committee Approval: Supervisor emails DoGS (cc Graduate Studies Coordinator and ALL Advisory Committee members) advising of their "unanimous approval of the thesis" and listing the 3 Examiners chosen by the Advisory Committee. Include thesis title and abstract (150-300 words).

Normally, one of the Advisory Committee members will be on the Examining Committee. Details, on the regulations for the formation and composition of MSc Examining Boards see: https://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/regulations/masters-degree-regulations.html

4 – The thesis is forwarded to the Examining board. 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.

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

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

7 – Final copies of the thesis are submitted electronically. For instructions on how this is to be done as well as the other steps required to complete your program and graduate see: https://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/thesis_preparation.html.

For PhD:
Following GAU approval (Steps 1-2 above), the PhD thesis approval and examination process is handled by the School of Graduate Studies. The final defense paperwork is submitted to the SGS after presentation. The following is only a guide, based on estimates of time required; the School of Graduate Studies is the definitive authority on these procedures.

3- Reader / Advisory Committee Approval: Supervisor emails DoGS (cc Graduate Studies Coordinator and ALL Advisory Committee members) advising of their "unanimous approval of the thesis" and listing the 3 Internal Examiners chosen by the Advisory Committee. Include thesis title and abstract (150-300 words).

Typically, two Advisory Committee members, plus one member of SGS at UNB from another GAU are included as the Internal Examiners. Further regulations on the formation and composition of PhD Examining Boards see:
The PhD Thesis Examination Process | UNB
(https://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/thesis_defence_procedures.html)

4- Supervisor sends the names of 3 potential External Examiners to DoGS (cc Graduate Studies Coordinator), including contact info and link to faculty website. (Note: Supervisor should not contact potential External Examiners). Indicate if Supervisor has funds to pay for External to attend the defense in person.

5- Supervisor(s) and each Internal Examiner sign a Conflict of Interest form (valid for all 3 potential Externals) and send forms to the DoGs for signature. Completed forms go to the Graduate Studies Coordinator.

6- Graduate Studies Coordinator completes GAU Requirements form (green) & SGS Nomination form, for DoGS signature.

7- Graduate Studies Coordinator sends completed SGS Nomination, Conflict of Interests, and GAU Requirements forms to the Assistant to the Dean, SGS. Graduate Studies Coordinator emails student notice of submission of defense paperwork.

8- Student sends PDF of thesis to the Assistant to the Dean, SGS (andrea.ruehlicke@unb.ca), along with Word version of abstract and CV. Student/Supervisor may not send thesis to Examiners.

NOTE: once submitted to Andrea it takes 1-2 months before the defense is scheduled

9– 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:
https://www.unb.ca/fredericton/science/depts/chemistry/graduate/index.html

https://www.unb.ca/fredericton/science/depts/chemistry/graduate/funding.html

http://www.unb.ca/gradstudies/index.html

https://www.unb.ca//gradstudies/current/resources/important-dates.html