

**GRADUATE STUDIES IN THE DEPARTMENT OF EARTH SCIENCES,  
UNIVERSITY OF NEW BRUNSWICK  
(Latest Revision: December, 2015)**

**GENERAL INFORMATION**

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

This document will be in effect starting 10<sup>th</sup> December, 2015

Contents:

- 01. Graduate Academic Unit**
- 02. Student Entry Requirements, Application Procedure, and Registration**
- 03. Graduate Student Finances**
- 04. Student Arrival, Accommodation, and Work Space**
- 05. Student Advisory Committee**
- 06. Program of Study and Annual Progress Report**
- 07. Grade Point Average (Academic Performance)**
- 08. Research Proposal Presentation**
- 09. Program Transfer or Termination**
- 10. Graduate School Tenure and Program Extension**
- 11. Thesis Examination and Defence**
- 12. Scholarships and Awards**

Abbreviations

DOGS: Director Of Graduate Studies, Department of Earth Sciences  
GAC: Graduate Affairs Committee  
GAU: Graduate Academic Unit  
GPA: Grade Point Average  
SGS: School of Graduate Studies

## **REGULATIONS**

### **01. Graduate Academic Unit (GAU), Department of Earth Sciences**

The GAU is the committee of record and consists of all members of the Department of Earth Sciences who are eligible to supervise graduate students (i.e., a faculty member who has been approved as a member of the SGS by the Executive Committee of the SGS and the Senate).

The GAU meets as a whole as part of a regularly scheduled Faculty Meeting, where non-urgent votes may be passed (time-sensitive matters may be voted on by the GAU via e-mail). However, most matters relating to graduate studies are overseen and dealt with by the Graduate Affairs Committee (GAC). Both the GAU and the GAC are chaired by a Director Of Graduate Studies (DOGS).

#### **A) GAC Structure**

The GAC consists of four faculty members plus the DOGS. The DOGS is usually a 2-year position, which should be supplemented by an additional year beforehand as Director-Elect, and an additional year subsequent as Past-Director. Other GAC members serve on two year terms. Where there is business to attend, the GAC will meet monthly during Fall and Winter, and Bi-monthly during the Spring, Summer, and Intersession.

#### **B) GAC Reporting**

Based on University governance, it is understood that the DOGS reports to the Executive Committee of the Graduate School. The GAC updates, and provides written recommendations, to the GAU of matters as an agenda item at monthly Faculty Meetings. Recommendations may be passed at GAC meetings or by e-mail vote. Quorum will consist of the DOGS, or his nominated replacement, plus two other GAC members. Members shall not vote where there is conflict of interest.

#### **C) GAC and DOGS Duties**

The GAC will:

- review graduate applications where a potential supervisor wishes to accept a student who does not meet standard entry requirements, or if the potential supervisor wishes to appeal a student rejected by the GAU (Article 2).
- assign Teaching Assistants to undergraduate courses, as outlined in Article 3.
- assign available office space to graduate students, as outlined in Article 4.
- review cases where a Research Proposal Presentation has not been accepted by a student's Advisory Committee within the required time frame (Article 8).
- review cases of Program Transfer or Termination, Graduate School Tenure, and Program Extension, and provide a recommendation to the GAU (Articles 9, 10).
- review and rank or nominate applications for the awards and scholarships identified in Article 12.
- ensure that the Program of Study (Article 6) is of a reasonable and relevant standard.

The DOGS will:

- chair meetings of the GAC.
- report to the GAU at Faculty Meetings regarding meetings of the GAC.
- with the assistance of the Graduate Secretary, deal with initial inquiries regarding graduate student applications (Article 2 below).

- with the assistance of the Graduate Secretary, collect, sign and forward copies of Student Annual Progress Reports to the Dean of Graduate Studies (Article 5C).
- ensure that Student Advisory Committees review theses in a timely manner (Article 5E).
- with the assistance of the Graduate Secretary, maintain an up-to-date copy of each graduate student's "Program of Study" form (Article 6).
- meet with new graduate students every September and January to introduce them to the department, faculty and, with the assistance of the course instructor for the graduate précis course, discuss program requirements.
- circulate to all graduate students, every September and January, a list of graduate courses to be offered in the coming term, and a schedule for upcoming awards deadlines.
- with respect to votes to be conducted electronically (Article 2, 11B) and in consultation with the (proposed) supervisor of a student, introduce and second appropriate motion(s) of acceptance. The DOGS will adjudicate on any subsequent discussion before calling the vote on the motion, amended if necessary, after 1 working day.
- facilitate approval of theses by the GAU (Article 11B, E).
- chair M.Sc. oral examinations (Article 11D).
- forward GAC nominations for the Governor General award, and rankings for NSERC PGS to the appropriate person (Article 12).
- forward information regarding the NSERC USRA awards to the Director of Undergraduate Studies (usually early in each new year), and forward to the SGS any resulting recommendations of the undergraduate awards committee.

## **02. Student Entry Requirements, Application Procedure, and Registration**

In addition to all requirements stipulated by SGS (e.g., minimum GPA of 3.0/4.3, or "B" average, or an Upper Second Class degree, and English language proficiency tests where appropriate), the Earth Sciences GAU normally requires applicants be in possession of a BSc degree in an Earth-Science-related subject. Applicants not meeting these standards may be accepted, pending review by the GAC, if a potential supervisor presents a case to accept a student who otherwise has (i) a good degree in a related subject relevant to their proposed research area, (ii) supplementary work experience, and/or (iii) excellent references. Such applicants may be accepted, but usually under one of the following conditions: (a) Probationary Period, when previous academic performance does not meet the minimum academic admission standards of the GAU or SGS, but where there are *very strong* indications of potential, (b) Probationary Assessment Period, when students with apparently acceptable credentials are applying from countries having an educational structure different from that of Canada, (c) Qualifying Period, when academic performance is sufficient but there is considered inadequate depth in the number or type of courses taken in disciplines relevant to the graduate program of study. Students seeking entry into a Joint Degree program with another UNB GAU will rarely be adequately trained in both disciplines and should expect to be accepted by one of the GAU's under (c). For cases (a) to (c), see SGS web-pages for full conditions. International students may be directed toward further English training (at their own expense) external to the Earth Sciences' graduate program should they have a marginal entry score. This directive may also be implemented during study for the MSc/PhD if there is poor performance by the student.

Potential applicants should first fill out a preliminary assessment form available on the UNB Earth Sciences web-site. If any professors have an opportunity available they will respond to the student's preliminary assessment form. At this stage, the student should then formally apply to the SGS by completing the official SGS Application Form.

When the complete SGS application is received by the Earth Sciences GAU, the proposed supervising professor(s) should provide the GAU with a short summary of the proposed project, any probation or remedial courses or other requirements to be completed, and its funding (this summary should also have been forwarded to the prospective student). The project summary and application will then be available for viewing by the GAU members for a total of five working days. After a 1-working-day discussion period on a motion to recommend acceptance, there is an e-mail vote that passes by simple majority of the GAU. If the vote is negative, only the potential supervisor has right to appeal for a review by the GAC. If the SGS agrees with the recommendation, it will then send successful applicants a "Certificate of Acceptance" along with a letter of financial assistance (Appendix II) from the supervisor and DoGS.

As soon as the student receives and accepts the aforementioned documents, he/she will then be able to register on-line. To acquire an e-mail ID for login purposes, please contact the Department Secretary at 506-453-4803. For a PhD in the Earth Sciences, a student should register for ESCI6998; for an MSc, a student should register for ESCI6997.

### **03. Graduate Student Finances**

#### **A) Fees**

In summary (students should make themselves familiar with the SGS web page regarding fee regulations), full time Master's candidates pay per term fees for the first two years (6 terms); full time PhD candidates pay per term fees for the first three years (9 terms). After this time, students continue to pay fees either on a "full-time continuing" basis or on a "part-time" basis until graduation. Part-time MSc students must, prior to graduation, have paid fees equal to at least 4.5 times the full-time term fee in effect at the time of first registration; part-time PhD students must have paid fees equal to or at least nine times the full-time term fee in effect at the time of first registration. Non-Canadian graduate students are also required to pay an International Differential Fee for two years in the case of MSc study, for three years in the case of a student with a completed MSc who is now undertaking PhD study, and for up to 4 years for PhD students without a completed MSc. Students must have fees paid by the third week of each term (fall, winter, and summer) or the SGS will consider them withdrawn from the program.

**Note:** fees can be deducted from any financial assistance administered by the university (see Article 03b, below) or they can be paid in full upon arrival. For fee information contact the Financial Services Department or go to their website.

#### **B) Financial Assistance**

Monetary support toward payment of the above fees and cost of living may come from the student's own funding, or external scholarships (e.g., NSERC PGS), or from the various UNB sources described below.

***Graduate Academic Assistantship (GAA):*** This typically comes from external funding obtained by a student's supervisor. Total GAA support typically varies from research project to research project, but should be indexed to equivalent NSERC PGS awards. The GAA is provided to cover time spent on academic work, and is tax-free. NOTE: Students should also be aware that, in exceptional circumstances, an external funding agency may withdraw contingent funding to a supervisor leaving the student without continued monetary support.

Students are responsible, before commencing their program, for clarifying with their supervisor(s) the status of this funding.

***Graduate Research Award (GRA):*** This consists of funds provided by the SGS and distributed via the DOGS. In the Department of Earth Sciences, the funds are distributed twice a year, as tax-free awards for the fall and winter terms only. The funds are divided equally between all full-time MSc students in their first two years of study (4 payments) and all full-time PhD candidates in their first three years (6 payments), providing such students are current with their fees, and that Annual Progress Reports, Précis, and Research Proposal presentations have been completed on time (see Articles 05c, 06, 08, below).

***UNB International Differential Award (IDA):*** This consists of awards given directly by the SGS to all international students, enrolled full-time in PhD study only, to help cover the cost of the International Fee Differential.

***Graduate Teaching Assistantship (GTA):*** GTAs are awarded to successful graduate applicants responding to job advertisements that seek assistance in teaching undergraduate courses. Salary scale, student eligibility, and 'priority' are stipulated by agreement between the University and the Graduate Student Union. Salary is subject to tax and EI deductions.

Each term, upon release of the job advertisements for GTA's in the Earth Sciences, students who wish consideration for a GTA are required to submit an employment application indicating any course preference and all courses for which they are not qualified to assist. Applications are assessed and positions filled by the DOGS and GAC in accordance with the union agreements. Successful students who are unable to attend a lab for whatever reason are responsible for finding an alternate, adequately qualified student to cover, and to notify the course instructor of the change. Failure of the student or her/his replacement to turn up for a lab, or unsatisfactory performance in a GTA, may negatively affect the student's chances for further GTA appointments.

In the Department of Earth Sciences, a "half-GTA" pays for 52 hours of work per term. Students normally receive no more than two "half-GTA's" (= one "full GTA") per term. The number of "half-GTA's" offered over the course of an academic year may vary, as might the number of GTA's assigned to each course, depending on funds available. Policy is to assign GTA positions to courses using the following order of course priority:

- i- Field school
- ii- 1st year lab course
- iii- 2nd year course with lab component
- iv- Other compulsory course with lab component
- v- Elective with labs

Within any one order, courses involving safety concerns, use of chemicals or moving equipment (etc.), will receive priority.

***Research Assistantship (RA):*** Any money received by a student for additional work, not directly related to the thesis research, undertaken for a supervisor (or other faculty member, departmental chair, etc.) is paid as an RA. Minimum rate of pay is set by agreement between the University and the UNB Graduate Student Union. Salary is subject to tax and EI deductions.

**Note:** Graduate Students are limited to a maximum of 12 hours taxable employment per-week-equivalent (~130 hours total) over the duration of an academic term.

#### **04. Student Arrival, Accommodation, and Work Space**

Graduate students usually start their course of study at the start of September, January, or May. Finding a place to live in September, when undergraduates are starting their own studies, can be difficult and an early start to the search is recommended. The Department of Earth Sciences itself does not assist in the arrangement of accommodation for incoming students. Individual graduate students already in the department may be aware of vacancies, and the International Student Services Advisor (<http://www.unbf.ca/isao/>) may also be able to assist students arriving from abroad. Obtaining a permanent address in Fredericton as soon as possible will help in transferring driving licenses and insurance, etc.

NOTE: Foreign students should attempt to get an international driving license before entering Canada since there is a required waiting period before testing for a Canadian license.

Students will be assigned any *available* office space in the Department of Earth Sciences by the GAC, using the following list of priority.

- (i) New full-time PhD students (in their first 4 years of full-time study)
- (ii) New full-time MSc students (in their first 2 years of full-time study)
- (iii) For each faculty supervisor in turn, one full-time student by latest starting date
- (iv) Part-time PhD students in their first 4 years of study
- (v) Part-time MSc students in their first 2 years of study

Students may also, or alternatively, be provided with work space by a supervisor.

Policy is to place all new Grad students in a grad-student office on the main floor (e.g. Room F103). Subsequently, the longest-standing resident in such a room may be asked to make way for new students by relocating to another room, where research groups may be placed together.

#### **05. Student Advisory Committee**

##### **A) Composition**

The Student Advisory Committee is established by the graduate student's supervisor, in consultation with the graduate student and the proposed Committee members. This should be done upon the student's registration, and not later than six weeks after the start of study.

**PhD Program:** The Committee consists of a minimum of three members, including the supervisor(s), all of whom must be full faculty members, adjunct faculty members, or honorary research associates.

**MSc Program:** The Committee consists of a minimum of two members, including the supervisor(s), all of whom must be full faculty members, adjunct faculty members, or honorary research associates.

##### **B) Committee Meetings**

After research has commenced, graduate students must present a Research Proposal to their Advisory Committee (see Article 8 below). The Advisory Committee should also meet *officially* with the graduate student at least once a year. It is essential that these yearly meetings be documented. Additional meetings may be requested by the graduate student or any member of the Advisory Committee.

### **C) Annual Progress Report**

It is important that the progress of the student be documented appropriately. To this end, an annual progress report must be completed by each research-based graduate student and submitted to the DOGS, for forwarding to the SGS, by the end of the second full week of November, of each calendar year (form available on-line). The GAU recommends that the Annual Progress Report form be discussed at an Advisory Committee meeting with the student. The original form should be signed by the student and the supervisor(s) should be forwarded to the DOGS for completion and signing. Copies are archived and made available to the graduate student, with the original being sent to the Dean of Graduate Studies in the SGS.

### **D) Thesis Submission**

A student must submit a complete draft copy of the thesis, that conforms to all requirements of the SGS and Earth Sciences GAU (see "REGULATIONS AND GUIDELINES FOR THE PREPARATION AND SUBMISSION OF GRADUATE MASTER'S THESES PhD DISSERTATIONS AND REPORTS" available on the SGS webpage, and Appendix I), to each member of the Advisory Committee. The Committee will then critically review the thesis for scientific content, as well as proper form and grammar, and provide comments and suggested revisions to the student in a timely manner (see Article 5E below). Students should normally process these comments and revisions within several weeks of the student receiving the feedback. Once comments and revisions are satisfactorily addressed and the thesis is approved by the Advisory Committee, the committee should submit to the DOGS, in writing, a recommendation that the thesis go forward for GAU approval, and provide the name of a departmental reader (who also becomes a member of the Examining Committee).

### **E) Time Required to Review a Thesis**

It is the obligation of the supervisor and Advisory Committee members to review theses in a reasonable time-frame to facilitate the timely completion of degrees. Students can expect to receive comments back from their Committee within approximately three weeks following submission. This is a guideline and there may be times when more than three weeks will be required to review the thesis (due to vacations, field work, conferences, etc.). When a thesis is submitted, the Advisory Committee, the student and Committee members should communicate a mutually satisfactory time when comments will be provided to the student. If there are any delays beyond the agreed time, the student should contact the Committee members to enquire about the thesis. If this does not yield results, then the student should inform the DOGS who will contact the Committee members to hasten the process.

### **F) Other Duties**

The Advisory Committee acts on behalf of the student in requesting a transfer from an MSc program to a PhD program and in requesting the extension of a graduate program. In both cases, the Committee should meet with the student and then present any recommendations to the GAC (see Articles 9 and 10).

## **06. Program of Study**

A Program of Study form should be completed and signed by the graduate student and all members of the Advisory Committee within two months of the student's official starting date. The original form (Appendix III) should be completed with the aid of the graduate student calendar (Appendix IV), and forwarded by the student to the DOGS and to the Graduate Secretary for archive in the official files. Any changes to the Program of Study must be transmitted in writing to the DOGS.

Both the M.Sc. and Ph.D. degrees require the completion of a thesis based on an original research project. All graduate students are also required to register for ESCI6000 (Précis) during their first year of graduate studies. Students should be aware that individual précis topics may vary considerably in scope and demands, but submission requirements are standard (see Appendix I).

M.Sc. students, and Ph.D. students who have not already completed a M.Sc., must also complete a minimum of 4 one-term courses (also subject to SGS course regulations). One of the courses would be ESCI6000 and one may be a fourth-year-level undergraduate course. Any additional requirements are determined by the Advisory Committee in consultation with the graduate student.

### **07. Grade Point Average (Academic Performance)**

As per SGS regulations, students must graduate with a 3.0 GPA ("B" grade average). To ensure this performance, the Earth Sciences GAU additionally requires no grades lower than a "B-", and, when a GPA falls below 3.0, at the discretion of the Advisory Committee, this will result in withdrawal of all GRA/GTA/RA funding and possible expulsion from the program on recommendation of the GAU. The Grade Point Average will be monitored by the student's supervisor who must advise the student and Advisory Committee of failing academic performance. The GAC will then review the case and provide an initial recommendation to the GAU.

### **08. Research Proposal Presentation**

All graduate students must present a Research Proposal to their Advisory Committee within eight months of beginning an MSc, or twelve months of beginning a PhD. Part-time PhD students have 18 months to complete their Research Proposal. The purpose of this presentation is to assist the student in the development of their proposed research by providing constructive criticism. The Advisory Committee is expected to provide assistance to the student in preparing for the presentation, to attend the presentation, and to provide guidance in revising the research plan according to the issues raised by the presentation. This presentation does not relieve the student, supervisor, or Advisory Committee of their respective responsibilities with respect to the research. It is expected that this presentation will be of assistance to the student in developing their research program, and will result in an acceptable end product. If a student has been working on a project prior to officially starting a graduate program, the Earth Sciences GAU strongly encourages the student to complete the research proposal requirement as soon as possible.

The proposal will include a 2–4 page written summary (typed single spaced) and a 25–45 minute oral presentation followed by an open question period.

The Research Proposal shall include:

- (1) Background — Literature Review
- (2) Statement of Problem — Objective & Hypothesis/es & Significance
- (3) Methods — Experimental Design
- (4) Anticipated Results & their Analysis



The student is responsible for arranging the time of the presentation, also agreeable to the other members of the Advisory Committee, booking the location of the presentation, and any audio-visual equipment.

The student is responsible for informing the DOGS when a Research Proposal Presentation has been accepted by the Advisory Committee. Noncompliance with the above regulations will result in a review of the student's continuation in the MSc or PhD program by the GAC who will then forward their recommendation to the Earth Sciences GAU in advance of a formal vote.

## **09. Program Transfer or Termination**

### **A) MSc to PhD**

The student must write a letter to the Advisory Committee seeking a change in program. The PhD proposal will comprise a written proposal and an oral presentation to the Advisory Committee. At the discretion of the Advisory Committee a written examination may also be required.

All documents will be made available to the GAC for review. This will include a copy of the applicant's transcript, letter requesting change in program, and a description of the PhD research proposal (see Article 8 above). A change of program from MSc to PhD requires the approval of the GAU on recommendation of the Advisory Committee and the GAC. But for exceptional circumstances, a change in program will not be considered after the 30<sup>th</sup> month of the MSc program.

### **B) PhD to MSc**

In some cases where a student is initially enrolled in the PhD program, the student or Advisory Committee may seek a change to the MSc program.

If initiated by the student, he/she must write a letter to the Advisory Committee seeking the change. If the Committee agrees, all documents will be made available to the GAC who will then forward their recommendation to the Earth Sciences GAU in advance of a formal vote. Documents should include a copy of the applicant's transcript, letter requesting change in program, and a description of the revised research proposal.

The Advisory Committee may seek to initiate a change if the student is failing to maintain the appropriate GPA (see Article 7) or struggling with the research. The Committee must first, however, discuss with the student and provide in writing their concerns and expected satisfactory level of performance. If improvement is not achieved within a time period agreed by the advisory committee, the student should receive another letter that outlines the continued concerns and the intent to initiate a change in program. All documents are then made available to the GAC who will then forward their recommendation to the Earth Sciences GAU in advance of a formal vote. Documents must include a copy of the student's transcript, Progress Report forms, the letters of concern, and a description of the revised research proposal. The student will be given the right to appeal to the GAC in advance of any vote.

### **C) Termination**

In cases where a student is failing to maintain the appropriate GPA (see Article 7) or struggling with the research, the Committee must discuss with the student and provide in writing their concerns and expected satisfactory level of performance. If improvement is not achieved within

a time period agreed by the advisory committee, the student should receive another letter that outlines the continued concerns and the intent to initiate a termination of the student's degree program. All documents are then made available to the GAC who will then forward their recommendation to the Earth Sciences GAU in advance of a formal vote. Documents must include a copy of the student's transcript, Progress Report forms, and letters of concern. The student will be given the right to appeal to the GAC in advance of any vote.

A student's program may be terminated at any time by the University, if fees are not paid, tenure is exceeded (see Article 10), or the SGS and University regulations are not adhered to (see UNB Graduate Calendar).

A student's program may be terminated at any time if the funding to the professor for the GAA is withdrawn. Research-funding agreements vary widely and it is the student's responsibility to be aware of the status and longevity of the professor's funding and whether any GAA money being offered is provisional.

Students may terminate their program at any time by informing their supervisor in writing, with a copy to the DOGS.

Whenever a program is terminated, the student is required to return to their supervisor any data that they have acquired during their tenure, along with any equipment provided to the student by the supervisor or University.

#### **D) Change of project**

In some cases, the original project topic or outcomes may be changed. This change may or may not involve a program transfer. Regardless, the change must be by agreement between the student and her/his Advisory Committee. The DOGS should be informed of the change.

### **10. Graduate School Tenure and Program Extension**

#### **A) Length of Program**

The SGS has set limits on the lengths of Graduate Programs: 4 years for completion of the MSc degree and 7 years for the completion of a PhD degree. Students should note that this limitation does not require that the supervisor fund the student for this maximum length of time.

#### **B) Request for extension**

If a student feels unable to meet these deadlines, the problem should be discussed with the Advisory Committee. If there are exceptional circumstances only, the committee may recommend requesting an extension. The supervisor and graduate student should then make a written representation to the Earth Sciences GAC at least six months prior to the deadline for the student's tenure in the program. The written request must explain the reasons for requesting an extension and include a detailed timetable outlining what will be completed and by what dates (up to the point that the thesis is submitted for formal examination). The timetable must be approved by the student's Advisory Committee. On the recommendation of the GAC, the Earth Sciences GAU will then vote whether or not to recommend to the SGS that an extension be granted. Requests for 'extensions to extensions' are not viewed favourably by either the GAC or the SGS. Students entering the workforce prior to completion of their thesis should make appropriate arrangements with their new employer to ensure completion still occurs in a timely manner.

### **C) Change of status**

Students who wish to change their status, from full-time to part-time or *vice versa*, should first discuss the matter with their supervisor. Students should note that a status change can only occur at the start of term (September, January, May). Financial assistance (e.g. GAA, GRA, GTA) and fee payments may be affected (see SGS website for further details), but time limits for programs do not change. To formalize a change of status, students should complete the form “Request for Change of Student’s Status”, available from the SGS.

## **11. Thesis Approval, Examination and Defence**

### **A) Regulations and Guidelines**

Copies of regulations and guidelines for the preparation and submission of graduate theses are available from the SGS. These should be adhered to in order to avoid unnecessary delays in final acceptance of the thesis. As well as any requirements placed on the thesis by the SGS, the Department of Earth Sciences additionally requires adherence to the standards outlined in Appendix I.

### **B) Approval of Thesis by the GAU**

After a student has completed her/his Program of Study and the thesis is approved by the Advisory Committee (see Article 5D above), the Committee will make a written recommendation to the DOGS that the thesis go forward for Earth Sciences GAU approval, and provide the name of a departmental reader. The complete thesis will then go on departmental display to allow for comment by GAU members, and a copy of the complete thesis also will be given to the departmental reader for review (effectively, the reader and the GAU are here acting in the position of what the SGS describes as the "Examining Committee"). The display period will be that time for the reader to complete the thesis, to a maximum of ten working days. During the display period, faculty members should communicate any comments regarding the thesis directly to the DOGS who will forward such comments to the departmental reader for consideration. After the display period, the departmental reader will provide a written statement on the thesis to the DOGS. The departmental reader will recommend one of three courses of action:

- (i) acceptable with minor/no revision: the thesis is ready to proceed to examination — any revisions must still be undertaken before the thesis is passed on to the Examining Board.
- (ii) acceptable after significant revision: the thesis is returned to the student for correction. After revision, the thesis is re-reviewed by the departmental reader who must then recommend one of the other two courses of action — the thesis does not have to go back on departmental display.
- (iii) not currently acceptable: the thesis is rejected in its present form. Major revisions are necessary, or previously identified revisions have not been satisfactorily addressed. The thesis must then be resubmitted for both re-display and re-reading after an interim period of not less than three months.

When the departmental reader recommends option (i), the thesis may go forward to final examination. At such a time, the Supervisor will provide the names of the Examining Board members (Article 11C below) to the DOGS, who will call to the GAU for a motion to approve the thesis for examination and the members of the Examining Board.

### **C) Examination Boards**

The Examination Board for an MSc thesis will consist of at least three members:

1. Supervisor(s) 1 vote total
2. GAU Internal (member of the Earth Sciences GAU - departmental reader) 1 vote

3. GAU External (UNB Faculty member not in the Earth Sciences GAU) 1 vote

Members of the Examining Board who were involved in the supervision of the candidate must constitute a minority of the Examining Board. The Chair of the Examining Board will be the GAU Internal member or another member of the candidate's GAU who has not been formally involved in the supervision of the candidate. The Examining Board may also include an external reader.

The Examination Board for a PhD will consist of at least five members:

1. Supervisor(s), 1 vote total
2. GAU Internal (member of the Earth Sciences GAU - departmental reader), 1 vote
3. GAU External (UNB Faculty member not in the Earth Sciences GAU), 1 vote
4. One other member of the SGS, 1 vote
5. University External, 1 vote

Members of the Examining Board who were involved in the supervision of the candidate must constitute a minority of the Examining Board. The Dean of Graduate Studies will nominate the Chair of the Examining Board, who shall not be a member of the candidate's GAU.

#### **D) MSc Examination and Defence**

Upon approval of the motion regarding the thesis and appointment of the Examining Board, by simple majority of the GAU, complete copies of the thesis are forwarded to each member of the Examining Board. Unless alternative arrangements are agreed by the student and Examining Board in advance, the Board should read the thesis and agree on the course of action within two weeks of receiving the thesis. The Examining Board will recommend one of three courses of action:

- (i) acceptable with minor/no revision: the thesis is ready to proceed to oral examination — any revisions must still be undertaken before the necessary forms are signed and forwarded.
- (ii) acceptable after significant revision: the thesis is returned to the student for correction. After revision, the thesis is re-reviewed by the Examining Board who must then recommend one of the other two courses of action.
- (iii) not acceptable: the thesis is rejected.

When action (i) is recommended, the Examining Board, student, and DOGS will agree on a date for the oral examination. In order that the student can prepare, and the public be notified, this date will not be less than 5 working days after action (i) is recommended. The oral examination is chaired by the DOGS or his/her designate and is open to the whole academic community and public. The candidate is required to present a brief (20–30 minute) account of their research. Two rounds of questions are permitted from each member of the Examining Board (10–15 minutes per examiner each round). The general audience will then be allowed to ask questions (no more than 10 minutes total). Following the session, the Examining Board meets and evaluates the oral presentation and defence of the thesis. If the candidate is successful, the necessary forms are signed and forwarded, together with the corrected thesis, to the Dean of Graduate Studies.

#### **E) PhD Thesis Examination and Defence**

Upon approval of the motion regarding the thesis and the appointment of the Examining Board, by simple majority of the GAU, a letter from the DOGS is sent to the School of Graduate Studies along with the appropriate number of complete copies of the thesis. The letter will contain the suggested names of the Examining Board Members along with a suggested name of an External Examiner. Note that the thesis must be received by the Dean of Graduate Studies two and one-half months before the expected date of conferral of the degree.

Unless alternative arrangements are agreed by the student and Examining Board in advance, the Board should read the thesis and agree on the course of action, initially within one month of receiving the thesis. The Examining Board will recommend one of three courses of action:

(i) "capable of being defended", i.e., acceptable with minor/no revision: the thesis is ready to proceed to oral examination — any revisions must still be undertaken before the necessary forms are signed and forwarded.

(ii) acceptable after significant revision: the thesis is returned to the student for correction. After revision, the thesis is re-reviewed by the Examining Board who must then recommend one of the other two courses of action.

(iii) not acceptable: the thesis is rejected.

If the Board, upon examining the dissertation, finds it "capable of being defended", the SGS will proceed to schedule an oral examination of the candidate.

When action (i) is recommended, the Examining Board, student, and the Dean of Graduate Studies or his/her designate will agree on a date for the oral examination. In order that the student can prepare, and the public be notified, this date will not be less than 5 working days after action (i) is recommended. The oral examination is chaired by the Dean of Graduate Studies or his/her designate and is open to the whole academic community and the public. The candidate is required to present a brief (30–40 minute) account of their research. Two rounds of questions are permitted from each member of the Examining Board (10–15 minutes per examiner each round). The general audience will then be allowed to ask questions (no more than 10 minutes total). Following the session, the Examining Board meets and evaluates the oral presentation and defence of the thesis. If the candidate is successful, the necessary forms are signed and forwarded, together with the corrected thesis, to the Dean of Graduate Studies.

Also see: "PROCEDURES FOR THE SUBMISSION AND ASSESSMENT OF DOCTORAL DISSERTATIONS" available on the SGS webpage.

## **12. Scholarships And Awards**

The following are in addition to the awards outlined in Article 03B. For additional awards open to all graduate students, see the SGS website.

### **A) Wright Scholarship**

Graduate students in the Earth Sciences at the Fredericton campus are eligible for the Dr. W.J. Wright scholarship, given to two students annually on the basis of academic merit and achievement. Each award comprises \$2,000. One award is given in each of two competitions. Graduate students are eligible to apply in the early winter (Jan. 15th) and late spring (May 15th). No student can be awarded more than one Wright scholarship. Applications are reviewed and awarded by the GAC in their first meeting following the competition deadlines. See the UNB Earth Sciences website for details.

### **B) Governor General Award**

This award is presented at convocations to the best PhD thesis completed in the SGS every year. Students are initially nominated by their supervisor(s). The GAC will then review applications and vote on the best candidate to forward to the Dean of Science for consideration as the Faculty of Science's nomination. See the SGS website for details.

### **C) NSERC PGS Scholarships**

Student applications are initially submitted to the DOGS (typically by mid-October) who will then, in conjunction with the GAC, rank all applications. This ranking is then forwarded to the SGS for further review by assigned committees.

**D) Larry Mayer Prize**

Awarded to a graduate student on the Fredericton campus making an outstanding contribution to ocean mapping and/or marine/lacustrine/fluvial geoscience. Applications not required. Prize candidates will be nominated annually by members of the Department of Geodesy and Geomatics Engineering and the Department of Earth Science with the award normally alternating between the two departments.

## APPENDIX I: SUBMISSION STANDARDS FOR A GRADUATE PRÉCIS OR THESIS

All graduate students in Earth Sciences are required to register for GEOL/ESCI6000 (Précis) and, depending on the program to which they have been admitted, either GEOL/ESCI6997 (Master's Thesis) or GEOL/ESCI6998 (PhD Thesis). The précis will be examined and marked equally by (i) the GEOL/ESCI6000 course supervisor and (ii) the student's supervisor(s). The thesis will be examined by, at least, the Advisory Committee, departmental reader, and an external reader.

As well as any requirements placed on the précis and thesis by the School of Graduate Studies, the Department of Earth Sciences additionally requires the following as standard.

### 1. Deadline

A graduate précis has a hand-in deadline. Making the deadline is an important requirement for the course, and late submission will be seriously penalized. Therefore, expect printing/transportation failures, bad weather, personal injury, or sickness, etc., to happen around the deadline, so plan ahead and aim to be finished well before the deadline, because the above examples will not be accepted as excuses. Penalty for late submission: 0.5–24 hours, and each successive 24 hour period = 1/3 grade deduction (e.g., "A+" reduced to "A" if one day late, "A-" after two days, "B+" after 3 days).

### 2. Page set-up

Reports must be printed (not hand-written) on plain 11 x 8 paper, single sided. Text must be in black ink, double spaced, 12 point Times New Roman (or equivalent) and with a 4 cm left hand margin, and 2.5 cm margin on other sides.

*Note: a précis or thesis not presented in the above style will be rejected. Also, for each and any of items 3 to 7 below, a précis may have the mark downgraded by 1/3 grade where directions are not followed. A thesis may, on the first occasion, be returned for correction and subsequently be rejected.*

### 3. Order of presentation and pagination

Reports should be presented in the following order. Any of the sections listed below must start on a new page. Typed pagination must also be included on all except the title page and sleeved inserts.

- Title Page (with authorship, reason e.g., Term Report for Dr Smith, date).
- Dedication\*^
- Abstract\*
- Acknowledgements\*^
- Table of Contents\*^
- List of Tables\*^
- List of Figures\*^
- List of Abbreviations\*^
- Chapter 1 (starting at page 1)
- Chapter 2 (etc. - start each chapter on a new page)
- (List of) References
- Plates^
- Appendices^
- Curriculum Vitae^

(\*paginate consecutively in roman numerals, starting with pageii for the dedication or abstract)  
(^ if required - not necessary for a précis.)

Also consult: "REGULATIONS AND GUIDELINES FOR THE PREPARATION AND SUBMISSION OF GRADUATE MASTER'S THESES PhD DISSERTATIONS AND REPORTS" available on the SGS webpage.

Chapters may be subdivided into sections, or sub-chapters, using appropriate headings and sub-headings that are consistent throughout the report (the font and size should remain the same, though differing use of "All Capitals", "Small Capitals", "Bold", "Italics", centre and left justification is encouraged). Such subdivisions should only start on a new page if the length of text on the preceding page prevents a new heading from being placed on that page. In other words, a large area of white space at the bottom of a page signifies the expectation of a new chapter on the next page.

All figures and tables should be inserted, in order, into the text either (1) on the page after which they are first referred to (preferred) or (2) at the end of the chapter in which they are first referred (see also comments on general formatting). Avoid having manuscript text (other than the caption) on a page containing a figure or table. Also note that any method of incorporating figures into Microsoft Word text may cause large areas of "white space" to precede or follow the figure. Make sure such problems are resolved before submission.

### 4. General formatting

Manuscripts must be consistently formatted. For a précis, follow the style used by Canadian Journal of Earth Science (CJES). For a thesis, use the formatting style used by CJES or other international journal relevant to the research subdiscipline. Only one formatting style must be used in a standard thesis. For graduate theses submitted in the "collected papers" format, papers published in different journals may have had different formatting styles (and potentially language, codes, punctuation, abbreviation styles — see below, items 4.1 to 4.4 and 5 to 7). Retaining these different styles between different publications in "collected papers" is permissible where no confusion may arise.

**4.1. Headings and subheadings:** Ensure that a consistent font style is used for each order of heading, and that the same line spacing is used. More important headings should be emphasized by central alignment, bold font, and or capitalization. Headings (chapters) and subheadings should be sequentially and consistently numbered for the whole text (including for "collected papers" theses).

**4.2. Figures, Tables, & Plates:** Each figure and table must be given a short title and, or, a short explanatory caption. Each figure and table must be numbered and presented consecutively (i.e., Figure 1.1 must be referenced in the main text first, then Figure 1.2, etc.) — this includes for "collected papers" theses. Figures and tables must not be 'embedded' in the text, and caption text should not wrap around such: put figures and tables on a separate 8 x 11 page. Figures and plates must show axes labelled or scales provided. Important features should be annotated/labelled and referred to in the caption. Where appropriate, sample location or sample depth must be included in the title.

**4.3. References in the text:** All references referred to in the text, captions, and appendices must be included in your list of References. All references must follow the same style, for example (Ash, 1967; Ash and Birch, 1965, 1967; Ash and Wood, 1964a, b; Birch 1970; Birch and Wood, 1970; Birch et al., 1970). When citing a personal communication, note the person's name with initials, use the abbreviation pers. comm., and note the year; e.g., A.B. Smith (pers. comm., 2001), or (A.B. Smith, pers. comm., 2001).

NOTE: For "collected papers" theses, a change in style between chapters may lead to confusion as to the reference origin. For example, Smith and Brown 1970a might be the same paper as referred to in other chapters as Smith and Brown 1970, Smith and Brown 1970b, and Smith et al. 1970. Such confusion should be avoided.

**4.4. Reference list:** All listed references must be referred to in the main text, or in Figures, Tables, Plates, or Appendices. All references must be presented alphabetically. The typical standard is that where there is more than one reference by the same (group of) author(s), present the chronologically oldest first. For two references from the same year by the same authorship, denote the first referenced in the text as "a", then "b" (etc.). Each reference must be written out in full (no abbreviations), providing, in order, authors (surname then initials), date of publication, title of paper (or book), publication details, and pages. Publication details will vary, for example: for a research article, state the journal and volume number; for a paper in an edited volume, state the editors, then the title of the volume; for a book, state the publisher and their location). However, be consistent in format throughout (e.g., if you put a full stop after the date in one reference, it should be a full stop in all references; if you put a comma after each author in one reference, commas should be after every author in every reference).

## 5. Language

Canadian English or the Queen's (British) English, or US English spellings, but do **not** mix. Note: -ize is **not** an Americanization!

## 6. Codes and Units

The use and spelling of certain units, names, and phrases are dictated by convention.

**6.1. International Union of Pure and Applied Chemistry:** Internationally agreed scientific spellings include aluminium (aluminum is accepted) and sulfur (not sulphur).

**6.2. North American Stratigraphic Code:** Any stratigraphic work undertaken in North America (or typically published on this continent — including a précis or thesis) is obligated to follow the code. Thus, the prefix Paleo-, (not Palaeo-), e.g., Paleogene, should be used. The terms Tertiary and Vendian are currently considered obsolete. See [www.stratigraphy.org](http://www.stratigraphy.org)

A single Formation or Group name, and formalized chronostratigraphic units must have initial capitals (e.g., Hopewell Group, Upper Jurassic, Early Cretaceous). For formalized units, "Group" and "Formation" may be abbreviated to Gp [no stop/period] and Fm. [include the stop], but the Gp, Fm. etc. must not be omitted. When referring to more than one unit (e.g., Mabou and Cumberland groups), or an approximate time or stratigraphic interval (e.g., deposits in the upper Jurassic), the units are not capitalized. Where referring to a specific lithostratigraphic unit without using the formal qualifier, the capital letter should be used (e.g., "The Mabou Group is predominantly red." "This [Mabou inferred] Group is predominantly red.").

**6.3. Other formalized names:** Geographical features formally identified on topographic maps should be capitalized (e.g., Caledonia Mountains). Similarly, formally defined (in earth-science literature) geological features should normally be capitalized (e.g., "The Moncton Basin is 50 km wide", and "This [Moncton inferred] Basin is 50 km wide."). Note, however, some journals do not capitalize "basin". The important thing is to be consistent throughout (including in "collected papers"), to avoid confusion.

**6.4. S.I. Units:** Measurements should be in SI units. Imperial, and other, unit equivalents may be given in parentheses, but this is not obligatory. SI units should be referred to by symbol in the text (note that Å and µ are not SI units; use nm and µm), be in the correct case (e.g., metres or kilometres would be in lower case, Newtons in upper case), must *not* be followed by a period (except at the end of a sentence), and a space must separate the number and abbreviation, e.g., 5 km or 5 m.

## 7. Other errors: abbreviations, foreign words, formal names, punctuation marks etc.

Even the best writers and editors make, overlook, or simply miss, mistakes. However, the number of mistakes indicates the amount of care a student has taken in preparing the submission. If a reader sees that you have taken such care with



your writing, that person is more inclined to think you have taken a similar amount of care with your research and is less likely to be on the look out for scientific error. For some terms, values, etc., there are no formal conventions and so consistency would be important (e.g., latitude & longitude: if giving a co-ordinate in one style, such as without any spaces (48°15'23"N), that style should always be used).

Foreign words and specific reference to fossil genera and species names should be italicized, e.g., *in situ*, *Cruziana problematica*. Note that abbreviated foreign words are not italicized, e.g., *et alia* shortens to et al., *circa* shortens to ca. or c. (note *circa* only refers to an approximate date and should not be used for an approximate size, or location, etc.).

Words used in a formal sense (i.e., as names previously defined by earlier workers, by certain codes (see above), or after definition by yourself) should be consistently capitalized.

When referring to a specific Figure included in your report, it should be written out in full (as in this example) when in the main text, and in the accompanying caption (that should never be omitted). It may be abbreviated (e.g., Fig. 1) when used in brackets. Note the difference between parts of a figure (e.g., Fig. 1A, B) and several figures being referenced (e.g., Figs. 2, 3A). Again, a few journal styles may differ - being consistent is most important.

If you wish to put a comma after e.g., then consistently do so throughout, as well as after i.e., for example. This consistency must also extend to include example references, for example: "(e.g., Smith and Brown, 1970; Brown, 1971)".

A dash is a punctuation mark, and should not be confused with a hyphen. The en dash (–) and em dash (—) symbols can be found in MS Word under Insert...and Symbol...and then Special Characters. These were originally the widths of typeset letters N and M; the em dash is twice the width of the en dash. Alternatively, for the en dash, use CTRL and hyphen on number pad.

An en dash (not a hyphen) is used to indicate a closed range, or a connection between two things. When used to indicate a range the equivalent meaning is the word "to", and should be typed leaving no space before or after, for example: Winnipegosis Formation–Prairie Evaporite transition, Cambrian–Ordovician [but Cambro-Ordovician], 24–45 km [meaning 24 to 45 km], Twps. 24–29, Ranges 3–6W5, west–east [not north-northeast when meaning the bearing between north and northeast], A–A' [in a line of section]. Also use for negative or minus signs, e.g., –45°C (with no spaces).

An em dash (item 11 on the following page) is used to indicate a sudden break in thought, for example when inserting a parenthetical statement, and should have a space before and after.

Punctuation should be grammatically and stylistically correct. On the next page is a quick summary taken directly from the Oxford Dictionary of Current English.

## 8. General Guidelines (The following are suggestions, not requirements)

**8.1. Chapter content:** The first chapter of a thesis should typically describe the purpose of the manuscript (why was it done). Background information is usually also presented here (e.g., brief summary of previous work on the research subject, location of research, general structural setting, general lithostratigraphy). Any methods may be summarized here or in Chapter 2. The main body of a thesis, covering several chapters, should first present your primary observations (or experiments) followed by any trends that are apparent (nothing interpretive at this stage). Separately, and subsequently, you should then provide your interpretations that explain your observations and any trends. You should incorporate into your discussion the relative strengths and weaknesses of interpretations and models presented by other authors (if appropriate). Briefly (when appropriate), point out any limitations, or outstanding problems with your interpretations, and outline future work that may address such issues. Finally, summarize your work (typically number or 'bullet' your main points).

**8.2. Abstract:** This should be written last, almost as a summary of your summary (without bullets). The abstract is a summary of the essential qualities of the paper (see Landes, K.L. 1951. A scrutiny of the abstract. American Association of Petroleum Geologists Bulletin, v. 35, no. 8, p. 1660).

**8.3. Appendices:** Appendices should be used for the tabulation of large amounts of raw data, detailed (as opposed to summary) sedimentary logs or graphs.

**8.4. Figures and Plates:** Consider grouping series of photos together on to one 'plate' that is then printed on better quality paper. Make sure that the figures and plates are not 'swamped' with text - if they are, consider repeating the same base figure with different features highlighted. Plates can be included together after the reference list.

**8.5. Writing style:** A clear and concise writing style is advantageous for speedy approval and examination of a thesis, or for a top mark in a précis. Try to avoid **periphrasis** (stating things in a roundabout way), for example: "*The sample was made available for analysis by...*" can be shortened to "*The sample was analyzed by...*" The periphrastic style often involves use of abstract nouns such as: *basis*, *case*, *character*, *description*, *framework*, or compound prepositions such as *with reference to*, *with regard to*. Related is **abstractitis** where an abstract word is the subject of the sentence, for example: "*A cessation of dredging took place after...*" rather than "*Dredging stopped after...*"

Conversely, the quest for brevity can produce ambiguous terminology and the over-use of hyphens, or noun-adjectives. For example, stating that there is a "*large vehicle fleet*" confuses the reader. Does the writer mean a large fleet of vehicles, or a fleet of large vehicles (i.e., a large-vehicle fleet)? Similarly, there is often a temptation not to explain or review an observation or result. Clearly, this should be avoided! (But is this underlined example obvious or clear to you, the student, without the following explanation? The use of *clearly* or *obviously* is an indication that the writer cannot be bothered or is unable to explain her/his reasoning, and the writer is trying to hide behind an inference that the reader must be stupid not to already know. A reader should be treated with more respect.)

Next page: Summary of punctuation (taken directly from the Oxford Dictionary of Current English).

### 1. Comma (,)

This is used:

- 1.1 To separate main clauses when the second is not closely identified with the first, e.g. *Cars will turn here, and coaches will go straight on.*
- 1.2 To avoid momentary misunderstanding, e.g. *In the valley below, the villages looked very small.*
- 1.3 In a sentence which would mean something different without the comma, e.g. *He did not go to church, because he was playing golf.*
- 1.4 Between adjectives qualifying a noun, except when the last adjective is more closely related to the noun, e.g. *a cautious, eloquent man but a distinguished foreign author.*
- 1.5 To separate items in a list of more than two items, e.g. *potatoes, peas, and carrots.*
- 1.6 Before or after a salutation or vocative, e.g. *Come here, boy. Dear Sir. Thank you for your letter.*
- 1.7 To mark the beginning and end of a parenthetical word or phrase, e.g. *It appears, however, that they were wrong.*
- 1.8 Before a quotation, e.g. *I boldly cried out, 'Woe to this city!'*
- 1.9 In numbers of four or more figures, to separate each group of three consecutive figures, starting from the right, e.g. 10,135,785.

### 2. Semicolon (;)

This separates two or more clauses which are of more or less equal importance and are linked as a pair or series, e.g. *To err is human, to forgive, divine.*

### 3. Colon (:)

This is used:

- 3.1 To separate main clauses when there is a step forward from the first to the second, as from introduction to main theme, from cause to effect, or from premises to conclusion, e.g. *Country life is the natural life: it is there that you will find real friendship.*
- 3.2 To introduce a list of items (a dash should not be added), and after expressions such as *namely, for example, to resume, to sum up, the following.*
- 3.3 Before a quotation, e.g. *Then he wrote these words: 'I have named none to their disadvantage.'*

### 4. Period, Full Point, Full Stop (.)

This is used:

- 4.1 At the end of all sentences which are not questions or exclamations.
- 4.2 After many abbreviations and initials. If such a point closes a sentence, it also serves as the sentence's full point, e.g. ... cars etc. but (... cars etc.).

### 5. Question Mark (?)

This is used:

- 5.1 After any sentence which asks a question, but not after an indirect question, e.g. *What is it? but I asked what it was.*
- 5.2 Before a word etc. whose accuracy is doubted, e.g. *Julius Caesar, born ?100 BC.*

### 6. Exclamation Mark (!)

This is used after an exclamatory word, phrase, or sentence expressing absurdity, command, disgust, emotion, enthusiasm, pain, sorrow, a wish, or wonder.

### 7. Apostrophe (')

This is used:

- 7.1 To show the possessive case, e.g. *John's book.*
- 7.2 To show an omission, e.g. *John's angry.*
- 7.3 At the end of a quotation: see following section.

### 8. Quotation Marks

8.1 A quotation is normally preceded by a turned comma (') and followed by an apostrophe. Double marks are used for a quotation within a quotation. The apostrophe should come after any punctuation mark which is part of the quotation, but before any mark which is not, e.g. *He asked, 'Where are we?'* but *Did he say 'Here we are'?* Quotation marks are only used when the exact words of the original are quoted.

8.2 Quotation marks are used when citing titles of articles, series, chapters, essays, poems, and songs, but not for titles of books of the Bible.

8.3 They may be used to enclose slang and technical terms.

### 9. Parentheses ( )

These enclose:

- 9.1 Interpolations and remarks made by the writer of the text himself, e.g. *He is (as he always was) a rebel.*
- 9.2 An authority, definition, explanation, reference, or translation.
- 9.3 In a report of a speech, interruptions by the audience.
- 9.4 Reference letters or figures, e.g. (1), (a).

### 10. Square Brackets [ ]

These enclose material added by someone other than the author, often by way of explanation, e.g. *He [Johannes] fell down.*

### 11. Dash (—)

This is used:

- 11.1 Instead of the parentheses in 9.1 above.
- 11.2 Instead of the colon in 3.1 above.
- 11.3 To indicate pauses in hesitant speech, or the ending and resumption of a sentence interrupted by another speaker.
- 11.4 To replace an omitted word.

### 12. Hyphen (-)

This is used:

- 12.1 In compounds used attributively, e.g. *He is a well-known man but The man is well known.*
- 12.2 In compounds formed from words which have a syntactical relationship, e.g. *weight-carrying, punch-drunk.*
- 12.3 To join a prefix to a proper name, e.g. *anti-Darwinian.*
- 12.4 To prevent misconceptions by linking words, e.g. *twenty-odd people.*
- 12.5 To prevent misconceptions by separating a prefix from the main word, e.g. *One player resigned, but later he re-signed.*
- 12.6 To separate letters representing similar sounds, e.g. *sword-dance, radio-isotope.*
- 12.7 To represent a common second element in all but the last word of a list, e.g. *two-, three-, or fourfold.*
- 12.8 At the end of a line in printing, to indicate that the last word has been divided.

### 13. Ellipsis, Marks of Omission (...)

These are used to show an omission. If the omission follows a complete sentence, the three points are preceded by the full point of the sentence, but if it follows an incomplete sentence a fourth point should not be added.

**APPENDIX II (next page): LETTER OF OFFER/OFFER OF FINANCIAL ASSISTANCE**

DATE: *day/mon/year*

*Student Name*  
*Address line 1*  
*Address line 2*  
*City, Province, Post Code*

Dear *Student name*:

**OFFER OF FINANCIAL ASSISTANCE TO:**

- ☐ **CANADIAN STUDENTS/LANDED IMMIGRANTS**
- ☐ **INTERNATIONAL STUDENTS**

An offer of financial assistance to help enable you to pay appropriate fees and to undertake postgraduate studies (*Degree* in Earth Sciences under the supervision of *Faculty supervisor(s)*) at the University of New Brunswick (UNB) is hereby made to you as follows:

**1. Conditions:**

This offer is subject to

- ☐ **i)** you receiving a certificate of acceptance to the School of Graduate Studies (SGS), and, or,
- ☐ **ii)** you register as a student with the SGS on or before *day/mon/year*, and, or,
- ☐ **iii)** your first *six months/one-year* of study is undertaken in a probationary capacity.

**2. Financial Assistance:**

- ☐ **i)** The SGS will make a contribution in the form of a Graduate Research Award (GRA) and, for international students in the PhD program only, a UNB International Differential Award (IDA) that covers the foreign-student differential tuition fee, so that the tuition fees paid are comparable to Canadian students. Students may also supplement their income by applying for Graduate Teaching Assistantships (GTAs), which provide you with up to 10 hours per week of valuable teaching experience and assist the University in meeting its laboratory teaching requirements. A student may also apply for other academic awards available to graduate students at UNB. However, there is no guaranteed amount of financial assistance and the student is expected to pay the balance of fees and living expenses from her/his own sources (e.g., NSERC PGS).
- ☐ **ii)** The total amount of financial assistance is *\$nn,nnn* per annum. This money is administered as a Graduate Academic Assistantship (GAA) by *Faculty Supervisor(s)*, but may also include contributions in the form of a GRA and, for international students in the PhD program only, an IDA.
  - ☐ **a)** The total above is also inclusive of any GTA salary. It is required that you apply for GTAs in the Fall and Winter terms as a condition of receiving the total amount. (Note: if you are then unsuccessful in your applications, the aforementioned total amount is still guaranteed).
  - ☐ **b)** The total above is exclusive of GTAs. Students may still apply for GTAs to further supplement their income but should first consult with their supervisor as to the potential impact on the research schedule.

Students may also have their income supplemented by their own external awards (e.g., NSERC PGS), and by applying for other academic awards available to graduate students at UNB.

Note: fees can be paid in full upon arrival, or deducted from your financial assistance. For fee information contact the Financial Services Department or go to their website.

cont...../2

### 3. Initial Remuneration Period and Renewal

Any amount detailed above will be paid during the period from *day/mon/year* to *day/mon/year*, prorated over the period stated, paid bi-weekly by direct deposit. Subject to satisfactory performance by the student, and continued availability of GAA funds, the financial assistance is normally renewed for subsequent periods. The GAA funding is normally renewed for a total of 2 years of funding in the case of a Masters degree, and 4 years for a Ph.D. degree. For performance requirements, see the Graduate Handbook available from the Department of Earth Sciences' website.

### 4. Study Permit (International Students only)

No payments can be made to students who do not hold a Study Permit at the time of their arrival in Canada. It is essential, therefore, that you apply to your nearest Canadian Consulate for such a permit as soon as possible. This letter should be shown to the appropriate persons at the Consulate.

### 5. Acceptance of this Offer

A letter of acceptance of this offer must be received from you by *day/mon/year*. If no reply is received by this date, it will be necessary to cancel the offer of financial assistance. Your letter of acceptance should be addressed to the Director of Graduate Studies in the Graduate Academic Unit shown below.

---

(Signature)

***Faculty supervisor***

---

(Signature)

***Faculty representative*** (Director of Graduate Studies)

GRADUATE ACADEMIC UNIT: Earth Sciences

---

Approval (for international students)

***Dean or Associate Dean of the School of Graduate Studies***

xc: School of Graduate Studies

**APPENDIX III (next page): CALENDAR OF STUDENT PROGRESS**

**An editable version of the calendar, as an MS Excel spreadsheet is available on the Earth Sciences website**



**APPENDIX IV (next page): PROGRAM OF STUDY FORM**



## DEPT. OF EARTH SCIENCES: GRADUATE PROGRAM OF STUDY FORM

**Student name:** \_\_\_\_\_ **Start date (yy/mm/dd):** \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**Degree sought:** MSc Earth Sciences      PhD Earth Sciences

**Status:** Full Time      Part Time

**Program**

ES Qualifying Period      ES Probationary Period      ES Standard      Joint Degree

**Supervisor(s):** \_\_\_\_\_

**Other Advisory**

**Committee Members:** \_\_\_\_\_

**Background studies**

Most recent degree (major/hons/etc., subject, awarding institution, date): \_\_\_\_\_

Courses already taken most relevant to the proposed program of study (include 4 ESCI courses, if taken): \_\_\_\_\_

Additional undergraduate courses to be taken, if any (at least 4 per term if in "Qualifying Period". Any Advisory Committee may require relevant courses to be taken)

Course code	Course name	Term taken	Grade

**Graduate Courses**

Course code	Course name	Term taken	Grade
ESCI 6000	Précis		
ESCI 6 ____			
ESCI 6 ____			
ESCI 6 ____			

**Other Requirements**

(include proposed lab- &/or field-work schedule)

**Research Proposal Defense (yy/mm/dd):** \_\_\_\_\_

**Expected date of Graduation (year, spring/fall):** \_\_\_\_\_

**Signatures & dates**

Student	yy/mm/dd	Advisory Cttee. member	yy/mm/dd
Supervisor	yy/mm/dd	Advisory Cttee. member	yy/mm/dd
Supervisor	yy/mm/dd	DoGS	yy/mm/dd

*Students: Please submit copies of this form to the DoGS & Dept Grad Secretary within two months of starting your program, and provide an upgraded form (completed courses and grades) when submitting your departmental-display thesis*