



Department of Earth Sciences

Graduate Student Handbook

2024

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GENERAL INFORMATION

Welcome to the Earth Sciences Department at Memorial University of Newfoundland. Memorial has one of the largest and most diverse Earth Science departments in Canada. With 22 faculty members, 11 staff members, and leading-edge teaching and research facilities, the department is able to offer high quality undergraduate and graduate degree programs. Many of our students find government and industry employment/internship opportunities during the summer within the Province and elsewhere in Canada, and graduates of Memorial's Earth Sciences Department have gone on to careers in academia, government, and the private sector all over the world.

Our faculty and their students, both undergraduate and graduate, and post-doctoral fellows, are engaged in applied and basic research projects in many major areas of Earth sciences, encompassing geochemistry, mineralogy, economic geology, structural geology and tectonics, sedimentary geology, paleontology, environmental and hydrogeology, marine geology and applied geophysics. A range of approaches are taken in research, including field work, laboratory analysis and computational modelling.

The Province of Newfoundland and Labrador is an excellent natural laboratory in which to study Earth sciences, with world-class sites such as the Bay of Islands ophiolite, Mistaken Point – famous for Ediacaran fossils – and resource prospects within well exposed sections of the Appalachian orogen and the Central Mineral Belt in Labrador. There are pristine boreal and sub-arctic terrestrial, coastal and marine environments throughout the Province.

Many of our courses and research projects have field-based components. In addition, the Earth Sciences Department at Memorial University houses state-of-the-art geochemical facilities, a large range of geophysical survey equipment and substantial computational resources in both hardware and software.

Our department participates in the interdisciplinary graduate program in Environmental Sciences. With the growth in natural resource exploitation and human activities, there are expanding opportunities in this field.

The Details: Keeping Up To Date

This document contains information specific to Graduate programs in the Earth Sciences Department, and is, in part, modified from the University Calendar. This handbook is accurate at the date of issue (February 2023). In the event of a conflict between the content of this document and the University Calendar, the [regulations](#) in the University Calendar have precedence. Where relevant, links to specific parts of the University Calendar are provided.

The University reserves the right to make changes to the regulations, fees and charges. It is the student's responsibility to be aware of these changes (see [University Calendar](#)) and the applicable deadlines (see [University Diary](#)). Students should also become familiar with the School of Graduate Studies General Regulations, the degree regulations and relevant departmental policies (see [University Calendar](#)).

Communication

The University has a single e-mail [policy](#). All official communication should be conducted through an @mun.ca address.

GRADUATE PROGRAMS SUPERVISED BY FACULTY IN EARTH SCIENCES

There are four graduate programs in the Department of Earth Sciences:

M.Sc. in Earth Sciences, Geology
M.Sc. in Earth Sciences, Geophysics
Ph.D. in Earth Sciences, Geology
Ph.D. in Earth Sciences, Geophysics

All are thesis/research-based. Our faculty also supervise students in the following interdisciplinary programs (administered by the Faculty of Science):

[M.Sc., Environmental Science](#) (a thesis/research-based Masters)

[M.Sc., Scientific Computing](#) (a thesis/research-based Masters)

REQUIREMENTS FOR ADMISSION TO GRADUATE SCHOOL

Details of the qualifications for admission can be found in the [General Regulations](#) governing the School of Graduate Studies in the University Calendar.

APPLICATION PROCEDURE

Details of the [application procedure](#) and access to the web application forms can be found at the School of Graduate Studies web site. Paper applications are also available on request.

TUITION AND FEES

Please see the university regulations concerning the payment of [university fees and charges](#). Tuition fees, residence fees, student union fees and health/dental insurance are due once a student registers regardless of the method of registration, and must be paid by the fee deadline to avoid a late payment penalty.

There is a minimum fee for a graduate degree. The amount of this fee for all Canadian and international students will depend on the semester fees in effect during their period of registration. Semester fees are subject to review at least annually. For the most up-to-date information, visit the [Financial and Administrative Services webpage on tuition and related fees](#). At the time of first registration, a master's candidate must select a payment plan: generally, for full-time students this is Plan A covering 6 semesters, or for part-time students Plan B covering 9 semesters. The payment plan can only be changed in the first semester of study. After the first semester, the payment plan will remain in effect for the duration of the student's period of registration and cannot be changed. There is a fixed payment plan, covering 12 semesters, for doctoral students.

A student who completes their program in a period of time shorter than that covered by the selected payment plan will, in their final semester, be required to pay the amount owing. A student whose program extends beyond the period covered by the selected payment plan will be charged a continuance fee for each additional semester of registration. Graduate students who wish to have their tuition paid from their bi-weekly financial support can request the service online through [Memorial University Self-Service](#). In such cases, semester program and ancillary fees will be allocated over the number of pay periods available within a given semester and will be deducted from the student's bi-weekly support. To sign up for payroll deductions through Self-Service, students may click on the "Employee Services" tab and then the "Graduate Student Payroll Deduction Request." Graduate students signing up for payroll deductions must do so every semester. Current students already on funding will be able to sign up for online payroll deductions 24 hours after they register. New students will be able to sign up for online payroll deductions at least two weeks prior to the first day of classes. All graduate students must complete their online submissions before the last day to register (two weeks after the start of classes). To avoid late fees, students should pay fees, or sign up for payroll deduction, by the

deadline dates noted in the [University Diary](#). After the last day to register, students will not be able to sign up for payroll deductions until the following semester.

GRADUATE PROGRAM INFORMATION, PROCEDURES, POLICIES AND REGULATIONS

M.SC .PROGRAM POLICIES AND REGULATIONS

This section is, in part, modified from the University Calendar. The [complete regulations](#) are available online.

- I. Admission into a Master's degree program in Earth Sciences (Geology) and Earth Sciences (Geophysics) is normally restricted to candidates holding at least a B.Sc. degree with second class Honours. When circumstances warrant, this requirement may be waived by the School of Graduate Studies on the recommendation of the Head of the Department.
- II. The candidate will be assigned a multi-member supervisory committee. This committee shall consist of the Supervisor and at least one other member.

Within two weeks of registration in the M.Sc. Degree program, a candidate will meet with their supervisory committee.

Within six months, the student and the supervisory committee will agree on a written thesis proposal outlining the objectives, methods, timetable and funding for the project, and provide the proposal (signed by the student and supervisory committee) to the Graduate Officer for inclusion in the student's file.

The M.Sc. thesis proposal should contain:

Thesis title

Introduction- outlining the scientific problem to be addressed in the thesis

Literature review- should be a thorough review of existing literature pertinent to the subject matter of the thesis

Methods- field and/or analytical techniques to be used in the course of the study

Timeline- a REALISTIC timeframe for completion of the thesis including:

Timing of field seasons

Time for laboratory analyses

Time needed for data interpretation

Time for thesis writing- indicating whether a conventional thesis or by papers

Summary of resources needed for fieldwork and analyses

The thesis proposal should be not more than 5,000 words in length

At six months into the program MSc students will attend a meeting with the Head of Department (or delegate) and the Graduate Officer. Meetings will be held earlier if the normal meeting at 6 months into the program interferes with fieldwork. The meeting will not normally be postponed.

At the meeting the student will be expected to have already submitted:

1) A thesis proposal along with an [M.Sc. Thesis Proposal Submission Form](#).

2) A completed [Graduate Student Annual Progress and Supervisory Report Form](#). This is a School of Graduate Studies requirement, and the form will NOT receive departmental approval until after this meeting.

NOTE! A timeline to completion must be included as addendum to the form.

Subsequent meetings at 12, 24 and 36 months into the program will be triggered by non-receipt of Annual Progress and Supervisory Report Form or any irregularities in progress (e.g. courses not completed, thesis proposal not submitted, progress not satisfactory etc...). Students may also request annual meetings with the Graduate Officer and Head of Department if necessary.

- III. A candidate for the M.Sc. degree must complete a MINIMUM of 6 credit hours in program courses. The courses must be EASC 6000 or EASC 7000 level courses or, with the approval of the supervisory committee and Head of the Department, graduate level courses offered by other departments. Depending on their background and/or area of specialization, a candidate also may be required to complete additional courses in Earth sciences or related subjects.
- IV. All course requirements should normally be completed within one year from the date of registration in the M.Sc. degree program.
- V. A candidate is required to give two oral presentations to the Department on the subject of their research. The first presentation is usually given after six months, ideally shortly after the thesis proposal is submitted, in a 'proposal seminar' session with other M.Sc. students. The second presentation is an 'exit' seminar on final results, normally given shortly before final thesis submission. Should a student be conducting proprietary research, their seminars can be of a general nature, relevant to their research, or a literature review of their topic.
- VI. The M.Sc. degree program will conclude with a thesis examination as prescribed in the General Regulations governing the M.Sc. degree ([the MSc Thesis Submission Procedures](#) are outlined in full in the University Calendar).
- VII. The Supervisor and the Head of the Department may recommend to the Dean of Graduate Studies that a candidate who is not making satisfactory progress be terminated from the program.

PH.D. PROGRAM POLICIES AND REGULATIONS

This section is, in part, modified from the University Calendar. The [complete regulations](#) are available online.

- I. Each candidate is required to pass a Comprehensive Examination.

The Comprehensive Examination is carried out under the auspices of the School of Graduate Studies. This examination shall be conducted by an Examination Committee appointed by the Dean of Graduate Studies on the recommendation of the Academic Unit. It shall consist of the Head of the Academic Unit (or delegate) who shall be the Chairperson, the candidate's Supervisor, at least three other members, and (optionally) a delegate from the Dean of Graduate Studies. The total voting members must be an odd number. All members of the Committee including the Chairperson, but excluding the Dean of Graduate Studies' delegate (if present), shall be voting members.

The purpose of the Comprehensive Examination is to ascertain that the candidate has a mastery of those sub-disciplines appropriate to their thesis research area, and that they can also relate the specialization of their research to the larger context of these sub-disciplines. It is also intended to determine whether the candidate has sufficient knowledge and comprehension to successfully prosecute the proposed research. Further, it is intended to encourage students to write and plan out potential contributions from their research.

- II. Each candidate shall present a thesis embodying the results of original research.
- III. The Departmental policies concerning the number and specific credit hours that may be required for a program are outlined below.

Departmental Policies

This section is, in part, modified from the University Calendar.

- I. Admission into the Ph.D. program in Earth Sciences (Geology) and Earth Sciences (Geophysics) is normally restricted to candidates holding a Master's degree or its equivalent. However: i) candidates holding a B.Sc. (Honours) degree who show evidence of exceptional ability may be considered for direct entry into the Ph.D. program; and ii) in exceptional circumstances, a candidate with a B.Sc. (Honours) degree who has spent not less than 12 months in an M.Sc. degree program may be recommended for transfer into a Ph.D. program, provided that the candidate can demonstrate, to the satisfaction of the supervisor and the Head of Department of Earth Sciences, their ability to pursue research at the doctoral level.
- II. Within the first month in the Ph.D. program, the candidate will meet with their Supervisory Committee. The purpose of this meeting is to draw up the candidate's program of study and research and to determine whether their background is appropriate for the proposed course of study.
- III. A candidate for the Ph.D. degree is required to complete a minimum of 6 credit hours of courses: these cannot include credit hours undertaken for a prior M.Sc. Degree. The courses will normally be selected from the graduate courses offered in the Department of Earth Sciences¹; however, graduate courses offered by other departments can also be selected with the approval of the supervisory committee and Head of Department. Depending upon the recommendation of the Supervisory Committee, the candidate may be required to take additional courses to improve their Earth sciences background. All course requirements should normally be completed within the 12 months following registration in the Ph.D. program. Only those courses specified by the supervisory committee are required for a graduate degree program in Earth Sciences.
- IV. The Ph.D. Comprehensive Exam will normally be taken no later than the end of the fourth semester following the student's registration in the Ph.D. program. For students for whom English is a second language, the exam will normally be taken no later than the end of the fifth semester following the student's registration in the Ph.D. program.
Note: Detailed descriptions of the Ph.D. Comprehensive Exam are included below.
- V. At six months into the program, Ph.D. students will attend a meeting with the Head of Department (or delegate) and the Graduate Officer. Meetings will be held earlier if the normal meeting at 6 months into the program interferes with fieldwork. This meeting will not normally be postponed.

At the meeting the student will be expected to have handed in a Graduate Student Annual Progress and Supervisory Report Form. This is a School of Graduate Studies requirement.

NOTE! A timeline to completion must be included as addendum to the form.

Subsequent meetings at 12, 24, 36, 48, and 60 months into the program will be triggered by non-receipt of Annual Progress and Supervisory Report Form or any irregularities in progress (e.g. courses not completed, comprehensive examination not completed, thesis proposal examination not completed etc...). Students may also request annual meetings with the Graduate Officer and Head of Department if necessary.

¹ A selection of courses will be offered to meet the requirements of candidates as far as the resources of the Department allow.

- VI. A Ph.D. candidate is required to give an oral presentation to the Department on the results of their research. This presentation is usually given during the third or fourth year of the program, and may consist of completed work, or work in progress. The presentation must take place within the Graduate Student Seminar Series (GS³). Should a student be conducting proprietary research, their seminar can be of a general nature, relevant to their research, or a literature review of their topic.
- VII. The Ph.D. degree program will conclude with a thesis examination and an oral defence of thesis as prescribed in the General Regulations (the [PhD Thesis Submission Procedures](#) are outlined in full in the University Calendar).
- VIII. The Supervisor and the Head of the Department may recommend to the Dean of Graduate Studies that a candidate who is not making satisfactory progress be terminated from the program.

Ph.D. Comprehensive Examination

- I. The Ph.D. Comprehensive Examination requires one paper to be written by the candidate, approximately 7,500 words in length (~25 pages double-spaced not including references and figures). The paper should review the relevant literature for the student's broad field of research, introduce their proposed research topic, review any completed research, and present a detailed section-level outline for their thesis. Approximately 50% of the paper must be dedicated to background material and literature review covering three subdisciplines determined by the examining committee (General Regulation [4.8.2](#)), and 50% must be dedicated to the doctoral research project and intended outcomes. The candidate subsequently presents this paper orally to the Examination Committee and defends it during questioning by the Committee (see V-VI below).
- II. The Examination Committee will be selected in compliance with University Calendar regulations ([4.8.2](#), point 2). The student will meet with the Examination Committee to ensure that the scope of the expected literature review, and other required components of the paper, are clear to all examiners and the student, as well as to confirm that the student has completed enough research to proceed to the exam. The student is expected to consult with their Supervisor and members of the Examination Committee during the preparation of the paper. However, the actual writing of the paper is to be done exclusively by the student.
- III. A meeting with the Examination Committee (minus Dean of Graduate Studies) should normally take place within the student's first year in the program, but not less than three months before the proposed date of the Comprehensive Examination. The date of the examination will be set at the time of this meeting.
- IV. The candidate shall distribute one copy of the paper at least two weeks prior to the examination to each of the following: Head of the Department of Earth Sciences, the Head's assistant, each member of the Supervisory Committee, and each member of the Examination Committee.
- V. The oral component of the Comprehensive Examination is a public 20-30 minute oral presentation of the research paper by the candidate, followed by closed (in camera) questioning by the Examination Committee on the contents of the paper.
- VI. The duration of the examination will not normally exceed three hours.
- VII. Members of the Comprehensive Examination Committee shall decide the results of the comprehensive examination based on regulations specified in the University Calendar, "[Ph.D. Comprehensive Examination](#)" ([4.8.2](#)). Three options are available to the examining committee: Pass (requires a majority vote), Re-Examination (requires a majority vote), and Fail (requires a unanimous vote).
- VIII. If the student receives a Fail on the Comprehensive Examination, their program is terminated.

- IX. If the student passes the Comprehensive Examination, but gaps or weaknesses in the student's knowledge are identified, the student may be required by the Examination Committee to take one or more specifically recommended additional course(s) and to achieve a minimum of a B grade in those course(s). The committee may also recommend specific reading to remedy the deficiencies.

Ph.D. Candidate's Right to Appeal

University regulations allow the candidate to appeal the decision of the Dean of the School of Graduate Studies, who communicates the results of the exam to the candidate. An appeal should be directed to the Chair of the Appeals Committee in care of the School of Graduate Studies (see the University Calendar for details [4.6.2](#)).

ENGLISH PROFICIENCY FOR ENGLISH AS A SECOND LANGUAGE (ESL) STUDENTS

This section is, in part, modified from the University Calendar to make it specific to the Earth Sciences graduate programs. The complete regulations can be found online (clause [4.2](#)) ESL students should also visit the following [link](#).

English Proficiency Requirements

Since English is the primary language of instruction at this University, all applicants seeking admission to the School of Graduate Studies must possess an adequate knowledge of written and spoken English as a prerequisite to admission. Regardless of country of origin or of citizenship status, applicants will be required to demonstrate proficiency in the English language. This demonstration may take one of the following forms:

- I. Successful completion of the equivalent of three years of full-time instruction in an English language secondary institution as recognized by Memorial University of Newfoundland including successful completion of at least two courses in English Language and/or Literature at the Grade 12 (or equivalent) level. Please note that these courses must be other than English as a Second Language (ESL) courses.
- II. Successful completion of a baccalaureate degree from a recognized University where English is the language of instruction and from which transfer of credit may be allowed by Memorial University of Newfoundland.
- III. Successful completion of a post-graduate degree program at a recognized University where English is the language of instruction and from which transfer of credit may be allowed by Memorial University of Newfoundland.
- IV. Submission of official results of the Test of English as a Foreign Language (TOEFL) with a paper-based score of 550 (or higher)/computer-based score of 213 (or higher) or Internet-based with a score of 80 (or higher) and the Test of Written English (TWE) with a score of 4 (or higher).
- V. Submission of the official results of the Michigan Test of English Proficiency with a score of 85% (or higher).
- VI. Submission of the official results of the English Language Testing Service (ELTS) Test with a score in Band 6.5 (or higher).
- VII. Submission of official results of the Carleton Academic English Language (CAEL) Assessment with a minimum score of between 50 and 60 in each of four bands, with at least 2 band scores of 60.

- VIII. Submission of official results of the Canadian Test of English for Scholars and Trainees (CanTEST) with a Band Level 4.5 in the listening comprehension and reading comprehension sub-tests and a score of 4 in writing.
- IX. Only in exceptional circumstances and only upon the recommendation of the Department/Faculty/School concerned, will the Dean consider applicants who do not meet one of the requirements listed in I-VIII above.

English Language Requirements Subsequent to Admission

Upon consultation with the appropriate academic unit, students may be required to complete successfully a course of language study designed to bring their English skills, in any or all of listening, speaking, reading, and writing, to a level required for graduate studies. Academic units may recommend additional language study to the Dean at any point in the program. Additionally, admitted graduate students will be able to self-select for and request additional language study by contacting their academic unit.

The course of language study available to graduate students will draw from select courses in Memorial University of Newfoundland's Intensive Bridge Program, including critical analysis and discussion, reading and critical response, and writing for university courses. The timing of courses taken by graduate students requiring further language study will be based on availability of spaces at any given semester.

Information regarding the TOEFL program is available from the Educational Testing Service, Box 899, Princeton, New Jersey, U.S.A., 08540; from U.S. embassies or consulates, or from offices of the U.S. Information Services.

*Information on the Michigan Test of English may be obtained from the Testing and Certificate Service, University of Michigan, 2001 North University Building, Ann Arbor, Michigan, U.S.A.
Information regarding the ELTS Test is available from the offices of the British Council, 10 Spring Gardens, London, SW1A 2BN, England.*

FIELD ACTIVITIES AND SAFETY

Many students will undertake field studies as part of both coursework and independent research. It is both prudent and required that anyone, faculty or student, involved in field studies follow regulations and best practices with respect to field safety.

Prior planning for any field activities must include safety planning, and preparation of required forms. Compliance with our safety guidelines is not difficult, and is very important. Generally, faculty are responsible for initiating safety procedures for organized course activities, whereas an individual conducting independent field activities, whether student or faculty, is personally responsible for their own compliance.

Details regarding safety, i.e., practice, policy, and requisite forms may be found on the Departmental [safety](#) website.

M.Sc. PROPOSAL SEMINARS

M.Sc. students starting their programs before Fall 2022 are required to present a seminar in the GS³ (see below), normally within the first year of their program. Students starting their programs in Fall 2022 or later are instead required to present a 'proposal' seminar, generally scheduled within their second semester, after their thesis proposals are submitted. Proposal presentations focus on background ideas, methods, approaches, and potential applicability, rather than results, and should be easily accessible for a general Earth sciences audience. Final thesis results are presented in the M.Sc. 'exit' seminar (see 'Examination of Thesis – M.Sc.')

PHD GRADUATE STUDENT SEMINAR SERIES (GS³)

Each Ph.D. graduate student in the Earth Sciences Department must give an oral presentation on the results of their research to satisfy departmental degree requirements. The following is a description of guidelines for organization and content of these presentations.

At the beginning of each academic year, the Head's Assistant will prepare a list of students who are required to present their seminars during that academic year. Students in the Ph.D. degree program must deliver their presentations during either their second or third year. Students will be notified by email near the beginning of the Fall Semester.

The informal name for this series of student talks is the "Earth Sciences Department Graduate Student Seminar Series." The faculty organizer for the seminars will develop a schedule of available times for talks, and notify students of this schedule. It is the responsibility of the student to select an available time and date, and notify the organizer. Scheduling is conducted on a first-come first-served basis.

In general, seminars will be held during the Fall and Winter semesters (not during holidays or exam periods). Two student talks will be scheduled for each session; each talk is scheduled for ~20 minutes duration, allowing for questions and changeover between talks. The faculty seminar organizer will provide a computer and projector for presentation of materials if the presentation is being held on campus. If the seminar is being held virtually, a short training session will be scheduled in Webex prior to the seminar.

The content of the student's presentation should be developed through consultation between the student and their supervisor, and should be focused on the topic of the student's research. The student should practice the talk, to assure that the length is appropriate and the presentation is professional. Students will normally present their seminars before their thesis research and writing are complete. Final thesis results are presented in the Ph.D. thesis defense (see 'Examination of Thesis – Ph.D.')

Note that students cannot graduate without completing this program requirement, and other seminars or seminar series cannot be substituted for the Graduate Student Seminar Series.

FORMAT OF THE WRITTEN THESIS

Completed theses are deposited electronically in a research repository, so there is no university requirement for hard copies to be produced, except if requested by an examiner. If a student wants to bind their thesis, then requirements for the page margins are different (see below) but otherwise the formatting requirements are the same as those for a purely electronic version.

Organization

The School of Graduate Studies has a list of regulations concerning the [format of the thesis](#) (margin width, minimum font size, lists of tables, figures etc.) that should be followed.

Length

There are no specific limits to the length of a thesis, but all graduate students are encouraged to present their research as concisely as possible, while including all relevant information and implications. Length is not a criterion in evaluating the quality of a thesis.

Thesis or papers?

All graduate students will have to make the choice of whether to write up their research project as a thesis or as a series of papers for submission to refereed journals. This decision should be made by the graduate student in consultation with their supervisor at an early stage in the program. There are advantages to both

choices and the graduate student should evaluate the options carefully. Writing up the research in thesis format generally results in a longer document, but may represent the preferred option for many students who are at the beginning of their research careers. Writing for a journal involves some repetition (e.g., in the Introduction to each paper) and generally takes longer, particularly if the student has to revise manuscripts during the course of their research program, but it can provide a very useful experience for graduate students who are considering an academic career as it establishes their publication record.

The School of Graduate Studies has some regulations concerning submission of a thesis as a collection of papers, notably that the papers must be connected by a common theme and that there must be introductory and concluding chapters of the thesis as a whole. Visit the link above for details.

The text below is modified from the School of Graduate Studies Guidelines for Theses and Reports. Please see the complete [guidelines](#) at the School of Graduate Studies website.

General Format

Theses may be prepared in traditional (unified) or manuscript (research paper) format. In traditional format the body of text, which may appear as a series of chapters, describes the work as a whole. Theses prepared in manuscript format present the research as a series of chapters based on published papers or papers prepared for publication. It is advisable to consider the thesis format that will best present the thesis research early in the program in consultation with the supervisor and the supervisory committee who must approve the final choice.

Although chapters (research papers) for theses prepared in manuscript format should be written as "stand alone" documents of published work or work prepared for publication, they must be logically connected and integrated into the thesis. An unconnected assembly of research papers is unacceptable. The format of each chapter must be consistent with the School of Graduate Studies General Regulations as described in this document. A literature review of broad scope and text describing how the chapters (research papers) are integrated must be presented in the Introduction and Overview chapter. Students considering submission of a thesis in manuscript format should seek specific guidance from their supervisor, both during the practical aspects of research and in the preparation of the thesis.

Order of Contents

The required components of a thesis should be ordered as in the table below.

Order of Contents	
<i>Traditional Format</i>	<i>Manuscript Format</i>
Title Page	Title Page
Abstract	Abstract
General Summary	General Summary
Co-Authorship Statement	Co-Authorship Statement
Acknowledgments	Acknowledgments
Table of Contents	Table of Contents
List of Tables	List of Tables
List of Figures	List of Figures
List of Plates	List of Plates
List of Abbreviations and Symbols	List of Abbreviations and Symbols
List of Appendices	List of Appendices
Thesis text	Thesis text
	<i>Introduction and overview</i>
	<i>Chapters (research papers)</i>
	<i>Summary</i>
Bibliography and References	Bibliography and References
Appendices	Appendices

Title Page

The title page contains the copyright notice as well as the information used to identify the thesis in library databases. The format should follow the example shown in SGS [Example Title Page](#). The date on the title page should indicate the month and year of graduation. In choosing a title, students should keep in mind that it is a valuable scholarly reference and will often be the only information that a prospective user of the thesis will have available. Care should be taken, therefore, to ensure that the title describes the contents of the thesis as accurately as possible and contains electronically searchable key words.

Abstract

The purpose of the abstract, which should not exceed 200 words for a Masters' thesis or 350 words for a Doctoral thesis, is to provide sufficient information to allow potential readers to decide on relevance of the thesis. Abstracts to be listed in Dissertation Abstracts International or Masters', Abstracts International should contain appropriate key words and phrases designed to assist electronic searches.

General Summary

The general summary is written for a general audience in clear, plain language. It should not exceed 150 words for a Masters' thesis or 350 words for a PhD thesis. The summary should be written using non-technical terms so that it can be clearly understood by someone outside of academia.

Co-authorship Statement

Research in some disciplines, particularly the sciences, is often collaborative and will necessarily involve contributions of several authors. It is expected that a thesis author will have made a major intellectual and practical contribution to all work that is reported in their thesis. Principal author status is normally required for use of research papers in a manuscript-format thesis. A clear statement describing the contribution made by the thesis author in each of the general research stages listed below is necessary to assist examiners in reviewing the thesis and, in the case of Doctoral dissertations, conducting the oral defence. The co-authorship statement should specifically address the contributions made by the student with respect to: i) design and identification of the research proposal; ii) practical aspects of the research; iii) data analysis; and iv) manuscript preparation.

Acknowledgments

Intellectual and practical assistance, advice, encouragement and sources of monetary support should be acknowledged. It is appropriate to acknowledge the prior publication of any material included in the thesis either in this section or in the introductory chapter of the thesis.

Table of Contents

A decimal system such as the one shown in SGS [sampleToC](#) should be followed. Each heading and subheading appearing in the table of contents must appear in the text of the thesis.

Lists of Tables, Figures, Plates, Abbreviations, Symbols, and Appendices

Lists of tables, figures, plates and abbreviations must follow the table of contents if tables, figures, plates and/or abbreviations are incorporated in the thesis. Each list should appear on a separate page with the appropriate page numbers (SGS [sampleListofTables](#)). It is advisable to use the decimal system (e.g., Figure 4.2 is the second figure in Chapter 4) if this system is followed for headings.

Thesis Text

Traditional Format

The body of text, which may appear as a series of chapters, describes the research as a whole and should be presented in a scholarly manner consistent with the accepted conventions of the discipline.

Manuscript Format

Introduction and Overview

The "Introduction and Overview" chapter provides a comprehensive review of the literature that establishes the student's familiarity with relevant work in the field; sets out the objectives of the thesis; places the research into the larger context of the candidate's discipline; and provides overall thematic cohesiveness of the chapters (research papers) to the reader.

Chapters (research papers)

Normally, only papers in which the candidate is considered to be the principal author can be used in a manuscript-format thesis. Each chapter should be prepared as a "stand alone" document describing published work or work prepared for publication. As such, each chapter requires an introduction, text body, and experimental/methodology (if applicable). The description of methodology should be sufficiently detailed so as to allow reproduction of the research by the reader. Original research data and results should be presented as appropriate. Figures and tables should be integrated into the text where appropriate. Chapters must be presented in consistent format throughout the thesis. The School of Graduate Studies recommends that each research paper chapter of a manuscript format thesis also contain its own co-authorship statement.

Summary

Theses written in manuscript format require a summary that unites the material presented in the chapters in a cohesive way.

References

Departmental and School of Graduate Studies' policies require a unified list of all work cited in the thesis. Methods of handling and listing references in the text vary and the author is permitted a certain freedom of choice. Students are advised to use a style appropriate for their discipline.

Appendices

Appendices are normally included to provide information that would detract from the readability of the main body of the text or to present data or information used in the thesis but not directly obtained by the thesis author. For example, lengthy tables, tabulated and reference data, detailed explanation of laboratory procedures, computer programs are typically included in the appendices.

Text Presentation

The general text of the thesis should be double-spaced in portrait format with single spacing used for footnotes or lengthy quotations. Triple or larger spacing may be used where necessary to set off headings, subheadings or illustrations. Font, font size, style of footnotes and references should be consistent. Times New Roman or similar font of size 12 is recommended for text. Smaller fonts may be used for footnotes, graphs etc., but must be easily readable without magnification. Any hard copies must be printed single-sided using laser print quality.

Margins

If a student plans to bind their thesis, margins of 3.8 cm (1.5 inches) on the left-hand side of the pages, 3 cm (1.25 inches) at the top and the bottom and 2.5 cm (1 inch) on the right-hand side are required. Otherwise, all margins should be 2.5 cm. These requirements also apply to tables and diagrams.

Pagination

Each page in a thesis must be identified by a distinct number for ease of reference. Material preceding the first page of the text (i.e., acknowledgments, table of contents, etc.) is to be numbered using lowercase Roman numerals, centered at the bottom of each page. The title page is considered to be page (i) but is not so indicated. Text for theses in traditional format must be numbered consecutively in Arabic numerals beginning with the first page of the text, i.e., Page 1 of Chapter 1. All figures, plates, tables, appendices, and similar material are numbered as pages of the text through to the end of the thesis. Chapters (research papers) in manuscript format may be numbered consecutively within the entire thesis or within each chapter but each page must have a unique reference. In the latter case the chapter and page number should be designated in Arabic numerals (e.g., 2-3 is Page 3 in Chapter 2).

Illustrations

Tables, figures, photographs, scanned images and other non-text material whether in black/white or colour should be legible, arranged neatly and effectively, and must always be referred to in the text. The title of a table should be placed above the table, and the title of a figure or plate should be positioned below the figure. In cases where this is impossible, the title and explanation of the figure or table may be placed on the reverse side of the immediately preceding blank page so that it faces the figure or table. The number of such a page must appear on the blank side in conformity with the placement of page numbers in the rest of the thesis.

If the thesis is bound, oversize maps, charts or diagrams must be folded so that they can be bound with the pages or, as is most common, inserted in a pocket fastened to the inside of the back cover and, if possible, media containing additional print or non-print material should be included in a pocket fastened to the inside of the back cover. Where not forming a complete page, non-text material should be properly formatted on a page.

M.SC. AND PH.D. THESIS SUBMISSION PROCEDURES

The procedures outlined below assume that all prescribed course work and comprehensive examinations have been satisfactorily completed and that the student has made an oral presentation of the results of their thesis in the departmental Graduate Student Seminar Series.

Submission of the thesis for examination

When the M.Sc. or Ph.D. student considers that their thesis is ready for submission, the approval of the student's supervisor(s) should normally be obtained (supervisory approval form – see below). However, in rare circumstances where there is significant disagreement between the student and supervisor(s), a thesis can be submitted without supervisory approval. Prior to submitting a thesis for examination, the student should contact the Graduate Secretary to ensure their coursework is complete.

When submitting a thesis for examination, the student must submit the following to the Head's Assistant (from whom all forms can be obtained):

- a single PDF version of their thesis sent by email or placed in accessible online storage such as Dropbox. The student may be asked to submit hard copies if requested by an examiner.
- one completed [Supervisory Approval Form](#)
- if necessary, a [Change Program form](#) (should there have been changes to the supervisor or supervisory committee, or required courses.)

Examination of Thesis - M.Sc.

Completion of the M.Sc. program involves an oral presentation within the Department of Earth Sciences, prior to submission of the thesis to the School of Graduate Studies for official examination. This 'exit seminar' is open to all, including the public. It is generally 20 minutes in length, followed by questions for about 10 minutes. The supervisory committee and at least one other faculty member will normally be in attendance. All comments and feedback from the audience will be considered to be non binding recommendations.

Before submission of the thesis for examination, the supervisor will submit to the Head's Assistant a completed [Appointment of Examiners form](#), which should include the names, addresses, telephone numbers, and email addresses of at least three potential examiners, and the reason for recommendation for external examiners. (More than one form may be required to list them all.) Examiners should be able to provide an objective assessment of the thesis – they should be knowledgeable of the subject matter / analytical methods involved, but should not be a collaborator on this study or be a member of the student's supervisory committee. The Department Head may add additional names to the list, but will normally choose two of the names proposed by the supervisor(s). The Head's Assistant then confirms the availability of the chosen examiners.

Once the examiners are approved, the thesis, Appointment of Examiners form(s) and Supervisory Approval Form (signed by the Head or Graduate Officer) are forwarded to SGS by the Head's Assistant. Examiners are requested to examine the thesis within four weeks of receipt and to return the examination report to the Dean of the School of Graduate Studies. Neither the student nor the supervisor will know the identity of the examiners.

The copies of the examined thesis and the examination reports will be returned to the School of Graduate Studies. The Dean of the School of Graduate Studies will copy the examination reports to the Graduate Officer and the student, together with a cover letter which will explain in general terms how the student is to respond to the comments of the examiners. The student should forward the reports to the supervisory committee.

Examination of the thesis will result in one of the following recommendations by each examiner. The thesis is:

- acceptable without modifications;
- acceptable - modifications are required but the thesis does not have to be re-examined²;
- unacceptable - the thesis requires modification and re-examination³;
- totally unacceptable - the thesis is failed.⁴

If all examiners recommend that the thesis is totally unacceptable, then the thesis will be failed, and shall not be re-examined. The student's program is terminated.

If an examiner recommends that the thesis is unacceptable, and this recommendation is accepted by the Dean, then the student may apply to the Dean for permission to resubmit the thesis for re-examination in one of the following ways:

- to submit a modified thesis to the original examiners.
- to submit a modified thesis to new examiners.

² Modifications may include corrections of typographical errors and errors in nomenclature, improvement in phrasing, or rewriting of sections of the thesis/report. Modifications may be indicated in the text or listed separately.

³ Modifications might include (but are not limited to) the rectification of one or more of the following deficiencies: (1) misinterpretation and/or misuse of the matter covered, omission of relevant materials, unfounded conclusions, illogical of argument(s), improper analysis of data and the like; (2) poor writing, grammar, and organization; (3) unacceptable physical presentation. A detailed list of problems should be included with the report.

⁴ A detailed list of the reason(s) for failure must be included in the report.

- ✦ to submit the original thesis to an Examination Board to be appointed by the Dean.

If a thesis is re-examined, the candidate will not be awarded a pass unless all examiners find the thesis acceptable.

Under no circumstances may a thesis be re-examined more than once.

When corrections have been made to the satisfaction of the supervisor(s) (and there is no requirement for a re-examination), the thesis is ready for final submission.

Examination of Thesis - Ph.D.

Examination of the Ph.D. thesis involves an oral defence. The supervisor will submit a list of potential examiners to the Head's Assistant. The list should include the names, addresses, telephone numbers, and email addresses of a minimum of four potential examiners (who can be internal or external, but normally include at least one internal) and the reason for recommendation for external examiners. Examiners should be able to provide an objective assessment of the thesis – they should be knowledgeable of the subject matter / analytical methods involved, but should not be a collaborator on this study or be a member of the student's supervisory committee. The Department Head may add additional names to the list, but will normally choose three of the names proposed by the supervisor(s). The Head's Assistant checks the availability of the chosen examiners and establishes a time and date for the oral defence.

Once the examiners are approved, the thesis, [Appointment of Examiners](#) form (including the defence date) and [Supervisory Approval Form](#) (signed by the Head or Graduate Officer) are forwarded to SGS by the Head's Assistant. Examiners are requested to examine the thesis within four weeks of receipt and to return the examination report to the Dean of the School of Graduate Studies.

The thesis is brought to the defence by the examiners and supervisor. The examination reports will be returned to the School of Graduate Studies. Once the Dean of the School of Graduate Studies receives the examination reports, and they are favourable, the Department Head is informed to proceed with the oral defence.

If one or more of the reports is unfavourable, the Dean may: (i) continue with the examination; or (ii) recommend that the student revise the thesis on the basis of the comments of the examiners and re-submit a revised version for evaluation and defence.

Examination regulations

The following is an excerpt from the University Calendar which describes the evaluation of the Ph.D. thesis.

Evaluation of Ph.D. Theses

Candidates for the degree of Doctor of Philosophy must submit a written dissertation deemed acceptable by the University, and demonstrate their ability to defend their work in a public oral examination. For this reason, the final decision on whether a candidate will be recommended for the award of the degree is made only at the conclusion of the oral examination.

Responsibilities of the Thesis Examining Board

The work of each candidate will be assessed by a Thesis Examining Board. Its first responsibility is to determine whether the thesis successfully demonstrates the candidate's competence to undertake independent research work. The Board must be satisfied that the work contributes significantly to knowledge in the field of study; that the contribution is of high scholarly merit; that the candidate is aware of the pertinent published literature; that it is written in a satisfactory style; and that it is free from typographical and other

mechanical errors. The second responsibility of the Board is to conduct a final oral examination of the candidate and to then recommend to the Dean of Graduate Studies whether the candidate should be awarded the Degree.

Composition of the Thesis Examining Board

The members of the Thesis Examining Board will be appointed by the Dean on the recommendation of the Head of the academic unit who will have consulted with the supervisory committee. The Board shall consist of four members. Normally these will be the candidate's Supervisor (who serves on the Board in a non-voting capacity), two examiners from within the University, and one from outside the University. However, when circumstances warrant, a second external examiner may be substituted for one of the internal examiners with permission of the Dean. Examiners shall normally be those who have completed a graduate degree at the doctoral level, including a thesis, in the discipline or cognate area. Members of the supervisory committee other than the Supervisor are ineligible for appointment to the Board. Those serving as examiners shall not have been involved in the preparation of the thesis/report.

The Examination Process

The voting members of the Board shall submit written reports on the thesis containing an assessment of the quality of the written work and a recommendation as to whether the candidate should be permitted to proceed to an oral examination and defence of the work. An examiner may recommend that the candidate:

- be allowed to proceed to the oral defence of the thesis*; or
- not be allowed to proceed to the oral defence at this time**; or
- should be failed.

*Any suggested corrections or revisions should be outlined in the examiner's report. It is understood that it will be the responsibility of the Supervisory Committee to discuss the suggested changes with the candidate, to determine which should be incorporated in the thesis before its final submission.

**This recommendation reflects the examiner's opinion that further research, re-analysis of data, or thorough rewriting of the material is required. The thesis may, however, be re-submitted for examination.

If all examiners recommend that the candidate should be failed, then the thesis shall not be re-examined.

If an examiner recommends that the candidate not be allowed to proceed to the oral defence, and this recommendation is accepted by the Dean, then the student may apply to the Dean for permission to resubmit the thesis for re-examination in one of the following ways:

- to submit a modified thesis to the original examiners; or
- to submit a modified thesis to new examiners; or
- to submit the original thesis to an Examination Board to be appointed by the Dean.

No candidate will be permitted to re-submit a thesis more than once. In case of a re-submitted thesis an examiner may recommend only that the candidate:

- be allowed to proceed to the oral defence of the thesis; or
- should be failed.

After receiving the reports from all three voting members of the Board the Dean will consider the recommendations and determine whether an oral defence of the thesis will be scheduled.

The Final Oral Examination and Defence of Thesis will take place at a time and place to be determined by the Dean of Graduate Studies and will be chaired by the Dean or their delegate. The presence of all members of the Examining Board is normally required.

Following the defence, the Board will meet in camera to render a final assessment of the thesis and the candidate's ability to defend their work. The Board may recommend one of the following outcomes:

- Passed*
- Passed Subject to Conditions**
- Re-examination required***
- Failed****

*This recommendation may have attached to it the requirement that the candidate complete certain specified revisions to the satisfaction of the Supervisory Committee, the Head of the academic unit and the Dean. These revisions must have been specified in the written appraisal submitted prior to the Oral Examination.

** This recommendation is made only if there are significant flaws in the candidate's work that come to light during the oral defence. Such flaws must be separate from, or in addition to, anything noted or specified in the written appraisals submitted prior to the oral defence. The flaws must also be of such importance that the main conclusions of the thesis are deemed invalid as a result of their existence. This recommendation must have the details attached and cannot include the option of re-examination.

***The members of the Thesis Examination Board may attach to this recommendation a list of any requirements which they feel are appropriate.

****Re-examination not permitted.

If the members of the Board are unanimous in their recommendation, the Chair of the Examination may accept this recommendation and inform the candidate of the decision. In any other case, however, the delivering of any final decision shall be deferred pending further consultation within the School of Graduate Studies.

No candidate shall be permitted more than two Oral Examinations.

Time Limit for Revision

The final version of Masters and Ph.D. theses found acceptable with or without corrections shall be submitted to the School of Graduate Studies within 6 months of the date on which the thesis and the student's examiners' reports are returned to the student's academic unit. If a corrected thesis is not submitted within 6 months the student is considered to have withdrawn from the program. After this time, the student must apply to be readmitted.

Masters and Ph.D. theses requiring re-examination shall be resubmitted to the School of Graduate Studies within 12 months of the date on which the thesis and the examiners' reports are returned to the student. Students requiring resubmission and re-examination of theses must maintain their registration during this period. Failure to resubmit the revised thesis within 12 months will result in termination of the student's program.

Prepublication

Publication of material before submission of the thesis for examination is permitted. The School of Graduate Studies and Supervisor should be informed of such publication.

Final Thesis Submission

When corrections have been made to the satisfaction of the supervisory committee (and there is no requirement for a re-examination), the thesis is ready for final submission.

For final submission, all graduate students are required to produce one electronic copy of their thesis to the Head of their academic unit.

- The final version of the thesis should be in PDF/A format (needed for the long-term archiving of electronic theses) and use the following naming convention: lastname_firstname_middlename_finalsubmissionyear_finalsubmissionmonthandyear_degree.pdf (e.g., Smith_John_James_122013_PhD.pdf).
- [Click here](#) for instructions on how to convert files to PDF/A format. For further help, you may wish to contact Memorial's [Digital Media Centre](#).
- The electronic copy of the thesis and any associated supplementary files should be submitted to the Department Head .

The thesis along with the completed [Recommendation for the Award of a Graduate Degree form](#) should be submitted to the Head or Graduate Officer. As of the date of the Head's or Graduate Officer's signature on this form, the student has completed their M.Sc. or Ph.D. study and is no longer a graduate student at Memorial University of Newfoundland.

Additional Thesis Copies

The School of Graduate Studies no longer accepts personal copies of theses for binding. Students who wish to have bound personal copies of their thesis are asked to contact Lehmann Bookbinding directly, the company which also binds theses for Memorial.

Lehmann Bookbinding
97 Ardelt Avenue
Kitchener, ON N2C 2E1
www.lehmannbookbinding.com

Important Notes

- I. For M.Sc. students, the submission and examination process may take 2-6 months, depending mainly on the amount of work involved with completion of the required corrections.

For Ph.D. students, the submission and examination process may take 2-7 months, depending mainly on the amount of work involved with completion of the required corrections (an additional month might be required to allow for scheduling of the oral defence).
- II. Each semester there are specific dates for submission of a thesis for examination, and final submission of a thesis, which relate to both tuition fees and convocation.
 - The final date for submission of theses for examination, by candidates who expect to receive their degree at the:
 - Spring Convocation is: mid-January (see [University Diary](#))
 - Fall Convocation is: mid-June (see [University Diary](#))
 - theses received after these dates will be processed as time and resources permit
 - The final date for Departments to submit the Recommendation for Award of Degree form in order for graduate students to be deregistered from Graduate Registration 9000 without incurring any liability for continuance fees is:
 - Fall semester – end of September (see [University Diary](#))
 - Winter semester – end of January (see [University Diary](#))
 - Spring semester – end of May (see [University Diary](#))

- The final date for Departments to submit the *Recommendation for Award of Degree* form for candidates who expect to receive their degree at either the Spring or Fall convocation is:
 - a minimum of three weeks prior to the first date of the convocation ceremonies if the student wishes their name to appear in the convocation program
 - a minimum of two weeks prior to the first date of the convocation ceremonies, but the student's name will not appear in the convocation program
- III. The student must [apply](#) to graduate through Memorial Self-Service. This can be done before the thesis submission process is started, and must be done by January 15 for Spring Convocation and July 15 for Fall Convocation. A student cannot graduate if they have not applied to do so, even if they have completed all the other thesis submission procedures!
- IV. Students are not permitted to graduate if they have outstanding tuition or other fees owing or if they have outstanding books due back to any Memorial library.
- V. Students must maintain their graduate registration until all academic requirements for the degree including thesis corrections have been met.

LEAVES OF ABSENCE

The text below is excerpted from the Memorial University Calendar, Section [4.3.6.1](#). Additional information and the SGS form to request a leave of absence, are available from [LOA](#).

General

- I. A leave of absence is a period of time during which a student is not required to register; no fees are assessed; and the time granted is not counted in the maximum time period permitted for a graduate program.
- II. In the event that circumstances prevent a student from pursuing their program, the student may apply to the Dean of Graduate Studies for a leave of absence.
- III. A student may normally apply for only one leave of absence during their program. The maximum leave of absence shall normally not exceed 12 months.
- IV. An application for leave will normally be made before the end of the registration period in the first semester for which leave is requested. Requests received after the end of the regular registration period, and approved, will be charged an administration fee as indicated at the Financial and Administrative Services website at www.mun.ca/finance/fees/.

Parental

A student may apply for a leave of absence in the case of pregnancy/birth/adoption of a child. Such leave will be considered separately from III. above.

TRANSFER FROM AN M.SC. PROGRAM INTO A PH.D. PROGRAM

- I. Students must notify the Department Head in writing of their wish to transfer into the Ph.D. program and of the rationale for their decision. This request will normally be made no earlier than the start of the second year of a M.Sc. program. (Note that time already spent in the M.Sc. program is counted as part of the seven years available for completion of the Ph.D. program. Fellowship funding will not be given for more than a total of five years.)

- II. This application must be accompanied by a letter from a faculty member recommending the transfer and agreeing to supervise and fund the Ph.D. program. This faculty member will normally be the M.Sc. supervisor. In the unusual circumstance where this is not the case, the Head will request a letter from the current M.Sc. supervisor stating their opinion of the transfer request. A new supervisor must agree to assume all future supervisory responsibility, including financial responsibility, from the time of the transfer application.
- III. In addition to the supervisor, a Ph.D. supervisory committee must be selected. This will normally consist of the M.Sc. supervisory committee with the addition of another member if required to make up the minimum requirement of 3 members for a Ph.D. supervisory committee. The unanimous support of this supervisory committee will need to be confirmed in the letter of recommendation for transfer.
- IV. Provided that the conditions above are met, the transfer will be approved and the student will commence the Ph. D. program, as per SGS regulations, with the same requirements for courses and comprehensive examination as a student accepted directly into the PhD program. Courses completed before the transfer is approved may be counted toward course requirements for the Ph.D. program, if this has the full support of the supervisory committee or the approval of the Head of Department.

VOLUNTARY WITHDRAWAL FROM A DEGREE PROGRAM

University regulations, [clause 4.3.2](#) require that a student intending to withdraw from a graduate degree program notify the Dean of Graduate Studies in writing or e-mail. It is not sufficient to only notify the project supervisor, it is the student's responsibility to inform the Dean of Graduate Studies directly. A student who does not inform the Dean of Graduate Studies will continue to incur tuition and related fees each semester until such a time as a letter of withdrawal is received by the Dean.

TERMINATION OF A DEGREE PROGRAM

The text below is excerpted from the Memorial University Calendar, Section [4.13](#). The complete regulations can be found online.

Grounds for termination of a Graduate Program are as follows:

- I. Failure to obtain the required grades in courses as stated in the appropriate Degree regulations (see [Evaluation](#));
- II. For Ph.D. students, failure in comprehensive examinations (see [Comprehensive Examinations](#));
- III. Recommendation of the Supervisory Committee (see [Supervision](#));
- IV. Failure of Thesis (see [Theses and Reports](#));
- V. Failure to register in any semester by the final date for adding courses (see [Registration, Program Registration](#));
- VI. Lack of progress in a program;
- VII. Failure to comply with the conditions of admission into a program, unless the conditions of admission have been changed with approval of the academic unit and the School of Graduate Studies; or
- VIII. Academic misconduct as outlined under General Regulation [Academic Behaviour](#) governing the School of Graduate Studies.

GRADUATE COURSES IN EARTH SCIENCES

In the Department of Earth Sciences, graduate course instruction is considered to be part of the duties of a supervisor for their own graduate students. Thus, except at the discretion of the Head of Department, graduate courses in Earth Sciences are not offered on a regular basis. Graduate students should consult with their supervisory committee to determine the courses that will be required to complete their graduate program. Courses required by your supervisory committee (i.e. program courses) are included in the tuition for your program. Tuition must be paid for courses not required by your supervisory committee.

As per university regulation, all course requirements should normally be completed within one year from the date of first registration in the degree program.

Failure to attain a final passing grade of A or B in a program course shall lead to termination of a student's program. For full regulations regarding evaluation visit the following webpage, [clause 4.7](#).

While this is not an exclusive list, offered courses have included:

- 6040 Igneous Petrogenesis
- 6070 Quantitative Techniques in Mineralogy and Metamorphic Petrology
- 6105 Advanced Field Course in Applied Geophysics
- 6110 Machine Learning and Data Analysis in the Geosciences
- 6120 Kinematic Modelling of Plate Tectonics
- 6152 Paleomagnetism
- 6171 Advanced Exploration Seismology
- 6172 Borehole Seismic
- 6175 Gravity and Magnetic Methods
- 6210 Genesis of Mineral Deposits
- 6320 Marine Geology
- 6500 Stable Isotope Geochemistry
- 6510 Trace Element Geochemistry
- 6550 Biogeochemistry
- 6740 Modern and Ancient Sedimentary Environments
- 6750 Sequence Stratigraphy
- 6801 Paleobiology of Early Animal Life
- 6820 Palynology and Paleobotany
- 6905 Field Studies in Reservoir Sedimentology & Stratigraphy
- 6911 Mathematical Formulations of Seismic Wave Phenomena
- 6913 Geometrical Methods in Mathematical Physics
- 6916 Seismic Ray Theory
- 6918 Airborne / Borehole Electrical Methods
- 6921 Wave Equation Modeling, Processing & Inversion Algorithms
- 6930 Seafloor Hydrothermal Processes
- 6942 Tectonics and Crustal Evolution
- 6943 Field Studies in Orogenic Belts
- 6971 Siliclastic Rocks: From Sediment Source to Reservoir
- 6972 Diagenesis, Evolution, & Porosity Development in Carbonate Reservoirs
- 6973 Application of Stable Isotopes in Carbonate Diagenesis and Paleoenvironment
- 6985 Ichnology as a Tool for Earth Scientists
- 6991 Special Topics: Advanced Seismology
- 6992 Elastic Properties of Rocks
- 6993 Advanced Geophysical Methods
- 6994 Geophysical Inversion and Application
- 7120 Crustal Geophysics
- 7400 Tectonic Regimes

THE STUDENT-SUPERVISOR RELATIONSHIP

SUPERVISOR AND SUPERVISORY COMMITTEE

M.Sc. Candidates

Each M.Sc. student will have a multi-member supervisory committee. This committee shall consist of the Supervisor and at least one other member. Within two weeks of the first registration in the M.Sc. Degree program, a candidate will meet with their supervisory committee.

Ph.D. Candidates

In accordance with University Calendar, section [4.9.2](#), each Ph.D. candidate will have a supervisor and a supervisory committee appointed by the Dean of the School of Graduate Studies, on the recommendation of the Head. The Supervisory Committee shall consist of the Supervisor (co-supervisors) who shall act as Chair, and normally at least two other members. In no circumstances may the Committee membership be fewer than two members.

The role of the Supervisor and the Supervisory Committee will be as follows:

- to decide, jointly with candidate, the program of study, the subject of research, and the working title of the thesis, and to recommend these for approval to the Dean of the School of Graduate Studies;
- to monitor the candidate's progress in their course programs and research;
- to report at least annually to the Dean on the candidate's progress and, at the same time, to advise on their continuation in the program; and to make such other reports and recommendations about the candidates to the Dean as it may deem necessary.
- to recommend to the Dean, after consultation with the candidate, necessary changes in the program of study, the subject of research, or the title of the thesis;
- in the case of PhD students, to recommend to the Head the timing of the comprehensive examination;
- to report to the Dean that the thesis is ready for examination by completing a Supervisor Approval Form, which is to accompany the thesis upon its submission to the School of Graduate Studies;
- to recommend to the Dean suitable persons to act as members of the Thesis Examining Board.

Responsibilities of supervisor and student

Please see the document "[Responsibilities of Supervisors and Graduate Students](#)" which highlights the responsibilities of the supervisor and student as determined by the School of Graduate Studies.

Annual Supervisory Reports

The University Calendar, section [4.9.3.](#), states that a Graduate Student Annual Progress and Supervisory Report form must be submitted to the School of Graduate Studies on an annual basis. Recommendations concerning continuation, amendment, or termination of a candidate's program, are sent to the Dean, who shall take appropriate action. Students shall be advised of the contents of this evaluation and the subsequent recommendation(s).

DEPARTMENTAL GUIDELINES ON THE STUDENT–SUPERVISOR RELATIONSHIP

Working relationship between graduate student and supervisor(s)

Although it may not be immediately apparent to new graduate students, the relationship between a graduate student and their supervisor(s) is very different to that of an undergraduate student and a professor. In the former case, the professor generally has no special interest in the outcome of an individual undergraduate student in their course, whereas in the latter case the supervisor has a vested interest in the completion of the research project of their graduate student, typically manifested in the outlay of time, research funds, and intellectual property. Completed research represents a 'currency' in universities and research institutions, its timely communication and publication in conference abstracts, research journals, contract reports etc. being a tangible demonstration of the quantity and quality of the research carried out by the particular research group, and hence instrumental in the procurement of future funding and continuation of research activities.

Thus, when an agreement is reached between a prospective graduate student and supervisor, there are expectations on both sides that should be recognized and preferably explicitly discussed in advance of acceptance into the graduate program. From the graduate student's perspective, there will be financial expectations, including adequate funding, appropriate funding for field and/or laboratory work, funds to attend conferences etc., and expectations concerning the academic role of the supervisor, such as that the supervisor will make themselves available to assist with the design of the research project, answer questions and/or aid in the resolution of ongoing problems or difficulties with the research, and make comments on drafts of the thesis or interim reports etc. in a timely manner.

From the supervisor's perspective there will be an expectation that the graduate student will commit to the project and see it through to completion in a timely manner so that it generates some research currency for their research group. This is not to say that the original research project cannot be changed after it has been initiated, rather that the supervisor has a reasonable right to expect some return on their investment. Given the form and function of the supervisory committee structure in this Department, the chance of a graduate student undertaking a non-viable research project should be an extremely rare occurrence, and hence failure to complete the project represents a waste of resources from the supervisor's perspective.

'Contractual' Agreement, Monitoring Progress, Dealing with Problems

The working relationship between a graduate student and their supervisor is thus a kind of contractual agreement with expectations on both sides. However, it is not formally constructed as a written document given the wide range of working relationships possible between graduate students and their supervisors. The progress of the student is evaluated on at least an annual basis. In the Department of Earth Sciences, the Annual Progress and Supervisory Report Form is designed to ensure that both graduate student and supervisor understand each other's views concerning the quality and quantity of progress up to that date. However, if a graduate student feels that progress is not adequate at any time, the student should not wait for the annual completion of the form before acting. GRADUATE STUDENTS HAVE THE RIGHT TO CALL A MEETING OF THEIR SUPERVISORY COMMITTEE AT ANY TIME. In other situations, if a graduate student feels that they are unable to get appropriate help from their supervisor, or is unable to meet and/or communicate with them, the first recourse should be to discuss the problem with other members of the supervisory committee, and perhaps subsequently to call a meeting of the supervisory committee as a whole. Ultimately, if the problem persists and cannot be resolved within the supervisory committee, then the graduate student should contact the Head or Graduate Officer to mediate the problem. In extreme situations, graduate students have the right to seek an alternative supervisor if they feel that they are unable to work with their original choice. Such a course of action is rare and there is no obligation on other faculty members to take on the graduate students of others.

Equally, the supervisor has a reasonable expectation that the graduate student will make timely progress on the research project and complete it within the period for which funding is allocated. If the supervisor feels that the graduate student is not making adequate progress, an appropriate first step is to set up regular meetings to monitor progress and to make suggestions as to how the work can be accelerated. Supervisors recognize that each graduate student learns at a different rate, that different degrees of supervision are required, and that

there is always a learning curve to be negotiated when carrying out new techniques, but they will also have expectations about how long the research should take given an appropriate level of commitment and have a right to expect reasonable progress in the absence of impediments.

Time on Campus, Vacation Days, Sick Leave

Being a graduate student is a full-time job unless the student is enrolled part-time (see 3.4.8 of the regulations of the School of Graduate Studies for definitions). As such, there is an expectation that the student will be working in their office/lab/in the field etc. during (flexible) normal working hours. However, there is no requirement to punch a time clock, and 'normal working hours' is loosely defined. There is considerable freedom concerning when and where work is carried out, but this does not include the freedom not to work. A supervisor has the expectation that a full-time student works full time on their program.

Common practice at Memorial allows that students may take three weeks (i.e., 21 working days) vacation each year, although there are no formal guidelines. While supervisors do not normally count the days, supervisors have a right to expect that a student will not go away for extended periods of time without contacting them. If a graduate student becomes sick and is unable to work on their program for more than a few days, the supervisor should be notified. The student may be asked to account for absence with a doctor's note.

Summer Employment, Leave Of Absence, Part-Time Status

If a graduate student wants to take summer employment during the course of their graduate studies, the student should discuss this with their supervisor. The School of Graduate Studies does not normally condone summer employment unless it is a formal part of a student's program. However, in Earth Sciences, summer student employment in the geological survey or relevant mining and petroleum industries is relatively common. The supervisor will probably have mixed feelings about the idea, because it generally results in prolonging the time taken to complete the thesis (see contractual obligations above), but at the same time the supervisor will also recognize the potential benefits of outside work experience in enhancing the employment prospects of the graduate student. If after weighing the options the graduate student makes the decision to take summer employment of more than 24 hours a week, a Change of Status form must be submitted to the School of Graduate Studies and the department will stop their funding for the period that the student is employed elsewhere. There are two options to be considered (see below)

Leave of Absence

The graduate student makes a request to the School of Graduate Studies for a leave of absence, generally for a period of 4-12 months (one, two or three semesters), and this is not generally denied. In this case, the graduate student stipend is stopped during the time the student is employed off campus and, subject to supervisory approval, is restarted once the student returns as a full-time student. Assuming supervisory approval, there is no time penalty and the remainder of the fellowship becomes available to the graduate student following their return. The School of Graduate Studies normally allows a graduate student to take only one leave of absence during the course of their degree.

Change Of Status To A Part-Time Student

As in the former case, the graduate student makes a request to the School of Graduate Studies for a change of status, and this is not normally denied. The graduate student stipend is stopped for the period of the part-time status, but in this case the clock does not stop, tuition is still charged at the full-time rate, and all time spent as a part-time student counts towards the time spent in the degree program.

Duration of funding and time taken for completion of thesis

Fellowship funding from the School of Graduate Studies / supervisor / other funding source is for two years for the M.Sc. and four years for the Ph.D. Funding from the School of Graduate Studies does not normally extend beyond these limits. Supervisors are at liberty to continue funding their graduate students for longer periods, however, graduate students should be aware that supervisors may not be able or willing to commit to the same level of funding as in the first two / four years of the research project respectively, and generally will want firm assurances that the graduate student is making appropriate progress towards completion and final submission of the thesis before committing to additional salary funding.

The School of Graduate Studies has specified the time limitation on M.Sc. and Ph.D. programs as 7 years. This means that theses must be submitted within 7 years of enrolment in the program, unless there are special mitigating circumstances, which are evaluated by the School of Graduate Studies on an individual basis.

GRADUATE FELLOWSHIPS, ASSISTANTSHIPS, SCHOLARSHIPS AND AWARDS

Graduate students commonly receive financial support from the Department and University in the form of fellowships, assistantships, scholarships, and awards.

A number of teaching assistantships (TAs) are available to students for contributing to instruction of undergraduate classes during the fall and winter semesters (see 'Teaching Assistantships' below).

Various types of awards are available to graduate students of Memorial University of Newfoundland. Included are scholarships, fellowships, awards, prizes and medals.

- A *scholarship* is based on academic performance and is awarded to the student with the highest average meeting the conditions of the scholarship.
- A *fellowship* is funding from the School of Graduate Studies, which may be supplemented by funding from your supervisor and a Teaching Assistantship. In order to be eligible for SGS funding, graduate students must have an average of 75% in their undergraduate and graduate courses (or a GPA of 2.75), or equivalent (for details see Student Eligibility Criteria below).
- An *award* is offered to recognize special achievements or to assist with special projects or travel. Awards may be given to students with a minimum of clear standing (as defined by the University) and meet all the other conditions of the award.

Some scholarships and awards may be held for more than one year, but are renewable only if the student maintains scholarship standing.

For the majority of the scholarships and awards, students are required to be engaged full-time on their graduate research when they hold the award. However, there are some awards available to part-time students. Students should confirm their eligibility by checking the award description or with School of Graduate Studies before submitting an application.

GRADUATE FELLOWSHIPS AND ASSISTANTSHIPS

Baseline Fellowships and Graduate Student Support play a vital role in recruiting and retaining graduate students at Memorial. Baseline Fellowships are also fundamental support for new graduate program development as well as new program credibility and competitiveness. Baseline Fellowships are often a graduate student's sole source of financial support. Further, Baseline Fellowships provide important financial leverage for faculty applying for and being successful in Tri-Council agency funding competitions.

General principles

- I. SGS funds for the awarding of SGS Baseline Fellowships will be allocated to academic units by the Dean of Graduate Studies on a fiscal-year (April 1-March 31) basis for the support of their graduate students according to the following guidelines.
- II. SGS Baseline Fellowships are intended to form the foundation of graduate student support, a foundation that academic units should make every effort to supplement through Graduate Assistantships, external and/or internal grant applications, and/or supervisor grant or contract support.
- III. Recommendations for awarding SGS Baseline Fellowships must be forwarded to the School of Graduate Studies for approval and disbursement according to the criteria and procedures below.

Student Eligibility Criteria

- I. Students entering their programs must be registered as full time in a baseline supported Masters or PhD program and hold a valid Canadian study permit.⁵
- II. Students entering their programs must normally have and maintain an overall MUN, or equivalent, average of 75%. An overall MUN, or equivalent, average of 75% is determined by using either the last 20 attempted courses for which grades are available, or by using all courses attempted for which grades are available excluding those in the first year of an undergraduate program.
- III. If departments wish to allocate SGS Baseline Fellowships to students who are not already on baseline funding and who are in-program, those students must normally have successfully completed at least one full semester of graduate studies and achieved a mark of at least 75% in each program course attempted or an overall average of at least 80% for all program courses attempted. Where the number of program courses is less than two, then the requirement is evidence of academic standing acceptable to the Dean.
- IV. Masters students must be in the first 24 program-months of their programs, excluding any leave periods.
- V. PhD students must be within the first 48 program-months, excluding any leave periods.
- VI. PhD students who transfer from a Masters program must be within the first 60 program-months of their entire graduate registration at Memorial, excluding any leave period.
- VII. In exceptional cases, an academic unit may recommend an extension of SGS Baseline Fellowship eligibility for one additional semester beyond the periods outlined in IV and V above.
- VIII. A student who is the recipient of a major scholarship or award, and as a result is ineligible for a SGS Fellowship under IX below, may be recommended in exceptional circumstances for a SGS Fellowship for one semester beyond the periods outlined in IV and V above.
- IX. SGS Baseline Fellowships may not be awarded to Masters students receiving in excess of \$35,000 pa from all sources in a program year, excluding graduate assistantships. SGS Baseline Fellowships may not be awarded to PhD students receiving in excess of \$50,000 pa from all sources in a program year, excluding graduate assistantships.

⁵ A full-time graduate student cannot commit more than 24 hours per week to employment. Any changes in a student's registration status will normally be made for a minimum of one semester. Normally, only one such change in status will be permitted in any one semester.

Procedures for awarding SGS Baseline Fellowships (for students meeting eligibility)

- I. SGS Baseline Fellowships will normally be offered at the time of admission for a one-year period. Details should be specified in the "Program of Study" form. If the admission is deferred, the SGS Fellowship may, on the recommendation of the academic unit, be deferred for a maximum of three semesters.
- II. SGS Baseline Fellowships are renewable subject to the eligibility criteria (preceding Section) and satisfactory annual progress reports. SGS Baseline Fellowships will normally be renewed at a value which is at least equal to that received in the offer of admission.
- III. On commencement of a semester, academic units may recommend allocation of uncommitted or previously committed SGS baseline funds that become available to:
 - applicants, newly admitted students, or in-program students who were not offered SGS Baseline Fellowship support;
 - in-program students who did not meet eligibility criteria on admission but are being reconsidered on the basis of improved performance as in Student Eligibility Criteria, point III ; or,
 - increase SGS Baseline Fellowship support to in-program students. Normally, such allocations will not be retroactive and will be in effect for the remainder of the student's eligible funding period, subject to renewal as in Student Eligibility Criteria, points IV and V.
- IV. Students receiving SGS Fellowships who transfer from a Masters program to a PhD program shall receive the standard baseline amount awarded to PhD students currently in place in the student's academic unit of record.⁶ These funds are normally not retroactive, but are available at the beginning of the semester in which the student transferred. The cost will be attributed to the academic unit's SGS baseline.

Administration of graduate student support (regardless of source)

- I. Graduate student support is paid bi-weekly. Academic units are responsible for initiating payments to students (including renewals) by submission of a Graduate Student Support Payroll form. It is also the responsibility of the academic unit to stop payments to students by means of the same form (e.g., program completed, leave of absence, academic standing, etc.).
- II. Recommendations for adjustments to the level or source(s) of bi-weekly funding received by any student must be submitted to the School of Graduate Studies prior to the beginning of the semester in which these changes will take effect. Changes in SGS Baseline Fellowship amounts will normally remain in effect for the remainder of the student's eligibility period.
- III. Lump sum payments from sources other than the SGS Baseline Fellowship allocation may be made at any time, but will result in an adjustment of SGS Baseline Fellowship amounts for the program year if limitations in Student Eligibility Criteria point IX are exceeded.

Teaching Assistantships (TAs)

A number of teaching assistantships (TAs) are available to students for contributing to instruction of undergraduate classes during the fall and winter semesters. This financial support is considered supplemental to other forms of financial support. Teaching assistantships involve contributing 60 hours of work toward class instruction, normally over a 14 week period within a semester, as agreed contractually between the course instructor and teaching assistant.

⁶ Every attempt should be made to minimize the financial impact to the student.

Interested students should consult the Earth Sciences First Year Laboratory Instructor for additional information on TAs. The student's supervisor must submit the student's name to the Graduate Officer when a call for TA applications is sent out to the faculty. This call generally occurs in the winter semester. The TAs are then taken up in the following academic year.

Graduate Assistantships (GAs)

Graduate Assistantships are supported by the School of Graduate Studies. Within the Earth Sciences Department, all GAs are in the form of teaching assistantships (TAs, see above). Some GAs external to the department, open to all graduate students at Memorial University, are advertised on the Graduate Assistantships [website](#). GAs, like TAs, are governed by the [Teaching Assistants' Union of Memorial University of Newfoundland \(TAUMUN\) Collective Agreement](#).

Research Assistantships (RAs)

On occasion, faculty may hire a graduate student to carry out research outside their thesis project, paid from the faculty member's research grant. The student submits time sheets to the Department to record their work hours, which are limited to 24 hours per week.

Special Fellowships

In addition to fellowships offered through the Department of Earth Sciences, the School of Graduate Studies holds a university-wide competition for the *School of Graduate Studies F.A. Aldrich Fellowships*.

School of Graduate Studies F.A. Aldrich Fellowships

Six to eight fellowships valued at \$20,000 per annum at the doctoral level and \$15,000 at the master's level will be awarded to incoming full-time Canadian students. Renewal for one year at the doctoral level is possible. These fellowships were established to celebrate the 25th Anniversary of the School of Graduate Studies in 1999 from a portion of the proceeds of the Opportunity Fund and in honour of Memorial's first Dean of the School of Graduate Studies, Dr. F.A. Aldrich (1970-1987). Recipients will be selected by the Dean of the School of Graduate Studies, on the recommendation of the Awards and Medals Committee, on the basis of exceptional academic achievement.

Full-time status and fellowship eligibility

Fellowships are only awarded to full-time students. To maintain full-time status as a graduate student at Memorial and thereby maintain eligibility for a fellowship, a graduate student cannot be employed for more than 24 hours of work per week from all employment sources. In the case of a leave of absence, fellowship funding stops effective from the date the leave was granted. If the leave of absence is granted retroactively, and includes time when the graduate student was receiving fellowship funding, the graduate student may be required to repay this money. If a graduate student receiving University support wishes to transfer to part-time status, funding is stopped.

The fellowships are for student support with respect to tuition, fees, books and living expenses. A student is not expected to pay for the cost of research from their fellowship as research costs are normally paid by their supervisor.

For information regarding fellowships:

Ms. Katrina Arbuckle, CBAD
Fellowships Officer
School of Graduate Studies

Telephone: (709) 864-2441
Fax: (709) 864-3421
Email: karbuckle@mun.ca

GRADUATE SCHOLARSHIPS AND AWARDS

The different kinds of scholarships and awards are listed on the School of Graduate Studies [scholarship website](#). To be considered for these scholarships and awards requires either student application or departmental nomination. School of Graduate Studies also administers a few external awards - the School is responsible for processing the applications but the awarding of the scholarships originates from an external agency. There are also general travel grants available to all graduate students, one grant per degree. Each of these is described in detail below.

Graduate Scholarships Available Exclusively to Earth Science Students

There are several scholarships that are available for students enrolled in graduate programs in the Department of Earth Sciences. Many of these scholarships are awarded solely on the basis of academic performance or standing, whereas others also take financial need into account. Please see the list of scholarships below for limitations and eligibility. In the Fall semester of each year, the Scholarships and Awards Committee in the Department of Earth Sciences develops a list of all students who meet the University's scholarship standing requirements and provides the Head with a list of recommendations for awards. [Note: Graduate students do not need to apply for the scholarships and bursaries listed in this section. All students in the program will be considered for awards for which they are eligible, and the awards will be made on basis of the specified criteria]. On receiving the list from the Scholarships Committee, the Head makes any changes they see fit before communicating it to the Scholarships Officer in the School of Graduate Studies for final approval by the Dean. Please note that, because the number of scholarships is limited, not all students who meet the eligibility requirements may receive an award. Some awards may be held for more than one year, but are renewable only if the student maintains scholarship standing. Awards are usually disbursed in one instalment. All funds awarded through the Scholarships and awards program are in addition to other funding unless they exceed mandated funding caps.

The Department holds an annual Scholarships and Awards reception in the Winter semester. Representatives of the donors present the scholarships to the winners. In actual fact, the student will have received the cheque from the university long before this. In addition external scholarships received by our students are noted, and presented. This reception covers both undergraduate and graduate awards.

Buchans Scholarship Fund of ASARCO Incorporated

ASARCO Incorporated has established a scholarship fund, the annual interest on which will provide for students enrolled in the Department of Earth Sciences, Memorial University of Newfoundland, either a scholarship for post-graduate study and research, valued at \$5,000; or two scholarships for undergraduate study, valued at \$500 each. The latter scholarships will be available only when no suitable candidate can be found for the former. In order to qualify for these awards, students must be native-born Newfoundlanders or graduates of Newfoundland high schools. In the case of the graduate scholarship, the award will be made by the Dean of Graduate Studies on the recommendation of the Head, Department of Earth Sciences; in the case of the undergraduate scholarships, by the Senate Committee on Scholarships and Financial Aid on the recommendation of the Head, Department of Earth Sciences. Should no candidates be available in any year, the awards may be held over.

Chevron Canada Limited Rising Star Awards

This award has been established through a generous donation from Chevron Canada Limited. Six awards valued at \$15,000 per year, (may be renewed for a second year upon application) will be awarded annually to full-time graduate students who are enrolled in a Masters or Doctoral program in the areas of Earth Sciences, Engineering and Applied Science, Economics and Business. 80% of these awards will be given to students in the Department of Earth Sciences. The awards will be awarded on the basis of academic merit, demonstration of a strong potential to carry out meaningful research, expression of interest in potential employment in the oil and gas industry and signalling of career location mobility; level of service to community or leadership will also be considered.

The Hugh Lilly Memorial Scholarship

This scholarship, presently valued at a minimum of \$3,000 per annum, will be awarded to the most promising graduate in the Geosciences at Memorial University of Newfoundland who is continuing studies at the post-graduate level either at Memorial University of Newfoundland or elsewhere. The award honours the memory of the late Hugh Lilly, an instructor in the Earth Sciences Department. Selection of the winning candidate will rest with the Senate Committee on Undergraduate Scholarships and Financial Aid in consultation with the Earth Sciences Department.

Dr. Alfred K. Snelgrove Graduate Scholarship in Earth Sciences

A bequest from Dr. Alfred K. Snelgrove makes possible up to two scholarships, valued at \$5,000 per annum, for students applying for or enrolled in a graduate program in the Department of Earth Sciences. These scholarships are intended primarily for Canadian citizens or landed immigrants, and are awarded by the Dean of Graduate Studies on the recommendation of the Head of the Department of Earth Sciences. The scholarships are tenable for one year, and may be renewed. They may be held in addition to other scholarships and fellowships, and will be awarded only to applicants whose academic excellence and research potential can be clearly demonstrated.

The Association of Professional Engineers and Geoscientists Past President's Geoscience Scholarship

This scholarship valued at a minimum of \$1,000 was established by the Association of Professional Engineers and Geoscientists of Newfoundland. It is awarded annually on the basis of scholarship standing to a Geoscience student at Memorial University of Newfoundland. It is open to either graduate or undergraduate students in any given year and will be allocated as such at the discretion of the Department Head. In the case of undergraduates, the scholarship is awarded by the Senate Committee on Undergraduate Scholarships and Financial Aid upon the recommendation of the Head, Department of Earth Sciences in consultation with APEGN. In the case of graduates it is awarded by the Dean of Graduate Studies upon recommendation of the Head, Department of Earth Sciences, in consultation with APEGN.

Other Internal Scholarships and Awards

The following awards are administered by the School of Graduate Studies and are based on nominations from the individual academic units. Please visit their website for more [internal scholarships and deadlines](#).

The LGL Limited Scholarship in Marine Science

This scholarship, valued at \$1,000, was established by LGL Limited. It will be awarded annually to a student in the Faculty of Science who is following a program of studies related to Marine Science. The successful candidate will be either a fourth year undergraduate student doing an honours program or a graduate student. Wherever possible, preference will be given to a student from a fishing family, but other students will be considered. In the case of undergraduate students the scholarship will be awarded by the Senate Committee

on Undergraduate Scholarships and Financial Aid on the basis of scholarship standing. In the case of graduate students the scholarship will be awarded by the Dean, School of Graduate Studies.

TD Graduate Bursary for Environmental Study

This bursary program was established by a gift from TD Bank Group to Dare To: The Campaign for Memorial University. The value of the bursaries will be determined by the number of bursaries that are awarded. The TD Graduate Bursary for Environmental Study will be awarded to full-time graduate students enrolled in any program of study at Memorial University of Newfoundland, provided they are pursuing research and/or study in environmental-related subjects. Candidates must meet the academic criteria for a bursary.

Fellow of the School of Graduate Studies

The title of Fellow of the School of Graduate Studies is awarded in recognition of outstanding academic achievement throughout a graduate program. It may be awarded only once, during the last year of a student's graduate program. This distinction will be noted on the student's Memorial University transcript. Nominations must be submitted to the Dean of Graduate Studies by the heads of academic units at least one month prior to Convocation, i.e. April and September.

Nominees for the title of Fellow of the School of Graduate Studies must have:

- Maintained a high academic standing, defined as an 'A' grade in each graduate program course or an 85 overall average in graduate program courses taken at Memorial University⁷ and graduate program courses which have been transferred from inter-institutional collaborative programs.
- Demonstrated performance of special merit in the graduate program. Factors which may be considered include, but are not limited to, the following:
 - an active and successful research program;
 - publications, presentations or patents;
 - honours, awards or scholarships; or
 - other factors deemed relevant by the head of the academic unit.

The following internal awards are administered by the School of Graduate Studies. These awards require the submission of an application for each award. Please visit their website for [more internal awards](#) to which you must apply.

F. A. Aldrich Graduate Award

The F.A. Aldrich Graduate Award has been established in memory of the first Dean of Graduate Studies at Memorial University. Up to three annual awards of \$2,000 may be made. Awards will be made by the Dean of Graduate Studies to alumni of Memorial who are in the first year of a full-time graduate program at the time of application and will be based on academic merit, and need only if all other things are equal. If the application is based on need, please make a case. For further information, contact the School of Graduate Studies. recommendation from the Dean, Faculty of Science.

The National Scholarship in Ocean Studies at Memorial University of Newfoundland

The federal Department of Fisheries and Oceans (DFO) has helped to establish The National Scholarship in Ocean Studies to be awarded to an outstanding Ph.D. candidate in an aspect of ocean studies which may include: chemistry, biochemistry, biology, mathematics and statistics, physics and physical oceanography, earth sciences, geography, economics or engineering. The award, valued at \$18,000 per annum for a

⁷ The minimum required academic standing for candidates in the MBA program is an overall average of 80% in graduate program courses, with no grade lower than 75%.

maximum of three successive years, may be held in conjunction with other major awards. The award is made only on the basis of academic excellence and the successful candidate must exhibit and maintain first-class standing. Guidelines and applications for the scholarship are available from the school of Graduate Studies. Final selection of the candidate will be made by a committee which reports to the Dean of the School of Graduate Studies. A one-time grant of up to \$2,000 may be made in support of travel to appropriate conferences where the student is presenting research findings. Deadline for application to the School of Graduate Studies will be July 1 in any one year when the scholarship is available.

Women's Association of Memorial University of Newfoundland Graduate Student Scholarship

Two Master's level and two Ph.D. level scholarships valued at \$1,200 each are awarded annually to full-time students entering a program in the School of Graduate Studies. Of the Master's level awards, one shall be for a thesis program, and one for a non-thesis program. Financial need as well as scholarship standing will be taken into consideration. The awards will be made upon the recommendation of the Dean of Graduate Studies.

External Scholarships and Awards

These scholarships and awards are administered by groups external to Memorial University. This is a list of organizations which have awarded scholarships to Memorial University students. Some have an award specifically designated for Memorial, for others the competition is national or international. Students are encouraged to apply for these awards and to search the Internet for others for which they may be eligible. Please visit their website for more [external scholarships and deadlines](#).

Society of Exploration Geophysicists

The SEG is a large, international, organization of geophysicists based in Tulsa, Oklahoma. It offers a number of undergraduate and graduate scholarships which Memorial students have been successful in being awarded occasionally. Forms and information are available from their [website](#).

KEGS Foundation

KEGS Foundation is a charitable organization set up to promote student scholarships in geophysics in Canada. The Foundation distributes an estimated \$5,000 in scholarships annually to promising undergraduate and graduate students with interest in pursuing a career in geophysics. The amount of each scholarship awarded ranges from \$500 to \$1,000, depending on indicated merit and need. Further information and applications are available from their [website](#).

Special Scholarships for Students to Pursue Graduate Studies Related to Resource Development

The "Special Scholarships for Studies in the Sciences Related to Resource Development" will be in the amount of \$7,500 annually for students registered in full-time post-graduate studies at Memorial University of Newfoundland, in programs leading to the Masters and/or Doctorate degrees in the Sciences related to Resource Development. A scholarship may be renewed and awarded for one additional year only.

The scholarships are tenable at Memorial University of Newfoundland, but under special circumstances may include approved studies abroad. Eligible candidates normally should be residents of the province, or should have been resident in the province for at least three years prior to entering the program, excluding time spent at post-secondary institutions.

Candidates will normally have a First-Class Undergraduate Degree or a Second-Class Degree with First-Class standing in courses in their major field of study. Candidates should apply for the scholarships to the Office of the Dean of Graduate Studies, Memorial University of Newfoundland

Natural Sciences and Engineering Research Council of Canada (NSERC)

The Council awards each year, in open competition, a number of post-graduate scholarships in Science and Engineering to assist students in undertaking graduate study and research leading to advanced degrees. These scholarships and fellowships are tenable at both Canadian universities and institutions outside Canada. Further information and applications are available from their [website](#).

Travel Funding

The School of Graduate Studies, the Faculty of Science and the Graduate Students' Union provides travel funding to Memorial University's masters and doctoral students who are presenting papers/posters at conferences outside of Memorial. Students can receive up to the maximum amount allowable from each of these funding sources throughout their graduate program.

Faculty of Science

The Faculty of Science recognizes the considerable value to graduate students of presenting their work and interacting with their peers from other institutions. To facilitate that process, the Faculty provides grants in support of conference travel according to the following guidelines. It is expected that students will seek additional support from their Department, the School of Graduate Studies, the research supervisor, and any other relevant sources.

- The grants shall be for a maximum of \$400.
- M.Sc. students shall be eligible for one such grant during their program. Typically this will be taken near the completion of the program so that the student will be able to present their research results.
- Ph.D. students shall be eligible for two such grants during their programs, with the proviso that no more than one grant shall be given in any one fiscal year.
- To be eligible to receive a grant, the student must be presenting at the conference (poster or oral presentations are equally acceptable)
- Application must be made to the office of the Dean of Science using the appropriate form. Where possible, proof of acceptance of a paper for presentation should be provided when funding is applied for. If the paper has not been accepted at the time of application, funding will be provided conditional on acceptance.
- Travel expenditures and claims must conform to the travel guidelines of the university. Information and advice may be obtained from the departmental office of the student.
- Deviations from this policy may be made at the discretion of the Dean.

Graduate Students' Union

All graduate students are eligible to receive up to \$250 per Masters degree program or up to \$500 per Ph.D. program to aid in conference-related costs. Students may choose to split this amount over several conferences, rather than applying for the entire sum at once. Thus, conference funding may be available more than once during a graduate program. Students are also eligible for up to \$150 of the above amounts for research trips, field trips, conferences at which they are not presenting, workshops, societal meetings or seminar series that are related to their academic program.

Students who are participating in an out-of-province conference are eligible to apply for funding. While assistance is available only after the conference is completed, students should apply for the funding a minimum of four weeks before travel begins. Conference aid from the Graduate Students' Union is not guaranteed and is contingent upon the availability of funds and the submission of a complete application package. For an application package or for more information drop by the GSU general office in GH-2007.

Further information can be found on the [GSU Web site](#): Email: gsu@mun.ca

School of Graduate Studies

The School of Graduate Studies offers travel assistance to graduate students who are presenting papers/posters at conferences. This funding may be used in conjunction with that received from the Graduate Students' Union. See [Travel Funding](#). For more information visit the main office of the School of Graduate Studies at IIC-2012 (Bruneau Centre).

For information regarding Scholarships:

Tammy Power-Taylor

Telephone: (709) 864-3425

Scholarships Officer

School of Graduate Studies

Email: tpowertaylor@mun.ca

Room IIC-2012

Inco Innovation Centre

Memorial University of Newfoundland

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CONTACT INFORMATION

SCHOOL OF GRADUATE STUDIES

General Inquires, IIC-2012

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DEPARTMENT OF EARTH SCIENCES

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APPENDIX I: MSC STUDENT ACTIVITIES AND MILESTONES

Activity	Timing	Action needed	By
Year 1			
Supervisory Committee Meeting	Within the first month of arrival at MUN	Scheduling appropriate faculty and student	Supervisor
Agree course requirements	Within the first month of arrival at MUN	Discussion of thesis topic and training needs	Supervisory Committee
English Language Placement Test	Upon arrival at MUN	Student to schedule	ESL students only
Thesis Proposal	6 months from arrival at MUN	Write thesis proposal Submit proposal and signed form to Graduate Officer	Student Supervisory Committee, GO
Meeting with Head of Dept and Graduate Officer	6 months from arrival at MUN	Graduate secretary determines time, student shows up	Student and graduate secretary
Proposal seminar	Within 2 semesters from arrival at MUN	Seminar based on thesis proposal	Student
Completion of 6 credit hours of Courses	Within 12 months of registration	Register attend and pass with B grade or better	Student
Research on thesis topic	Ongoing	Hard work	Student
Supervisory committee meeting and completion of Annual Progress Report	Before 6 month meeting with Head and MAP	Schedule all of supervisory committee and student	Supervisor
Year 2			
Research	Ongoing	Hard work	Student
Completion of Thesis paperwork	Initiate 2 months before anticipated submission	Student to contact Graduate Secretary for up-to-date information	Student, Supervisory Committee and Graduate Secretary
Apply to graduate	Convocation date depends on semester	Apply on line before deadline	Student
Present Exit Seminar	Prior to submission of the final thesis	Summary of final results of the thesis	Student
Appointment of Examiners	Prior to submission of the thesis for examination	Supervisor sends list of possible examiners to Graduate Secretary HoD chooses examiners	Supervisor, Graduate Secretary, HoD
Submission of Thesis	Ideally, 3 months prior to end of year 2 (to a maximum of 7 years)	Student to obtain signed supervisory approval form and submit to Graduate Secretary with thesis	Student supervisory committee Graduate secretary
Examination of Thesis	Takes 1-2 months (or more)	Reading of thesis and submission to Dean (SGS)	Examiners
Correction of Thesis	Must be completed within 6 months of return of thesis	Student meets with committee to discuss recommended corrections and undertakes to complete them within 6 months	Student Supervisory committee
Submission of corrected thesis and associated paperwork	Upon completion of corrections	Supervisory committee sends RAD form to HoD, student uploads thesis	Student, supervisory committee, HoD
Graduation/Convocation	Graduated upon signing of RAD. Degree given at convocation.	Turn up to convocation (or accept degree in absentia)	Student Happy relatives & friends

APPENDIX II: PHD STUDENT ACTIVITIES AND MILESTONES

Activity	Timing	Action needed	By
Year 1			
Supervisory Committee Meeting	Within the first month of arrival at MUN	Scheduling appropriate faculty and student	Supervisor
Agree course requirements	Within the first month of arrival at MUN	Discussion of thesis topic and training needs	Supervisory Committee
English Language Placement Test	Upon arrival at MUN	Student to schedule	ESL students only
Meeting with Head of Dept and Graduate Officer	6 months from arrival at MUN	Supervisory Report form (including timeline to completion)	Student Supervisory committee
Completion of 6 credit Hours of Courses	Within 12 months of registration	Register attend and pass with B grade or better	Student
Research on thesis topic	Ongoing	Hard work	Student
Supervisory committee meeting and completion of Annual Progress Report	Before 6 month meeting with Head and Graduate Officer	Schedule all of supervisory committee and student	Supervisor
Create Comprehensive Exam Committee	Within first year of program.	Supervisor to give list of potential examiners to HoD	Supervisor and HoD
Year 2			
Research	Ongoing	Hard work	Student
Choose Comprehensive Exam Topic & Set Exam Date	Within first month of Year 2	Schedule meeting of Examination Committee To include student.	Supervisor and Examination Committee
Submission of Term Paper & Thesis Proposal	2.5 months from receiving term paper topic. Normally before end of first semester (or end of second semester ESL students)	Hard work to prepare term paper	Student
Comprehensive Exam and Thesis Proposal Defence	Within 2 weeks of submission of term paper	Preparation of seminar and oral defence	Student and Examination Committee
Supervisory committee meeting	End of year 2	Schedule all of supervisory committee and student	Supervisor
Annual progress report 2 <i>Including timeline to completion, (failure to submit will trigger a meeting with HoD and Graduate Officer)</i>	Immediately following supervisory committee meeting. not later than two years into the program	Complete report form Obtain signatures Submit to Graduate Officer	Student Supervisor Supervisory committee
Year 3			
Research	Ongoing	Hard work	Student
Present GS ³ Seminar Student	During the 3 rd year	Choose date	Student
Supervisory committee meeting	End of year 3	Schedule all of supervisory committee and student	Supervisor
Annual progress report 3 <i>Including timeline to completion, (failure to submit will trigger a meeting with HoD and Graduate Officer)</i>	Immediately following supervisory committee meeting not later than three years into the program	Complete report form Obtain signatures Submit to Graduate Officer	Student Supervisor Supervisory committee
Year 4			

Activity	Timing	Action needed	By
Research	Ongoing	Hard work	Student
Thesis writing	At least 6 months	Very hard work	Student
Completion of Thesis paperwork	Initiate 2 months before anticipated submission	Student to contact Graduate Secretary for up-to-date information on thesis submission	Student, Supervisory Committee and Graduate Secretary
Apply to graduate	Convocation date depends on semester of completion	Apply through self service	Student
Appointment of Examiners	Prior to submission of the thesis for examination	Supervisor sends list of possible examiners to Graduate Secretary HoD chooses examiners	Supervisor Graduate Secretary
Set time for thesis defense	Agreed upon time after expected return of reviews	Graduate secretary finds suitable time	Student, supervisory committee, examiners, SGS, Graduate secretary
Submission of Thesis	Ideally, 3 months prior to end of year 4 (to a maximum of 7 years)	Student to obtain signed supervisory approval form and submit to Graduate Secretary with thesis	Student Supervisory committee Graduate secretary
Examination of Thesis	Takes 1-2 months (or more)	Reading of thesis and submission to Dean (SGS)	Examiners
Thesis defense	At time determined above, for ~2.5 hours. Can be in person, online or hybrid.	Student presents thesis work (~20 minute seminar), then answers examiners questions	Student, supervisory committee, examiners, audience
Correction of Thesis	After a successful defense, students are given written examiners reviews, and given up to 6 months to make corrections	Student meets with committee to discuss recommended corrections and undertakes to complete them within 6 months	Student Supervisory committee
Submission of corrected thesis and associated paperwork	Upon completion of corrections to satisfaction of supervisory committee	Supervisory committee sends RAD form to HoD, student uploads thesis	Student and supervisory committee, HoD
Graduation/Convocation	For taking a job, as soon as the RAD is signed you have graduated. For getting the official degree, on the date of convocation.	Turn up to walk across stage at convocation (or receive degree in absentia)	Student Happy relatives & friends