

Environmental & Life Sciences | Graduate Program Handbook

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Welcome to the Environmental & Life Sciences Graduate Program. This Handbook is designed to assist faculty, associate graduate faculty, and graduate students in Program procedures and policies. It is intended as a summary and guide. For detailed information, contact the Program office or refer to the [Graduate Calendar](#).

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A to Z

Absence from the University

If a student is absent from the University for more than 4 weeks during any term while still under supervision (for instance, while conducting fieldwork or attending a graduate course at another university), the student must obtain written approval from his/her Supervisor, ENLS Director, and Dean of Graduate Studies. 'Leave of Absence' forms are available in the Program office as well as on the ENLS and Graduate Studies websites.

An application to write a thesis away from campus must be received least 4 weeks prior to the student leaving campus. If a student is planning to conduct fieldwork outside Canada, s/he must also complete the [form from Foreign Affairs, Trade & Development Canada](#).

And complete form provided by the Trent Study Abroad Emergency Program. For instructions on accessing this form, contact the [Trent Study Abroad Emergency Program](#).

Academic dishonesty

Plagiarism is a serious academic offence and carries penalties from failure in an assignment to debarment from the University. Definitions, procedures, and penalties for dealing with plagiarism are set out in Trent University's Policy on Plagiarism, available on request from every department or college Office or from the Registrar's Office. Consult the Graduate Calendar for details.

Annual Progress Report

In addition to committee meetings, students are expected to meet with their supervisor(s) to discuss their progress over the past calendar year. These meetings are to be held at the end of May. Before the meeting, students should complete sections A & B of the [Annual Progress Report Form](#) and sign the form. At the meeting, students and their supervisor(s) will discuss student progress in terms of academic requirements, research productivity, and professional development (section C of the form). Supervisors will then sign the form and arrange to have it sent to the ENLS Office.

Candidacy examination for PhD students

Each PhD student must enroll in ENLS 6100H – PhD Candidacy Examination at the start of the second year of study. Enrolling in this course is meant to ensure that students meet the program requirement of undertaking the examination within the first 16 months of study. The purpose of this exam is to evaluate a student's suitability to remain in the PhD program. The basis of evaluation is not only of the major ideas of the research proposal (submitted prior to the oral Examination), but also of the broader philosophical, methodological and substantive issues that define the intellectual content of the student's future research activities. The oral Examination itself consists of a 15-20 minute presentation by the student and two rounds of oral questioning by an examination committee of both the presentation and the written proposal. The scope of the Exam will be defined by the Examining Committee, which will include the Supervisor, another member of the Supervisory Committee, and two other ENLS Faculty. The outcome of the Candidacy Exam is either Pass (it is recommended that the student be allowed to continue in the PhD program), Fail (the student must withdraw from the PhD program) or Deferral with Remediation (the student may continue the PhD program upon satisfactory completion of remedial measures in one or more subject areas). Upon passing the Candidacy exam, the student is regarded as a "PhD candidate". For a fuller description, see [Appendix B - Candidacy Examination for the PhD Program](#).

Conversion from MSc to PhD

Exceptional students enrolled in the MSc program may apply for conversion to the PhD program by petitioning the Director (9-15 months after commencing the MSc program) to undertake a Conversion Examination. Students must have completed at least 2 half-courses at the time of request and obtained an average course grade of 80% in the previous three academic terms for which numeric grades are available.

Qualified students may submit a petition that includes letters of reference from members of the Supervisory Committee, a letter from the Supervisor providing evidence of sufficient financial support for the PhD program, a progress report on research and course work completed to date, and a proposal for the PhD research program (10-15 pages double-spaced and summary [<300 words], plus literature cited). Students should discuss conversion with their Supervisory Committee in their first year. Students who successfully convert to the PhD program will be guaranteed a total of five years of financial support (including time as a MSc student) and will be required to complete 1.0 course credits in total. For a fuller description, see [Appendix C - Conversion from the MSc to PhD Program](#).

Course requirements

MSc students are required to take the equivalent of 2 half-courses. It is mandatory that one of these be a core course and MSc students will usually be expected to take ENLS 5100H - Research Foundations. PhD students are required to take 1 half-course plus ENLS 6100 – PhD Candidacy Examination. PhD students will not normally take ENLS 5100H - Research Foundations. PhD students must also give a seminar or technical presentation on their research. To avoid having to take additional courses students should consult on their course selections with their supervisors and/or supervisory committee. Students must attain at least second-class standing (B-minus or 70%) in all courses. Students are permitted to take a maximum of one reading course (ENLS 5090H). For these courses, permission from your Supervisor and the Director is required. Forms are available in the ENLS Office.

Employment

The Ontario Council of Graduate Studies strongly encourages graduate students to make full-time progress toward completion of program requirements. As a result, we recommend that graduate students seek to limit the number of hours of employment over and above the hours associated with a Graduate Teaching Assistantship position. Note that the University no longer seeks to enforce the ‘10-hour rule’. However, we recommend that students and supervisors maintain an open dialogue regarding any outside employment so that everyone is aware of time constraints faced by students. Open dialogue also provides students and supervisors opportunities to mitigate detrimental effects of outside employment on full-time progress.

Expectations

It is crucial that expectations – regarding the scope of the thesis project, financial arrangements, teaching, courses, timelines, publications – be discussed at the outset by the student, Supervisor, and Supervisory Committee. Do it early. See Roles and Responsibilities in this handbook.

Financial support

Students and Supervisors should discuss – very early – arrangements for financial support during the student’s program. The ENLS Program specifies minimum financial support to MSc students for 2 years and PhD students for 4 years, guaranteed by the Supervisor for this period (contact the Program office for the latest figures). Supervisors may augment the minimum level of financial support from their research funds. Support may come from diverse sources, such as an external scholarship, Graduate Teaching Assistantship (GTA),

Research Fellowship Assistantship or faculty research funds. A full GTA typically entails 10 hours per week for two terms (24 weeks in total; these hours are included in those mentioned in the [Employment](#) section above – that is a typical teaching assistantship will comprise all ten hours of employed work per week permitted for full-time students).

Graduate seminar

PhD students are expected to give at least one seminar, in addition to that required for the Candidacy Examination, during their graduate studies. Students should approach the Program Coordinator to schedule this seminar once they are nearing completion of their dissertation.

Intellectual property and data ownership

Understanding intellectual property is a key component of research and graduate student training. Discuss the matter with your Supervisor prior to doing your research. Additional information can be found on the [Trent University Office of Research and Innovation web pages](#).

Where data are acquired as part of a joint effort, or using research instruments developed wholly or in part by the research supervisor, University, or third party, ownership of the Intellectual Property in the data is typically shared. All parties involved are responsible for ensuring that proper acknowledgments of contributions are made when the data are released in any form. Ownership, data sharing and Intellectual Property should be discussed in advance and as early as possible in the research process, so that all parties understand their responsibilities and rights. All parties should also be familiar with the Policy on Research and Scholarly Misconduct.

Regulations, safety, and training

Safety and the adherence to research regulations and ethics are paramount. Students and Supervisors should discuss any hazards involved in their research and ways to mitigate these risks. For more information contact the [Risk Management Office](#), which can also provide information on the appropriate [training in radiation safety, biosafety, and hazardous substances](#). Studies involving live vertebrates or cephalopods require prior approval from the [Animal Care Committee](#); those involving human subjects require prior approval from the [Research Ethics Board](#).

Steps to final submission of the thesis

The following is excerpted from Appendix E (Steps toward the Thesis Defence). For additional details, consult [Appendix E - Steps toward the Thesis Defence](#).

Once you and your supervisor agree that your thesis is ready for defence it then goes to your Supervisor Committee for approval. The committee indicates its approval by returning signed copies of a Step 1 form to the Program Office and returning any requested changes to the student. Once all Step 1 forms have been received and the Program Director has received suggestions for examiners the Director identifies the examining committee. The thesis (including any revisions required by the Supervisory Committee) is then sent to the Examining Committee and a date for the thesis defence is identified. The Examining Committee indicates its approval to proceed with the defence as scheduled by returning signed copies of the Step 2 form to the Program Office. If all Step 2 forms indicate that the thesis is defensible, the thesis defence proceeds as scheduled. After the defence, some revisions may be required; these revisions must be made and approved by the Examining Committee (or their designate). Confirmation that the thesis has received final approval is sent to the Program office and the final version of the thesis is sent to the School of Graduate Studies.

The amount of time students can expect each of these steps to take are outlined below:

Action	Expected turn-around time
1. Committee members review the thesis and complete Step I form; supervisor suggests names for Internal/ External Examiners.	2 to 4 weeks
2. Director identifies External & Internal Examiners; thesis is sent to the Examining Committee.	1 week
3. Examining Committee members review thesis and complete Step II form; A date for defence is determined.	2 to 5 weeks
4. Thesis defence	
5. Student makes revisions; after approval, student submits final version to the School of Graduate Studies.	1 or more weeks

Special Graduate Faculty

Faculty and researchers from outside ENLS may be appointed to student supervisory committees via the Special Graduate Faculty procedure. The intention of this procedure is to enable inclusion of subject experts for research topics that are not already covered in ENLS and/or to substitute for ENLS faculty who are unavailable to serve on the supervisory committee. In addition to the supervisor(s), student supervisory committees must include at least one other member of ENLS with knowledge of program procedures and expectations (permanent Trent faculty with an ENLS appointment, or ENLS adjunct faculty who have completed at least one three-year term of their adjunct appointment).

To request the appointment of a Special Graduate Faculty member to a student's supervisory committee the following items will be submitted for review by the program:

- A letter in the form of an email or email attachment from the person requesting a special graduate faculty appointment and addressed to the program indicating their interest in serving on the supervisory committee. The letter should indicate the student's and supervisor(s) names.
- A letter from the student's supervisor (or one of the two co-supervisors) requesting the appointment of the special graduate faculty member to the student's supervisory committee.
- An up-to-date CV for the person requesting a special graduate faculty appointment.

Supervisory Committee

The Supervisory Committee provides guidance and ensures satisfactory progress in the student's academic and research activities. The Committee should be formed within 3 months of initial registration. It is expected that the Committee meet and report on the student's progress twice per year. The Committee consists of a minimum of three members, including the student's Supervisor and at least one other ENLS Faculty member (including ENLS Adjunct Graduate Faculty). Additional members of the committee may consist of ENLS Faculty (including Adjunct Graduate Faculty) or Special Graduate Faculty. At least one member should normally be tenured or tenure-track Trent faculty. Non-ENLS faculty can be appointed as Special Graduate Faculty; this requires approval of the Director.

ENLS recognizes the importance of achieving an equitable, diverse and inclusive working and learning environment for our students and faculty. The Program is committed to providing a safe and welcoming scientific community. Faculty and students are encouraged to take the issues of equity, diversity, and inclusion into consideration when assembling the supervisory committee. Students are expected to be consulted during the process of committee member selection.

Teaching assistantships

Graduate Teaching Assistantships are provided to many ENLS students. Normally, students will be notified by the Coordinator and assigned to one of the undergraduate units: Department of Biology, Department of

Chemistry, School of Environment, or Program in Forensic Science. Students should apply to their assigned undergraduate unit and obtain a clear understanding regarding TA responsibilities at the outset from the course instructor. A full teaching assistantship accounts for an average of 10 hours of employed work per week. Students with a full teaching assistantship are therefore expected to not take on any additional employment (and see [Employment](#)).

Thesis submission

Students will defend their thesis in an open, oral examination before an Examining Committee. A PhD Committee includes an External Examiner (external to the University). In anticipation of the defence, see the timeline below. Be aware that, in advance of the defence, approximately 6 weeks may be needed for Examiners to review and appraise the thesis after it has been submitted to the Program office. Plan ahead: Use the timetable (page 7, below) in conjunction with the deadlines in the University Calendar.

Timeline for MSc Students

Action	Time from start date
1. Meet with Supervisor	1 week
2. Meet with Supervisory Committee	3 months
3. First draft of Proposal	4 months
4. Meet with Supervisory Committee	Every 6 months
5. Draft of thesis to Supervisor	20 months
6. Draft of thesis to Supervisory Committee	21 months
7. Supervisory Committee returns comments and submits Step 1 form	21-22 months
8. Submit approved thesis to Program office	22-23 months
9. Examination Committee returns signed Step 2 forms	22-23 months
10. Thesis defence	23 months
11. Submit final version of thesis to School of Graduate Studies	24 months

If you are concerned that you are going to exceed these suggested timelines, schedule a meeting with your Supervisor and/or Supervisory Committee.

Timeline for PhD Students

Action	Time from start date
1. Meet with Supervisor	1 week
2. Meet with Supervisory Committee	3 months
3. First draft of Proposal	10 months
4. Register for Candidacy Exam (ENLS 6100H)	12 months
5. Submit Final Proposal to Program office	12-14 months
6. Candidacy Exam	14-16 months
7. Meet with Supervisory Committee	Every 6 months
8. Graduate Seminar	40 months
9. Draft of thesis to Supervisor	42 months
10. Draft of thesis to Supervisory Committee	45 months
11. Supervisory Committee returns comments and submits Step 1 form	45-46 months
12. Submit approved thesis to Program office	46-47 months
13. Examination Committee returns signed Step 2 forms	46-47 months

Action	Time from start date
14. Thesis defence	47 months
15. Submit final version of thesis to School of Graduate Studies	48 months

If you are concerned that you are going to exceed these suggested timelines, schedule a meeting with your Supervisor and/or Supervisory Committee.

Time limits

It is expected that students complete their program of study within 2 years for the MSc and 4 years for the PhD. The thesis project should be designed at the outset to meet these deadlines. The maximum time allowed for completion of the degree is 3 years for the MSc and 5 years for the PhD. (For part-time students, these times are doubled.) Any request for extension must be made formally to the Director and the Dean of Graduate Studies.

Questions or Problems?

Students that have questions or experience complications during their program of study should direct inquiries in the first instance to their Supervisor. If these questions remain unresolved, students are encouraged to approach the members of their Supervisory Committee, the Program Coordinator or the Director for information or advice.

Roles and Responsibilities

The Supervisor

All Trent faculty who are members of the ENLS Program are required to re-apply to the Program at the end of every review period. The list below outlines expectations of the ENLS Program for Supervisors. Additional information is available in the [Trent University Graduate Student Handbook](#).

1. Supervisors should make and maintain a strong commitment to devote the required time and energy needed to successfully engage in graduate student supervision. As part of this commitment, the Supervisor should display the highest ethical standards of behaviour at all times.
2. Potential supervisors should have sufficient familiarity with the field of research to provide appropriate guidance and supervision, or indicate a willingness to gain that familiarity before agreeing to act as Supervisor.
3. At the earliest possible time the Supervisor should discuss with the student the specific nature and subject of the proposed research. The Supervisor should provide guidance on establishing a research project, approaching problems that might be encountered in the research, how to assess the progress of the research, and expectations for an acceptable thesis or major research paper.
4. At the outset of the research, the Supervisor should discuss with the student intellectual property rights, including the process of decisions concerning shared intellectual property and authorship of any publications that might involve shared work or intellectual property. The Supervisor should discuss with the student the degree to which a research project may be an integral part of a larger research program of the Supervisor and the consequential possible implications for authorship of resulting publications, including the aspects or areas of the research project over which the Supervisor wishes to claim background intellectual property rights.
5. At the earliest possible time the Supervisor should discuss the extent to which the Supervisor is able to support the research project in space, equipment and facilities, and provide financial support to the student.
6. The Supervisor should make the student aware of any financial support to be provided by the Supervisor. This information should be communicated clearly to the student, in writing, including such details as the amount of financial support, the length of time of such support, and any specific conditions pertaining to this financial support.
7. At the earliest possible time the Supervisor should discuss with the student her/his expectations for the student's academic performance and progress towards completion of the proposed research.
8. Supervisors should make every effort to ensure that all resources (e.g., laboratory/field facilities and essential operating funds) necessary for execution of the thesis research project or major research paper will be available as required so the student can complete the project without undue delay, and, when necessary, to assist the student in gaining access to facilities or research material;
9. A Supervisor must be reasonably accessible to the student for consultation and discussion of the student's academic progress and research problems. Requests for consultation, advice or input on academic matters should not be unreasonably denied.
10. A Supervisor should make satisfactory arrangements for the supervision of the student when the Supervisor is on leave or extended absence from the campus.
11. Supervisors should assist their students in developing a program of study that will allow for completion of all degree requirements within the specified time limits.
12. Supervisors should inform their students of the approximate time it will take for submitted written material to be returned with comments.

13. A Supervisor should be thorough in the examination of written material submitted by the student, making constructive suggestions for improvement.
14. Supervisors should provide a fair assessment of the completed thesis or major paper, with explanations of criticism and constructive suggestions for improvement.
15. The Supervisor should indicate when a draft thesis or major paper is satisfactory for submission to the Supervisory Committee or, if the Supervisor believes that it cannot be successfully completed, to communicate this to the student (and the Supervisory Committee, if appropriate) with reasons.
16. The Supervisor should know Graduate Program and University regulations and standards to which a thesis or major research paper is required to conform, and to ensure that the student is informed of them. The Supervisor should inform supervisees of what is expected in research and the writing of a thesis or major research paper, such as the quantity and quality of research required, the length and composition of a thesis or major paper, and the mechanism for reviewing progress.
17. The Supervisor should monitor any major discrepancies in advice given to the student by members of the Supervisory Committee and/or Supervisor, and attempt to achieve resolution and consensus on the issue(s) involved.
18. Supervisors should inform the program Director, in a timely fashion, of any serious difficulties which may arise in supervision. These might include major professional academic disagreements, interpersonal conflicts, or potential conflict of interest situations.
19. Supervisors may request withdrawal of a student from the program, following normal program review procedures, when for specific reasons, s/he feels that continued supervision could not lead to the satisfactory completion of the degree requirements by the student. In such circumstances, the Supervisor should discuss the reasons with the student and the Supervisory Committee and provide a written statement of the reasons to the student and to the Program Director. The Program Director should meet with the student and the Supervisory Committee to review the request and to facilitate its resolution.

The Supervisory Committee

The following is an excerpt from the Role and responsibilities in graduate supervision. For more information see the [Trent University Graduate Student Handbook](#).

1. Meeting with the student, as a committee, as required but not less than once per year to assess the student's progress in the program and advise on future work required for completion of the degree requirements.
2. Being reasonably accessible to students when called upon for discussion of academic progress, for consultation on issues related to the research project and for general guidance.
3. Thoroughly examining written material submitted by the graduate student in a timely fashion, making constructive suggestions for improvement, and informing the graduate student in writing at the time of submission when the material will be returned (usually within 2-4 weeks). Work will be returned with comments, preferably in writing, for improving and continuing the work. Supervisory committee members must inform the student in writing if there is an unanticipated delay in returning the work.
4. If problems or conflicts associated with student arise, the members of the supervisory committee should attempt first attempt to resolve any difficulties informally. If informal discussion does not lead to a resolution then advice should be sought from the program director and, if required, ultimately from the Dean of Graduate Studies in order to seek an acceptable resolution.

The Graduate Student

The following is an excerpt from the Role and responsibilities in graduate supervision. For more information see the [Trent University Graduate Student Handbook](#).

1. Becoming familiar with and comply with the policies, procedures and regulations of the program, School of Graduate Studies and the University.
2. (a) Knowing the program and university regulations and standards for a dissertation, thesis or major project and following them. [A list of the School of Graduate Studies policies and procedures can be found here](#).
(b) Adhere to the School of [Graduate Studies guidelines on the ownership of intellectual property](#) and the [Tri-Agency Framework: Responsible Conduct of Research](#).
3. Meeting program requirements and conducting research that will contribute to, and reflect a capacity of independent scholarship in the chosen field of study. Defining, in conjunction with the supervisor, a program of study which fits within the scope of the program and for which human, physical and financial resources exist. Preparing a research plan and timeline in consultation with the supervisor as a basis for monitoring progress and completing all stages of the research. Conforming to all appropriate deadlines and policies as specified by the graduate calendar, with respect to enrollment, fees, award applications, and degree requirements.
4. Maintaining regular communication with the supervisor and supervisory committee (where appropriate) regarding progress and research findings.
5. Conducting research with the highest standard of ethical and scientific practice and acquiring Research Ethics Board or Animal Care Committee for approval if required. Familiarizing themselves with the health and safety regulations of the University and the Department.
6. Providing reasonable evidence of satisfactory research progress, as requested by the supervisor; informing the supervisor immediately of any changes that might affect progress.
7. Maintaining regular communication with the supervisor and supervisory committee (where appropriate) regarding progress and research findings. At a minimum, three formal or informal meetings should be arranged in each academic term, in order to discuss and record academic performance on a Progress Report, in which goals for the following term are established. Students who are judged to have unsatisfactory progress on their annual Progress Report may be withdrawn from the program.
8. Meeting and communicating with supervisor regularly (i.e., at least once a month) and seeking advice and support from university services and resources as needed. Setting goals for the following terms with the supervisor.
9. Providing supervisor with written work for comment as agreed upon (see #7). Informing supervisor in writing if there is an unanticipated delay in submitting work. Ensuring that raw data is available to the supervisor at all times. Providing copies of the thesis, major research paper or dissertation to the examining committee members.
10. Informing supervisor and/or program director of extended periods of time where communication will be difficult (e.g., absences of more than 7 days without access to email). Full-time students who are taking an extended leave for a period of more than 4 weeks to conduct research activities/studies off campus are required to complete a “request for extended leave for full-time students” form.
11. Upon completion of the research work ensuring that all records, files, documents are stored appropriately and a plan for dissemination has been agreed upon by all collaborators. Making drafts of the dissertation, thesis, major paper or materials available, with a copy of the raw data if requested, to the supervisor prior to submission for publication. The publication process, including authorship decisions, should follow norms or established guidelines for publication authorship that are established in the discipline.

12. If problems or conflicts associated with a supervisor or supervisory committee arise, the graduate student should attempt first to resolve any difficulties informally. If informal discussion does not lead to a resolution then advice should be sought from the program director and, if required, ultimately from the Dean of Graduate Studies in order to seek an acceptable resolution.
13. Ensuring that contact information is up to date with the supervisor, program, and the School of Graduate Studies.
14. Requests for reference letters will be made in a timely fashion (i.e., well in advance of deadlines) and will include all documentation needed (e.g., description of scholarship or position, unofficial transcripts, letter of intent or application).

Appendix A - Expectations of Adjunct Graduate Faculty

1. The Adjunct Graduate faculty member must demonstrate sustained independent research or scholarship activity in a field related to areas of interest in the Environmental & Life Sciences Graduate Program, particularly in the last 5 years as evidenced by the grants and refereed publications.
2. When serving as a graduate student Supervisor, the Adjunct Graduate member must satisfy the guidelines for Supervisors outlined in the Trent University's Handbook for Graduate Students.
3. The Adjunct Graduate member must demonstrate sufficient financial resources (from research grants and contracts) to support graduate students under their supervision to the minimum level set by the Environmental & Life Sciences Graduate Program.
4. The Adjunct Graduate member must demonstrate a willingness to (a) serve on graduate student Supervisory Committees; (b) participate in Environmental & Life Sciences graduate courses and seminars; (c) serve on graduate student examination committees and (d) assist the Director in the evaluation of students for scholarships and prizes.
5. The Adjunct Graduate member must demonstrate a willingness to participate in joint research with other faculty members associated with ENLS.

Appendix B - Candidacy Examination for the PhD Program

This examination will take place as part of the non-credit course, ENLS 6100H – PhD Candidacy Examination. PhD students must enroll in this course at the start of their second year of studies. Students are required to have undertaken the candidacy examination by the end of the term in which students have enrolled in ENLS 6100H (and therefore, within 16 months after starting a PhD program as required by the Program).

Purpose

The purpose of the Candidacy Examination is to evaluate a student's suitability to remain in the PhD program. The basis of the evaluation is an examination not only of the major ideas of the research proposal submitted prior to the oral exam, but also of the broader philosophical, methodological, and substantive issues which define the intellectual content of the student's future research activities. Hence, the PhD student is expected to demonstrate satisfactory knowledge of the literature and subject areas crucial to the proposed research, and a command of underlying fundamental scientific principles related to the project.

Components

The examination will consist of the following two components:

(1) Proposal

A research proposal submitted to the Examining Committee, which is comprised of - the Supervisor - a member of the PhD Supervisory Committee (selected by the Director) - two members of ENLS faculty not on the student's Supervisory Committee (selected by the Director and/or from a list suggested by the Supervisor) - the Director or delegate, who chairs the exam. The proposal will adhere to the following format: 10-15 pages in length (plus a summary of less than 300 words and literature cited), double-spaced with 2.5 cm margins and 12-point font. The proposal should include a title and describe the rationale for the project; background, including relevant literature, objectives, hypothesis, and predictions; methods, including a time line; and anticipated significance.

Applicants whose research program departs significantly from the research proposal submitted must discuss such changes with the PhD Supervisory Committee, and a written statement of modification must be provided to the Director at least 4 weeks prior to the examination.

(2) Oral examination

An oral examination will be scheduled within 6 weeks of submission of a coherent and defensible proposal, as deemed by the Examining Committee. The oral exam will be held in camera and normally be limited to 3 hours in duration. The student must attend in person. The exam will begin with a brief (15-20 minute) presentation by the student on the proposed PhD program giving an overview of his/her research proposal. This will be followed by questions from the Examining Committee, focusing on both the student's background preparation and the proposal. Two rounds of questions will follow from the Examining Committee beginning with the non-supervisory committee members, followed by the supervisory committee member, and finally the supervisor. Each questioner will be allowed approximately 15 minutes. When the student has answered the questions to the satisfaction of the committee, the student will leave the room giving time for the committee's decision. The student is then asked in and informed of the outcome of the deliberation. Upon successful completion of the Candidacy Examination, a PhD student will be known as a "PhD candidate".

Procedures

The scope of the oral portion of the exam will be defined by the Examining Committee and forwarded to the student (via the Director) within 2 weeks of the submission of the proposal. Thus, the student should have a list of suggested readings and topics to be covered in the examination 4 weeks prior to the scheduled oral examination.

The process by which the Examining Committee is to be formed and the examination topics are determined is as follows:

1. The Program establishes an Examining Committee to be comprised of the Supervisor, one member of the Supervisory Committee (or the co-Supervisor), plus two additional members of the Program. The Supervisor(s) will provide the Program with a list of suitable Examiners.
2. The Program contacts the supervisor(s) to determine any priority areas to be covered during the examination.
3. The Program contacts the Examiners to inform them of the priority areas and to identify any other areas to be examined. At the same time, Examiners indicate the areas in which they are able to examine the student.
4. The Examining Committee agrees on a list of areas to be covered in the examination. One of the priority areas identified by the Supervisor must be included in this list. If not, the Supervisor will select one of the priority areas and be responsible for assigning readings in this area.
5. Based on the list of priority (and other) areas that each Examiner has selected, the Program compiles a final list of examination areas and assigns one area to each Examiner. The Program notifies the Examining committee of the final list of topics and Examiner assignments.
6. Examiners select a (set of) reading(s) for their assigned area and inform the Program of their selection(s).
7. It is expected to take approximately four weeks between the initial contact between the Program and the supervisor and the compilation of an assigned list of subject areas.

Outcome

The outcome of the examination, which will be based on both the written proposal and the oral examination, will be one of the following:

Pass

A recommendation will be forwarded to the Committee on Graduate Studies that the student be allowed to continue in the PhD program. The Examining Committee may also suggest modifications to the proposed PhD research that are to be recorded in the supervisor's examination report (see below), and which should be considered by the candidate and the supervisory committee.

Deferral with remediation

If the Examining Committee finds that the student's proposal and performance on the oral examination are largely satisfactory, but also concludes that the student's comprehension is weak in one or more areas of the exam, the committee may specify remedial measures. In particular, this option is recommended if a single remedial activity could be expected to improve the student's knowledge in area(s) identified as weak or in their ability to defend their proposed research. The outcome of the candidacy examination will be

deferred pending the satisfactory completion of these additional tasks. If the remedial items have not been satisfactorily completed, remediation is considered incomplete and the student will be asked to withdraw from the Program. The deadline for completion of these remedial items will be determined by the Examining Committee at the time of the examination, and depend on the mode of remediation, as described in more detail below.

Remediation Option 1 If the examining committee deems that the student's knowledge and/or ability to answer questions relating to **one** of the assigned areas was unsatisfactory, the examining committee may require the student to:

1. Within 8 months complete a scheduled course (i.e., not a reading course) that includes topic(s) in the assigned area that was deemed unsatisfactory, achieving a minimum grade of 70% (i.e., the student must pass the course). The course may be one offered at Trent (e.g., ENLS, AMOD) or from another institution via a letter of permission. The Chair of the examining committee will be given a list of the ENLS and AMOD courses scheduled for the next academic term.

OR

2. Re-take the oral exam. In this case, the student will only be examined in the area identified as weak during the first exam. This exam would occur within 8 weeks of the first exam. The student must pass this exam. This option is recommended if no suitable course is available within the 8-month time-frame or the committee deems that a graduate-level course would be an insufficient mode of remediation.

OR

3. Take a reading course that covers the assigned area that was deemed unsatisfactory, achieving a minimum grade of 70%. Under this option, students would be expected to demonstrate their knowledge to those not directly involved in the reading course (e.g., by delivering guest lecture(s) on the topic, submitting a review paper to the examining committee). A reading course is not the preferred option and pursued only if options 1 or 2 are not feasible.

Remediation Option 2 If the examining committee deems that the student's knowledge and/or ability to answer questions relating to **two or more** of the assigned areas was unsatisfactory, the examining committee may require the student to:

- Re-take the oral exam. In this case, the student will be examined in all areas identified as weak during the first exam. This exam would occur within 8 weeks of the first exam. The student must pass this exam.

Remediation Option 3 The examining committee may decide that an alternative form of remediation is required. In this case, the committee will clearly communicate the mode of remediation, expectations for the satisfactory completion of remedial activities, and a deadline for completion.

Fail

If the student lacks sufficient knowledge in multiple areas that are fundamental to the proposed research and/or the student was not able to clearly defend the proposed research, the student is considered to have failed the examination. In particular, if the examiners deem that a **single remedial activity** would be insufficient to change the outcome of the examination the student has failed the examination. Under this option, the student must withdraw from the PhD program. Alternatively, two "fail" votes from the Examining Committee constitutes a failure.

The student may appeal a failure of the Candidacy Examination to the Environmental & Life Sciences Graduate Program Executive Committee. The student should provide documentation outlining the grounds

for an appeal. Should the appeal be supported by the ENLS Executive Committee, a second oral examination will be held within 3 months of the date of the appeal. During this period, the student will remain enrolled in the PhD program. A second failure of the Candidacy Exam is not subject to appeal.

The Examining Committee Chair

The Chair of the Examining Committee will be responsible for preparing a written report setting out the detailed recommendations of the Examining Committee. In the case of “Pass with Remediation” or “Fail”, this report will be circulated to the other members of the committee for comment within 3 weeks of the examination, and then given to the student. Regardless of the outcome, a copy of the report will be placed in the student’s file.

Appendix C - Conversion From the MSc to PhD Program

Students may enter the PhD program without having received an MSc (or equivalent) degree. Such students are already enrolled in the ENLS MSc program, and may apply for conversion to the PhD program by petitioning the Director, between 9 and 15 months of commencing their MSc program, to undertake the Conversion Examination.

Students wishing to take advantage of this procedure should discuss the matter with their Supervisory Committee early in their first year, and the development of their research project would normally reflect the intention to convert.

Criteria

Applicants for conversion to the PhD program must meet the following two criteria:

(1) Ability

- a) Students must have completed at least two half-courses at the time of request for conversion and have obtained at least an A-minus (80%) in the previous three academic terms for which numeric grades are available.
- b) Permission to take the Conversion Examination for entry to the PhD program will be based largely on comments from the Supervisor and the Supervisory Committee. Those confidential assessments should include comments on the student's intellectual and technical abilities, motivation, and general preparedness. Other information such as scholarships and awards should be included.
- c) The applicant will also be evaluated on the basis of the MSc progress report and research proposal for the PhD program which must accompany the petition for conversion. (See Procedures).

(2) Support

Evidence of sufficient financial ability from the Program, the Supervisor and/or scholarships to provide both research and subsistence support for the duration of the PhD program (normally 3 years following conversion) must be documented to the satisfaction of the Executive.

Procedures

Application

Students wishing to convert from an MSc degree program to a PhD program and who satisfy the criteria above will petition for conversion between 9 and 15 months of commencing their MSc program. Hence all petitions and supporting documentation must be submitted to the Director by no later than:

1. 1st December of Year 2 for students beginning their MSc in September of the previous year; or
2. 1st April of Year 2 for students beginning their MSc in January of the previous year, or
3. 1st August of Year 2 for students beginning their MSc in May of the previous year.

After having secured the approval of the Supervisory Committee, a student may petition the Director for permission to convert to the PhD program. The petition should include confidential letters of reference from all members of the Supervisory Committee, a letter from the Supervisor providing evidence of sufficient financial support, a progress report on research and course work completed to date, and a detailed proposal for the PhD research program.

The proposal should include a discussion of distinctions between the current MSc program and that proposed for the PhD, the nature of the scientific contributions expected to arise from the PhD program, and a detailed schedule of proposed research and expected completion dates. The proposal will adhere to the following format: 10-15 pages in length (plus a summary of less than 300 words and literature cited), double-spaced with 2.5 cm margins and 12-point font. The proposal should include a title and describe the rationale for the project; background, including relevant literature; objectives, hypotheses, and predictions; methods, including a time line; and anticipated significance.

It is recognized that the direction of research may change. Thus, the research proposal is not meant to constrain future development of the project, but rather to indicate current thinking and program development. Any other information which the student considers relevant to his/her case may be included with the application (e.g., papers completed, courses in progress). Incomplete proposals will not be considered by the Executive. It is the applicant's responsibility, therefore, to ensure that all appropriate material is submitted with the petition for conversion.

Students intending to apply for conversion should continue to satisfy the course requirements for the MSc degree. Students should complete any remaining MSc courses pending the decision of the Executive regarding permission to take the Conversion Examination and the outcome of the examination itself.

Decision

Within 3 weeks of submission of the petition, the Program Director, in consultation with the Executive, will decide if the student will be granted permission to take the Conversion Examination. The decision will be based on the following criteria:

- Performance to date in the MSc program
- Availability of a Supervisor and evidence of sufficient financial support for the PhD program
- Letters of recommendation from the Supervisory Committee
- Quality of the progress report and research proposal

If a student is found to be satisfactory in all categories, the Executive will recommend that s/he be permitted to take the Conversion Examination. Students whose conversion is not approved remain in the MSc program; they are not eligible to reapply for conversion.

Examination for conversion to the PhD program

Purpose

The purpose of the examination is to evaluate a student's suitability to enter the PhD program. The basis of the evaluation is an examination not only of the major ideas of the research proposal submitted with the petition for conversion (see above), but also of the broader philosophical, methodological, and substantive issues which define the intellectual content of the student's future research activities. Hence, the student is expected to demonstrate satisfactory knowledge of the literature and subject areas crucial to the proposed research, and a command of underlying fundamental scientific principles related to the project.

Components

The examination will consist of the following two components:

(1) Proposal A research proposal submitted to the Examining Committee, which is comprised of - the Supervisor - a member of the PhD Supervisory Committee (selected by the Director) - two members of ENLS faculty not on the student's Supervisory Committee (selected by the Director and/or from a list suggested by the Supervisor) - the Director or delegate, who chairs the exam. The proposal will adhere to the following format: 10-15 pages in length (plus a summary of less than 300 words and literature cited), double-spaced with 2.5 cm margins and 12-point font. The proposal should include a title and describe the rationale for the project; background, including relevant literature, objectives, hypothesis, and predictions; methods, including a time line; and anticipated significance.

Applicants whose research program departs significantly from the research proposal submitted must discuss such changes with the PhD Supervisory Committee, and a written statement of modification must be provided to the Director at least 4 weeks prior to the examination.

(2) Oral examination An oral examination will be scheduled within 6 weeks of submission of a coherent and defensible proposal, as deemed by the Examining Committee. The oral exam will be held in camera and normally be limited to 3 hours in duration. The student must attend in person. The exam will begin with a brief (15-20 minute) presentation by the student on the proposed PhD program giving an overview of his/her research proposal. This will be followed by questions from the Examining Committee, focusing on both the student's background preparation and the proposal. Two rounds of questions will follow from the Examining Committee beginning with the non-supervisory committee members, followed by the supervisory committee member, and finally the supervisor. Each questioner will be allowed approximately 15 minutes. When the student has answered the questions to the satisfaction of the committee, the student will leave the room giving time for the committee's decision. The student is then asked in and informed of the outcome of the deliberation. Upon successful completion of the Candidacy Examination, a PhD student will be known as a "PhD candidate".

Exam Procedures

The scope of the oral portion of the exam will be defined by the Examining Committee and forwarded to the student (via the Director) within 2 weeks of the submission of the proposal. Thus, the student should have a list of suggested readings and topics to be covered in the examination 4 weeks prior to the scheduled oral examination.

The process by which the Examining Committee is to be formed and the examination topics are determined is as follows:

1. The Program establishes an Examining Committee to be comprised of the Supervisor, one member of the Supervisory Committee (or the co-Supervisor), plus two additional members of the Program. The Supervisor(s) will provide the Program with a list of suitable Examiners.
2. The Program contacts the supervisor(s) to determine any priority areas to be covered during the examination.
3. The Program contacts the Examiners to inform them of the priority areas and to identify any other areas to be examined. At the same time, Examiners indicate the areas in which they are able to examine the student.
4. The Examining Committee agrees on a list of areas to be covered in the examination. One of the priority areas identified by the Supervisor must be included in this list. If not, the Supervisor will select one of the priority areas and be responsible for assigning readings in this area.

5. Based on the list of priority (and other) areas that each Examiner has selected, the Program compiles a final list of examination areas and assigns one area to each Examiner. The Program notifies the Examining committee of the final list of topics and Examiner assignments.
6. Examiners select a (set of) reading(s) for their assigned area and inform the Program of their selection(s).
7. This process is expected to occur quickly, with no more than one week between the initial contact between the Program and the supervisor and the compilation of an assigned list of subject areas.

Outcomes of the conversion examination

Outcomes of the examination, which will be based on both the written proposal and the oral examination, will be either:

Transfer to PhD

A recommendation will be forwarded to the Office of Graduate Studies by the Director that the student be allowed to enroll in the PhD program. The committee may also suggest modifications to the proposed PhD research that are to be recorded in the Chair's examination report (see below), and which should be considered by the student and the Supervisory Committee. The Conversion Examination will substitute the requirements of the PhD Candidacy Examination (ENLS 6100h). In particular, in the report from the Chair of the Examining Committee to the Program Director, the Chair will note (1) that the Committee recommends that the student be transferred to the PhD Program and (2) that the student's performance during the Conversion exam was sufficient to substitute the PhD Candidacy Exam.

Remain in MSc program

The student remains in the MSc program. Two "remain" votes from the examination committee constitutes a failure to convert to the PhD and the student remains enrolled in the MSc program.

Students admitted to the PhD program may not revert to the MSc program. In exceptional circumstances, the student may, after withdrawal from the PhD program, seek readmission to another graduate program through the normal application procedures.

The Examining Committee Chair

The Chair of the Examining Committee will be responsible for preparing a written report setting out the detailed recommendations of the Examining Committee. In the case of "Remain in MSc", this report will be circulated to the other members of the committee for comment within 3 weeks of the examination, and then given to the student. Regardless of the outcome, a copy of the report will be placed in the student's file.

Requirements and support for converted students

Converted students will be required to complete course work, thesis, and other components of the PhD program. Course work requirements will be decided in consultation with the Supervisory Committee. Converted students must complete 1 full course credit during their entire graduate program.

Initial registration as a PhD student is normally the first date of admission (i.e., 1 January, 1 May, or 1 September) following successful outcome of the Conversion Exam.

Appendix D - Thesis Format

All theses submitted for defence in the Environmental & Life Sciences Graduate Program are subject to the [format style outlined by the Graduate Studies](#).

Thesis formatting guidelines

1. The thesis must be expressed in a satisfactory literary format consistent with the discipline, must display a scholarly approach to the subject, and must demonstrate a thorough knowledge of it.
2. While parts of the thesis may be prepared in a form suitable for separate publication, the thesis as a whole must comprise a coherent account of a unified research project rather than a loose collection of individual studies. It is not acceptable to submit a collection of reprints of published papers as a thesis. Publication or acceptance for publication of research results prior to presentation of the thesis in no way supersedes the University's judgement of the work at a thesis defence.
3. Essential parts of this coherent account must then include a critical review of previous work related to the subject, and an identification of the contribution(s) made in the thesis to scholarship in the chosen field.
4. Theses may be submitted in either the traditional or manuscript format. The choice of thesis format should be decided by the student and the supervisory committee early in the planning stages for the thesis, and the rationale for the choice (see below) should be discussed at this time.

Traditional format

1. Title Page
2. Abstract
3. Acknowledgements
4. Table of Contents
5. List of Tables
6. List of Figures
7. Ch. 1: Introduction
8. Ch. 2: Literature Review
 - the literature review may be included as a part of Ch. 1
9. Ch. 3 to n: Body of Thesis
 - (Materials & Methods, Results, and Discussion)
10. Ch. n+1: Summary/Conclusions
 - This may be a concise summary of the thesis
11. References
12. Appendices

Manuscript format

1. Title Page
2. Abstract
3. Acknowledgements
4. Table of Contents
5. List of Tables

6. List of Figures
7. Ch. 1: General Introduction
8. Ch. 2: Literature Review (optional)*
9. Ch. 3 to n: Manuscripts

- each manuscript chapter will contain: (Introduction, Materials & Methods, Results, Discussion)

10. Ch. n+1: General Discussion
11. Ch. n+2: Summary/Conclusions

- the summary/conclusions may be included in the General Discussion

12. References**
13. Appendices

*Literature review: May be presented in manuscript format as a review paper suitable for submission to a scientific journal. However, a thesis presented in manuscript format must include at least one other manuscript chapter (i.e. Ch 3 to n - see below).

**References: Should contain all references cited in the thesis, including those presented in the manuscripts. The individual manuscript chapter(s) therefore do not require separate reference sections.

Points (2) and (3) noted above are particularly important for Ph.D. theses. It is expected that these aspects of the thesis will be presented explicitly in both thesis formats. In the manuscript format this can occur either in Ch. 1 or Ch. n+1. It is the responsibility of the Supervisory and Examining Committees to ensure that these elements are included.

Requirements for manuscript thesis format A minimum of one manuscript chapter is expected for a M.Sc. thesis, while a minimum of two manuscript chapters is expected for a Ph.D. thesis. Note that these minima do not include review papers submitted as part or all of the thesis' literature review. In cases where fewer than the minimum required number of chapters are included in the thesis, adequate justification for selecting the manuscript format must be supplied by the candidate in a separate letter to the Examining Committee (selection of the manuscript format for the thesis simply to accommodate a previously-published paper is not adequate justification).

If the manuscript format is adopted, it is expected that the student will be sole or first author on all papers included in the thesis. In the case of joint authorship, there must be a statement clearly outlining the role of the respective authors and, in particular, making very clear the extent and nature of the contribution of the thesis author. This statement should be signed by the co-authors or at least by the senior author (if other than the candidate) to indicate that they are in agreement that the contributions of the thesis author are as stated. This statement must be forwarded to the Examining Committee prior to the thesis defence.

A General Introduction and General Discussion is required for all manuscript-style theses regardless of the number of manuscript chapters. For multi-manuscript theses, the purpose of the General Introduction will usually be to identify the common theme that unites the manuscript chapters. For a single-manuscript thesis the purpose of the General Introduction will usually be to provide the broader context for the research. In either case, the General Introduction can serve to provide more background information than would usually be provided in the Introduction and Methods sections of a published paper (e.g., additional details of the study system).

Copyright, authorship and publication of thesis material

The thesis document is copyrighted to the student (for more details on copyright, contact Graduate Studies). Therefore publication of the thesis, in whole or in part, can only be done with permission of the student. If manuscripts which have been published prior to submission of the thesis are to be included, a letter of permission to copy the manuscript(s) must be obtained from the publisher and included in the thesis (in an appendix).

In all cases, the following information must appear on the title page of thesis manuscripts:

1. Previously Published Manuscripts: (a) where possible, the title page of the camera-ready manuscript. Note that the reproduction must follow Trent's guidelines for the thesis submission format; or (b) [if (a) is not available or appropriate] full reference to the publication (as well as indication of previous copyright) must be included.
2. Manuscripts Submitted or In Press: (a) full authorship as stated in the submitted manuscript; and (b) complete and clear reference to and status of (submitted or in press) the submission.
3. Unpublished Manuscripts: full list of authors.

Appendix E - Steps Toward the Thesis Defence

- 1) Start planning your defence 4 – 6 months ahead of your anticipated completion date. There is a lot involved in submitting and defending a thesis. Develop this plan with your supervisor.
- 2) Full-time students are required to have a supervisory committee every 6 months. Check with your supervisor to see if you should have supervisory committee meeting before submitting your thesis for step 1 approval. If yes, use this meeting to obtain agreement from your committee regarding timelines to completion.
- 3) Your thesis must be approved by your supervisory committee before it can be submitted to ENLS for defence. This procedure involves the completion of a Step 1 form by your supervisor and your committee. But, your supervisor must first approve your thesis before it is sent for Step 1 approval by your committee. Speak to your supervisor about expectations involving Step 1 approval early on (before you start writing the thesis). Most theses require numerous rounds of revisions before it can be sent to your supervisory committee. This usually takes longer than most students anticipate. Again, talk to your supervisor early on about expectations regarding turn-around times and other issues related to thesis revision.
- 4) After obtaining approval from your supervisor, your thesis is ready to be sent to your entire supervisory committee (including your supervisor) for Step 1 approval. Every member of your supervisory committee must sign off on your thesis and submit a completed Step 1 form to the Linda Cardwell, Program Coordinator, via e-mail. You may find a copy of the Step 1 form on the School of Graduate Studies website or on the ENLS website or making a request to enlsgrad@trentu.ca.
- 5) Send a copy of your thesis and the Step 1 form to your committee by email and copy enlsgrad@trentu.ca. Your committee will need some time to read and comment on your thesis. Students can usually expect committee members to return Step 1 forms within 4 weeks. However, consult with your committee before submitting your thesis to them to ensure that they are able to return your thesis in a timely manner (e.g., do not expect a rapid return of the thesis if a member of your committee is going to be doing remote field work). The program will track whether Step 1 forms have been returned within 4 weeks. If you experience (or anticipate) delays to the Step 1 approval process (e.g., delays of more than 4 weeks after sending the thesis for Step 1 approval and/or longer delays than agreed to by the committee at a recent committee meeting, if applicable), please contact your supervisor and/or the ENLS office immediately.
- 6) After obtaining Step 1 approval, submit your thesis (in Word format) via e-mail to the ENLS Program Coordinator (Linda Cardwell). At this point ENLS will begin scheduling your exam. Defence Date: It normally takes 6 weeks from the date your thesis and signed Step 1 forms are submitted to ENLS until the defence is held. This time is necessary for (1) ENLS to identify examiners and (2) examiners to have sufficient time to read the thesis.
- 7) Students are responsible for reviewing tuition and convocation deadlines. To be considered eligible for graduation, students must have defended their thesis, submitted an approved, final version of the thesis (pending any revisions required by the examining committee) to The School of Graduate Studies. Once submitted to Graduate Studies, ENLS must confirm to Graduate Studies that all other degree requirements have been met.
- 8) The Supervisor is responsible for sending a list of potential external and internal Examiners, including contact information (institution and e-mail addresses) to the Program Coordinator. All prospective Externals and Internals must not have had direct contact with the graduate student and the thesis research project. On consultation with the Program office, supervisors may informally approach potential Internal and/or Externals about their willingness to sit on a thesis defence, but the formal invitation will be issued by the Director or Coordinator.
- 9) The Director will invite suitable External and/or Internal Examiners and a Committee Member to serve on the Thesis Examining Committee. The Program office will arrange for a suitable defence

date. Unless otherwise communicated by the student to the Program office, the student is expected to be available for any defence date agreeable to the Thesis Examining Committee. Typically, a minimum of 6 weeks is required – from submission of the thesis and Step I forms until the defence. This period is needed to identify suitable examiners and allow them to review the thesis, offer comments, and prepare for the defence.

- 10) Following the defence, revisions are the norm. These revisions must be approved by those identified at the defence, typically the Supervisor. Once completed, this must be communicated by the Supervisor to the Program office. A student has not completed his/her program until copies of the thesis are approved and submitted to the Office of Graduate Studies.