



Master of Science

Department of Earth Sciences

GRADUATE HANDBOOK
2025

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Introduction

Welcome to the Department of Earth Sciences at Brock University. We hope you have a stimulating and enjoyable experience as a graduate student.

This document is intended as a resource for both graduate students and their supervisors. Most aspects of a graduate student's career at Brock are governed by University regulations. The official versions of these rules and guidelines are found on the Brock Website. Aside from a brief overview, these regulations are not reproduced in this handbook. Appendix 1 lists the most important links with a short explanation of their content.

In this guide you will find primarily information that is specific to the procedures and practices within the Department of Earth Sciences.

University Regulations

There are two principal sources for regulations relevant to graduate students and it is suggested that you spend some time becoming familiar with these sources:

Graduate Calendar

The graduate calendar contains the regulations for the M.Sc. in Earth Sciences, including degree requirements and course descriptions. Please note: the calendar of the year of initial graduate enrolment governs a Graduate Student's program.

The calendar also contains the Academic Regulations and University Policies. These regulate most aspects of a student's academic life, including registration policies and procedures, degree completion time limits, research policies and procedures, ownership of intellectual property, thesis defence and academic integrity.

Faculty of Graduate Studies and Postdoctoral Affairs

The Faculty of Graduate Studies and Postdoctoral Affairs (FGSPA) maintains a comprehensive website for all Graduate Student related issues. It is the best source for financial information, thesis regulations and formats, and all forms that might be needed during your program. Your thesis must comply with FGSPA thesis format specifications. The website also contains FAQs, information for professional development as well as campus life in general. Many links ultimately lead you back to the graduate calendar, as it is the official document - the contract between the University and the student.

The Graduate Administrative Coordinator for the Faculty of Mathematics and Science is an important resource throughout your program, particularly as you prepare to defend your thesis. Defence copies of the thesis are submitted together with a *Master of Science Appointment of External Examiner* form that provides the contact information and credentials of potential external examiners (nominated by your committee), and the M.Sc. defence is scheduled through that office.

All students are expected to adhere to the University Policy on Academic Integrity in all aspects of their graduate program.

At the time your thesis defence draft is submitted, you will also have to submit a *Declaration of Originality*, declaring “any data included in the Results section of this thesis represent my own original work (except parts done by collaborator(s) as clearly indicated, if applicable) and they are presented in accuracy to my best capacity.” The Declaration of Originality and its intends also extend to ALL texts and figures presented in the thesis. Your supervisor(s) will have to sign that declaration as well.

Graduate Students' Association

As a graduate student you are represented by the Graduate Students' Association (GSA). Although the GSA does not directly deal with most academic issues, it does support graduate students in a variety of ways and organizes social and recreational events. The GSA also administers the Graduate Student Health Plan and Graduate Student U-Pass.

Departmental Regulations

The Department of Earth Sciences is governed by and subject to University Regulations. Departmental Regulations, therefore, outline the specifics of the implementation of the University rules. In addition, the Departmental Policies outlined below will elaborate and clarify some of the more general University policies.

People

We hope you will interact with people of the Department, other Departments and the University, but in general, the following are the most important contacts during your graduate studies:

Supervisor

Your Supervisor is the person with whom you will be working more closely than anyone else during the course of your studies. S/he will be your main source of guidance for all academic matters regarding your graduate program, including course selection, research funding, and degree progress, and will mentor you as you develop research and scientific communication skills. Most importantly, your Supervisor will guide you on all aspects of your M.Sc. thesis research, including proposed research topic selection, research direction, thesis writing, and thesis defence.

Supervisory Committee Members

Your one or two Supervisory Committee Members may be considered additional resources for your research and thesis, and program in general. The Committee Members usually have some expertise in your research area and will contribute advice on the selection of courses. The Committee Members help monitor your progress (see Committee meetings below), offer advice, and most importantly, read and provide feedback on your thesis and approve it prior to it going to defence.

Earth Science 4Pxx courses (one only) may substitute for a graduate course, providing the course (a) is approved by the supervisory committee, and (b) has the approval of the instructor. The graduate student taking such a course may be expected to do additional or different assignments to attain graduate credit for said course.

Graduate Program Director

The Graduate Program Director (GPD) is responsible for the administration of the graduate program, and s/he is the liaison with the Faculty of Graduate Studies and Postgraduate Affairs. S/he is available when you have specific issues regarding your master's program, for example, access to facilities, research progress, regulations, or funding issues. The Graduate Program Director will normally chair your committee meetings. It is suggested that you discuss any questions with your Supervisor prior to consulting with the Graduate Program Director. S/he will also schedule the Committee Progress meetings, usually once per year near the beginning of the Fall term, but more frequently, if needed, to monitor progress beyond the normal term of studies, which is 24 months.

Senior Lab Coordinator

You will normally work as a Teaching Assistant (TA) during your two-year stay as a graduate student in the Department. Note that you are eligible to work as a TA beyond the two-year program, but you then must compete with other applicants, and placements beyond the normal program term are based on experience and seniority, as specified in the Collective Agreement with CUPE 4207. The Senior Lab Coordinator will determine your TA assignments in consultation with your Supervisor. Any issues regarding assignments prior to, or during the work term, should first be brought to the attention of the Senior Lab Coordinator.

Departmental Seminars

Full-time Earth Sciences graduate students are required to attend all Departmental as well as Graduate Student Seminars. Failure to attend will result in the deduction of 2% for each seminar missed from the grade assigned by the supervisor for ERSC 5P95 (motion passed Dept. Meeting March 7, 2012).

Graduate Student Seminars

As part of their program requirements, students must present two seminars, one of which is to be aimed at an undergraduate audience and delivered in an appropriate undergraduate class, and the other should be presented at a conference, preferably one that is national to international in scope. An essay is required for the seminar on the topic related to the student's research thesis and interest to be presented to the undergraduate class (motion passed Dept. Meeting March 14, 2012).

Faculty of Math and Science Graduate Programs Office (MC D473)

This office is an important resource regarding administrative matters and questions about procedures and regulations. Please contact this office prior to asking the Supervisor or Graduate Program Director if related to matters of graduate program registration and requirements, financial matters, student status, reimbursement for attending conferences, arranging thesis defence, and other matters of interest/concern to the student.

FORMS: Please submit all university forms to the Administrative Assistant and the FMS Graduate Administrative Coordinator as well as the Graduate Program Director for processing and to ensure that your student file is kept current.

Composition of Thesis Supervisory Committees

All students are supervised by a thesis committee. Thesis committee usually consists of the student's research Supervisor and one or two additional faculty members, the Supervisory Committee Member(s). Where there are two Co-supervisors, an additional Committee Member is required. The Graduate Program Director will normally serve as Chair of the Committee. Faculty members from other departments at Brock, or external agencies (e.g., Geological Survey of Canada) may serve as additional committee members.

Monitoring of Graduate Student Progress

Graduate Students are responsible for attending committee meetings called for by the Graduate Program Director and scheduled by the graduate student, and they must come prepared with material/information requested by the GPD. The thesis committee meets at least three times during the Graduate Student's program; more often if warranted. Graduate Student progress is monitored using the form listed in Appendix 2.

The first committee meeting is used to decide on the courses you are required to take and on the timing of these courses. In addition, several other forms will be filled out at this time and submitted to the GPD and the Graduate Programs Office. Also, a preliminary research outline will be discussed during the initial meeting. This meeting is normally scheduled within the first two months of your first semester on campus. Subsequent meetings are primarily designed to monitor your progress.

If your progress has been deemed unsatisfactory, the committee will design a plan to remedy the situation. This plan will normally include a set of agreed upon milestones with deadlines which will be monitored by your supervisory committee, but foremost by your supervisor. You may be dismissed from the graduate program if you are unsuccessful in following this plan.

Registration Throughout the Program

Initial Registration

New students usually arrive on campus in late August or early September.

1) Get in touch with your Supervisor. S/he will decide who should be on your committee. The choice of Committee Members depends on your thesis topic.

2) You should discuss with your Supervisor (and Committee Member/s) what courses you should take as part of your graduate program. The first committee meeting is for formalizing the choices.

Since steps 1 and 2 usually do not take place at the beginning of term, and most other courses are taken in Year 2, the course you need to register for prior to the meeting is the Master's Thesis (ERSC 5F90). In fact, you will need to register for that course every term until you graduate.

Graduate courses can be added after courses have been decided on during the Initial Committee Meeting. Course registration is done for each course only at the beginning of the term in which you take the course.

You are required to be registered as a student during every term of your studies in the program and ensure that your fees are paid by the set deadlines (late registration fees will be administered by the University). Please register for your graduate courses in the term decided upon during your committee meetings. Full information about registration, change of courses, withdrawals, etc. is available at the Brock Website listed in Appendix 1. Students who fail to register for any term, and who have not applied for inactive status or been granted a leave of absence, are considered to have withdrawn from their program of study. The student will be required to apply for reinstatement into the program.

Thesis Format - copyright material

The Copyright Act allows anyone to deal with copyright material for the purpose of research provided the use is 'fair' and the work is properly credited. Use of data, values, numbers should be considered similar to figures and tables by affording proper credit/citation to the original author(s). However, if extensive use of copyright material (multiple figures, tables, etc.) from a single source is anticipated it is advisable to seek permission of the author/publisher by contacting them through the pertinent web links. See the University Policy on Academic Integrity for additional guidance, and in doubt, seek guidance from your Supervisor/Supervisory Committee.

MSc Thesis Submission Procedure

When is it time to stop collecting data and write the thesis?

The student and supervisor normally determine when sufficient data have been collected to complete the thesis. It is advised that a committee meeting be used to document this milestone. Keep in mind once the thesis defence draft has been approved by the supervisor and supervisory committee members, only then, will it be submitted to the External Examiner for review. Typically the thesis defence will take place 4 to 6 weeks following receipt of the External Examiner's review. So in a normal 2-year (6-term) program, writing should ideally begin before the end of term 4.

First Draft Submission for Tuition-Fee Reduction (Final Stage Status)

Once the student has completed a first draft of their thesis and it has been reviewed and accepted by his/her supervisor, the student may then submit the approved draft along with the first draft form (available from the Faculty of Graduate Studies) to the Graduate Program Director. The student is then eligible to apply for first draft tuition-fee reduction (First Draft Stage Status). Please note that the first draft requires the thesis to conform to proper thesis standards, including abstract, figures, and references. The website for thesis format regulations and fee reductions is listed in Appendix 1 (Faculty of Graduate Studies). Note: This First-Draft Tuition-Fee reduction is valid ONLY for ONE semester; no extensions will be granted (except under special circumstances), then the REGULAR fee structure applies until graduation.

At the time your thesis defense draft is submitted, you will also have to submit a *Declaration of Originality*, declaring “any data included in the Results section of this thesis represents my own original work (except parts done by collaborator(s) as clearly indicated, if applicable) and they are presented in accuracy to my best capacity.” The Declaration of Originality and its intends also extend to ALL texts and figures presented in the thesis. Your supervisor(s) will have to sign that declaration as well.

Internal Thesis Review

Before your thesis can be submitted to the external reviewer for the final defence, it undergoes an internal thesis review. The Supervisor and Committee Members must agree that the thesis can be defended in its submitted form. Adequate time, of about two-three weeks (or more), must be allocated for Supervisory Committee members to read the thesis draft.

The thesis may be submitted for external review once required revisions have been made, as recommended in the internal review.

The student must submit the thesis for defence to the Graduate Programs Office, Faculty of Mathematics and Science.

External Thesis Review and Defence Date

Once the thesis has passed internal review, the student should contact the FMS Graduate Programs Office and visit the [Resources for Current Graduate Students, FMS](#) webpage, Arranging M.Sc. Thesis Defence for procedures to follow such as formatting, and other matters pertaining to the actual submitting the thesis for external review and arranging the Thesis Defence.

The supervisor will compile a list of three potential external examiners and their contact information, ranked in order of preference. The external examiner will provide a report on the acceptability of the draft thesis to the Graduate Program Director and the FMS Graduate Programs Office that will be shared with the examination committee and the graduate student prior to the defence. Please note that the date for the defense will normally be 4-6 weeks from submission of the thesis for external review.

The student should forward an electronic copy of the thesis to the GPD and the FMS Graduate Programs Office, along with the Declaration of Originality and MSc Appointment of External

Examiner form. Forms and detailed instructions are available on the FMS Graduate Student Resources page, under “Arranging MSc Thesis Defence”.

Under no circumstance will suggested corrections and questions by the External Examiner and Committee Members be passed on to the student.

MSC DEFENSE FORMAT

Examining Committee Composition

The Examining Committee is composed of a chair (Faculty Dean or delegate), the external examiner*, the thesis supervisor(s), the committee members and any other members that may have been on the supervisory committee.

The Examining Committee of a master's thesis defence will minimally comprise the supervisory committee and an external examiner from outside the university or from outside the program but within the University. The approval of the external examiner is the responsibility of the Faculty Dean or designate. In exceptional circumstances, an external examiner who is external to the supervisory committee but internal to the program may be appointed. Such an examiner will need to be approved by both the Faculty Dean and the Dean of Graduate Studies.

Format of Exam

- In accordance with University regulations the defence will be open, which means that members of the audience will be allowed to be present for all rounds of questioning.
- Exam chair introduces committee and candidate, explains the format of the defence.
- Candidate presents a research seminar, approximately 20-30 minutes in length.
- Floor is open to questions from the audience.
- This is followed by a short break. Audience may remain but may not ask further questions.
- Order of questioning is usually the external examiner, the committee member and finally the supervisor. The chair of the examining committee is not required to participate in the questioning period.
- The defense period will be limited to 2 hours, normally consisting of two rounds of questioning by the examining committee.
- When the committee is satisfied with the questioning, the Chair thanks the candidate and the audience, who then leave the room so that the Committee may deliberate *in camera*.

Possible Outcomes of the Exam

All members of the examining committee, excluding the committee chair, will vote on the outcome of the exam and thesis.

Fail - the majority of members of the committee, including the external examiner vote to fail

Pass - the majority of members of the committee vote to pass

In the event of a tie vote, the vote of the external examiner will determine the outcome of the exam.

All members of the examining committee, excluding the committee chair, will vote on the thesis. The examining committee has the following options:

- Thesis is satisfactory and accepted as submitted
- Thesis is accepted after minor corrections or modifications (editorial changes that can be completed within a few weeks, verified by supervisor)
- Thesis is accepted conditionally upon completion of major modifications (substantial rewriting and reinterpretation to be completed within several months, to be examined by entire committee)
- Thesis is unsatisfactory and not acceptable.

Students are given up to four weeks to complete minor revisions, which are to be approved by the graduate supervisor. Up to 12 weeks may be given to complete major revisions, which are to be approved by the graduate supervisor and external examiner should he/she have requested it.

If revisions are necessary, the committee will specify the areas for revision and the date by which the required revisions must be completed. The student's supervisor(s) are responsible to confirm to the FMS Graduate Programs Office timely that the revisions are complete. A Pass Grade for the thesis course is assigned upon supervisor's confirmation that the revisions are complete.

Once the final revisions are completed as required by the Examination Committee and approved by the Supervisor, the student must upload the final version of the thesis to the Brock University Digital Repository. The thesis must meet the e-Thesis format specifications set by FGS. Instructions for uploading thesis to the Digital Repository are posted on the Faculty of Graduate Studies website.

Copyright forms need to be signed and sent to the FMS Graduate Program Office.

Under certain circumstances (e.g., to protect confidential commercial information, patentable material) a graduate student may request a restriction on the circulation of the thesis for up to a period of 12 months.

In the instance of a failed defense, the student may, at the discretion of the Examining Committee, be permitted a second and final thesis submission and defence. This will be scheduled for no later than one calendar year after the original presentation and defence. In preparation of the thesis for

resubmission, you will be guided by the written reviews submitted of members of the Examining Committee.

Final Thesis Submission

The thesis that the student uploads to the Brock Digital Repository must be free from typographical and other errors and all copies must be identical in content, each containing all illustrations, charts, maps, figures, tables and appendices as approved by the Examining Committee.

Certificate of Approval signed by each member of the Examining Committee and other thesis paperwork will be submitted to FGS by the FMS Graduate Programs Office.

The Faculty of Graduate Studies will review the submission and if no issues are detected, FGS will ensure submission to the library. FGS will inform the student if any formatting revisions are required.

Graduation

Students are responsible for submitting their intent to graduate.

Upon completion of all academic degree requirements, the Faculty of Graduate Studies will conduct a comprehensive review of the student's record. Graduate Studies and the University may have additional requirements, such as payment of outstanding fees.

Conflict Resolution for Graduate Students

If a graduate student encounters a conflict that can not be resolved with their supervisor, the graduate student should then inform the graduate program director of the problem and the graduate program director will try to facilitate a satisfactory resolution to the conflict. If the student's supervisor is the graduate program director, the conflict should be directed to a member of the departmental graduate committee where the graduate committee will try to facilitate a satisfactory resolution to the conflict. If a satisfactory resolution to the conflict is not reached, the departmental graduate committee will then make a recommendation to the Associate Dean of Graduate Studies and Research, Faculty of Mathematics and Science for resolving the problem, after which, the Dean's office will decide on any potential course of action.

The student may be accompanied to any interviews by one of the departmental student representatives or faculty, staff or student member of Brock such as, but not limited to, a representative from the Student Development Centre or the Ombuds Officer.

Appendix 1

Graduate Calendar

The graduate calendar contains the program requirements and academic regulations for most situations. Please note that the calendar of the year of the initial graduate enrollment is the one that governs a graduate student's program.

<http://www.brocku.ca/webcal/index.php>

Faculty of Math and Science Graduate Programs Office

[Resources for Current Graduate Students - Faculty of Mathematics & Science \(brocku.ca\)](#)

Faculty of Graduate Studies and Postdoctoral Affairs

Most links related to graduate studies can be found directly at the graduate studies website:

[Graduate Studies \(brocku.ca\)](#)

Thesis Format Regulations

<https://brocku.ca/graduate-studies/wp-content/uploads/sites/181/E-Thesis-Format-Specifications-32269-03-2017.pdf>

Forms

In addition to the departmental forms in this guide, there are Brock forms for most occasions. Many are clustered here:

[Student forms - Graduate Studies \(brocku.ca\)](#)

Brock University's Faculty Handbook: [Faculty Handbook - University Secretariat \(brocku.ca\)](#)

Graduate Student Association: [Graduate Students' Association \(brocku.ca\)](#)

[Student Wellness and Accessibility Centre: https://brocku.ca/health-wellness-accessibility/](#)

Academic Integrity Office: [Studying with integrity - graduate - Academic Integrity \(brocku.ca\)](#)

Appendix 2

Graduate Student Progress Report

Name of Student: _____ Date: _____

Committee: _____

Supervisor

Committee Member(s)

Chair of meeting

Thesis Title: _____

Date of Enrolment in M.Sc. Program: _____

Report Period: Meeting 1 (), Meeting 2 (), Meeting 3 (), Meeting 4 ()

Anticipated Completion Date: _____

Courses completed to date and grades

Course: - date completed and grade _____
Course: - date completed and grade _____
Course: - date completed and grade _____
Course: - date completed and grade _____

Courses to be completed (specify course & term)

Course: _____
Course: _____
Course: _____
Course: _____

Documentation: NSERC Consent Form, Safety Training, Timetable

Research Progress: _____

Demonstration Performance:

Teaching Assistantship: Continue Discontinue

Other Information

Publications (#, journal and title with authors)

Conference Proceedings (#, conference with title of authors, date)

Other Contributions

Student:

Date:

List of awards:

Recommendation of the Committee:

- Progress Satisfactory
- Progress Needs Monitoring (give details) _____
- Progress Unsatisfactory (specify reasons) _____

SIGNATURES:

Student: I have seen this report.

Supervisor: _____

I agree I disagree

Committee Member: _____

Committee Member: _____

GPD: _____

Notes: _____

