



# **DEPARTMENT OF CIVIL ENGINEERING**

## **GRADUATE STUDENT HANDBOOK 2023 - 2024**

Revised September 8, 2023

## **DEPARTMENT OF CIVIL ENGINEERING**

### **Mission Statement**

Our mission is to meet the needs of our changing society by educating tomorrow's civil engineers and by advancing knowledge in Civil Engineering. The Department of Civil Engineering strives to:

- provide quality education incorporating elements of planning, analysis, design, management, and communications;
- prepare students to accept professional engineering responsibilities;
- foster a graduate studies and research program reflecting regional, national, and international quality and recognition;
- develop active partnerships with industry and government contributing to economic development and other requirements of our changing society;
- instill a sense of responsibility toward society and the environment;
- attract and educate students with a sense of the global community; and
- maintain a positive working and learning environment through supportive respect for diversity.

(Approved at Departmental Meeting of May 21, 2002)

## Preface

Welcome to Graduate Studies in Civil Engineering at the University of New Brunswick. Engineering studies were introduced to Canada at this university in 1854 and our engineering programs since that time have expanded and evolved to meet the changing needs of society. As a graduate student, you are invited to share in our tradition and our mission of engineering education and research.

This document has been prepared by the Graduate Academic Unit (GAU) of Civil Engineering and contains a variety of information that will assist you in pursuing your studies. Information in this document is meant to provide assistance by outlining some University policies and procedures that you will be interested in as graduate students. The document does not supersede or take precedence over any academic or other regulation of the School of Graduate Studies or the University of New Brunswick.

Students are specifically directed to consult the School of Graduate Studies (SGS) General Regulations at <https://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/regulations/index.html>. Please familiarize yourselves with the topics presented there.

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|---|--|
| 1. Terms and Definitions                  | 11. Petition for Relief from Grade Related Regulations |
| 2. Degrees and Diplomas Offered           | 12. Repeating Courses                                  |
| 3. Application Procedures                 | 13. Academic Appeals                                   |
| 4. Admissions                             | 14. Petition for Relief - General                      |
| 5. Registration Process and Regulations   | 15. Academic Offences                                  |
| 6. Postgraduate Degree Regulations        | 16. Senate Review                                      |
| 7. Regulations for Research Based Degrees | 17. General Regulations on Conduct                     |
| 8. Master's Degree Regulations            | 18. Confidentiality, Security and Release of Records   |
| 9. PhD Regulations                        |  |
| 10. Review of Grades                      |  |

The Graduate Calendar can be accessed at <http://www.unb.ca/academics/calendar/graduate/current/>, while general information about graduate studies can be accessed at the SGS Website <http://www.unb.ca/gradstudies/>.

If you have any questions, please do not hesitate to contact me or the Graduate Studies Program Assistant in the Civil Engineering Office.

Kaveh Arjomandi, PhD, PEng  
Director of Graduate Studies

## TABLE OF CONTENTS

1. The Civil Engineering Graduate Academic Unit.....	3
2. Programs of Study .....	3
2.1 Master of Engineering (MEng).....	3
2.2 Master of Science in Engineering (MScE) .....	3
2.3 Doctor of Philosophy (PhD).....	4
2.4 Procedure for Transfer from MScE to PhD .....	4
2.5 Full-Time Studies .....	4
2.6 Part-Time Studies.....	5
2.7 Summary of Degree Requirements.....	5
3. Fields of Study.....	6
4. Faculty Members of the Graduate Academic Unit (GAU).....	7
5. Graduate Student Supervision .....	8
6. Program Advice .....	8
6.1 Program Duration and Progression .....	8
6.2 Graduate Studies Co-op Work Term .....	8
6.3 Student-Supervisor Checklist.....	8
6.4 Annual Progress Report.....	8
6.5 Program Deadlines.....	9
6.6 MScE Thesis Proposal .....	9
6.7 PhD Comprehensive Examination Guidelines .....	9
7. Graduate Student Teaching Apprenticeship Program (GSTAP).....	9
8. Courses.....	9
8.1 Registration for Courses .....	9
8.2 Courses Commonly Offered .....	11
8.3 Credit Units for Undergraduate Courses .....	12
8.4 Association of Professional Engineers and Geoscientists of New Brunswick .....	12
8.5 Special Studies.....	12
9. Sources of Funding.....	13
10. Study Space Allocation .....	14
11. Report/Thesis/Dissertations .....	14
11.1 Specifications for Writing Reports/ Theses/Dissertations.....	14
11.2 Acceptance of Thesis/Report/Dissertation .....	15
11.2.1 Graduate Academic Unit (GAU) Review of MEng Report/MScE Thesis/PhD Dissertation...	15
11.2.2 University (SGS) Review of MScE Thesis/PhD Dissertation.....	16
11.2.3 Examination Process for MEng Report .....	16
11.2.4 Examination Process for MScE Thesis.....	17
11.2.5 Examination Process for PhD Dissertation .....	18
11.3 Report Presentation/Oral Defence of Thesis or Dissertation .....	19
12. Completion Process .....	20
12.1 Master of Engineering (MEng).....	20
12.2 Master of Science in Engineering (MScE) .....	20
12.3 PhD Candidates .....	21
13. Photocopying .....	22
14. Safety and Security in the Civil Engineering Labs .....	22
14.1 Lab Operation and Safety .....	22
14.2 Working After Hours .....	23
14.3 Laboratory Security .....	23
15. General Department and University Policies.....	24
15.1 CE Office Access.....	24

15.2	Use of University Owned Computers .....	24
15.3	Scent Free Policy .....	24
15.4	Fire Safety	24
15.5	UNB Smoking Policy .....	25
15.6	UNB Declaration of Rights and Responsibilities .....	25
16.	Accommodations .....	25
17.	The International Student Advisor's Office .....	25
18.	Graduate Student Fee Schedule.....	26
19.	Graduate Student Wellbeing .....	26
20.	Association of Civil Engineering Graduate Students (ACEGS) .....	27
	Appendix A: Academic Dates 2018 - 2019 .....	28
	Appendix B: PhD Comprehensive Examination Guidelines.....	29
	Appendix C: MScE Written Thesis Proposal (Format and Content) .....	33
	Appendix D: Graduate Student Teaching Apprentice Program (GSTAP) in Civil Engineering .....	34
	Appendix E: University (SGS) Master's and PhD Regulations .....	35
	E1. Master's Degree Regulations.....	35
	E2. PhD Degree Regulations .....	36
	Appendix F: Scholarships/Awards/Grants .....	38
	Appendix G: Waste Disposal and Storage Arrangements for Research form.....	39

## 1. The Civil Engineering Graduate Academic Unit

The Department of Civil Engineering is one of five departments in the Faculty of Engineering at the University of New Brunswick. The Department's registration is approximately 250 to 300 undergraduate students and approximately 50 graduate students. The main office of the Department is in Room H-124 in the older section of Head Hall, Building 17. The administrative support staff is situated in that office and the Chair of the Department is in the adjacent office, Room H-126B. The classes, laboratories, and offices of faculty members are located throughout Head and Gillin Halls.

The Graduate Academic Unit (GAU) exists within and as part of the Department of Civil Engineering. Specific inquiries regarding graduate studies can normally be directed towards the Director of Graduate Studies, or the Graduate Studies Program Assistant, who is responsible for many administrative functions of the graduate studies program.

## 2. Programs of Study

The Graduate Academic Unit (GAU) of Civil Engineering offers programs of study leading to the degrees of Master of Engineering (MEng), Master of Science in Engineering (MScE), and Doctor of Philosophy (PhD) in Civil Engineering. The normal duration for the MEng or MScE program is 24 months. The normal duration for the PhD program is 36 to 48 months. The Department also offers non-degree diploma program in the area of transportation engineering.

### 2.1 Master of Engineering (MEng)

This program is primarily course based with a report on an acceptable project.

Candidates for the MEng degree must complete a minimum of 24 credit hours of course work (see calendar for credit hour allocation) and a report on a significant aspect of engineering in the area of specialization. The subject of the report must be approved by the GAU at least six months before the Encaenia or Convocation at which the candidate expects to receive the degree. The report must be based upon work done by the student under the supervision of a faculty member. The student is permitted to carry out this work at the place of employment provided that supervision is maintained by a faculty member. At least 60% of the approved course work must be in the area of specialization. The MEng has no residency requirement, but the minimum time requirement is one calendar year. Students must have a BScE in Civil Engineering or a related engineering degree to enter this program.

Note: due to the requirement of the completion of a report under the supervision of a faculty member, the MEng degree is considered to be a research-based degree as defined by the School of Graduate Studies.

### 2.2 Master of Science in Engineering (MScE)

The MScE degree is a research-oriented degree for which a thesis is a major requirement. The subject of the thesis must be approved by the GAU concerned at least six months before the Encaenia or Convocation at which the candidate expects to receive the degree. The master's thesis must demonstrate the candidate's competence to undertake independent research work. It must make a contribution to knowledge in the candidate's field of study. The thesis must show that the candidate is fully aware of the pertinent published material and it must be written in a satisfactory literary style. It should be free from typographical and other mechanical errors.

The program requires a minimum of 15 credit hours of course work (see calendar for credit hour allocation) and a minimum residency requirement of one academic year. At least 60% of the approved course work must be in the area of specialization. Each student, in conference with a faculty advisor, selects courses suited to the appropriate area(s) of specialization. Students whose undergraduate degree is in a field other than the intended graduate

program may be required to take additional courses as background material or as prerequisites. Students are encouraged to take suitable courses in mathematics and other relevant fields of engineering when possible.

The minimum time required for completion of the requirements for the master's degree shall be one calendar year of which the equivalent of one academic year must be spent in residence. Only full-time graduate students (with not more than three hours per week of teaching assistantship duties) are eligible to complete the requirements for the degree in this minimum time.

### 2.3 Doctor of Philosophy (PhD)

The PhD degree is a research degree for which a dissertation on original and significant research in the field of Civil Engineering is a major requirement. Candidates are normally required to have a prior graduate degree in engineering or applied science. To qualify for the PhD degree, a student must maintain a superior grade point average and obtain a passing grade on a Comprehensive Examination administered within the first 12 months. Acceptability and suitability are determined by the candidate's PhD Comprehensive Examination Committee.

A PhD candidate is normally required to take a minimum of 12 credit hours of approved course work. For candidates who have obtained a MScE degree from the GAU of Civil Engineering at UNB and who during that degree obtained more than the minimum 15 credit hours, consideration may be given to transferring credits toward the PhD degree requirements. Such transfer of credit hours will only be made with the approval of the candidate's supervisor(s), the Director of Graduate Studies, and the School of Graduate Studies.

The residency requirement for a student with a relevant bachelor's degree, is a minimum of 8 terms, 6 of which must be during the Fall and Winter terms. For a student with a relevant master's degree, the minimum residency requirement is 5 terms, 4 of which must be during the Fall and Winter terms.

Students who initially enroll in the MScE degree program, but later transfer to the PhD degree program without completion of the Master's degree, will be required to complete at least **27 credit hours** of course work. The Comprehensive Examination for students who transfer into the PhD program will normally be administered at the end of the first term as a PhD candidate.

### 2.4 Procedure for Transfer from MScE to PhD

Students who initially enroll in the MScE degree program must complete 12 months in the MScE program before a direct transfer to the PhD degree program can be requested. A transfer must be recommended by the student's supervisor to the Director of Graduate Studies, and the PhD research topic is to be indicated. Both the student and the supervisor will agree that the student will undertake a PhD Comprehensive Examination within four months of the transfer. Students who are permitted to transfer are required to do course work equivalent to the MScE degree, 15 ch, plus the PhD degree, 12 ch, for a minimum total of 27 ch of course work.

### 2.5 Full-Time Studies

Full-time students in a research based graduate program should be engaged primarily in research and course work associated with their program and may be engaged in paid employment on average of no more than 10 hours per week (520 hours over a 12-month period). Under exceptional circumstances, a student may be allowed to pursue on-campus employment beyond the 10 hour per week limit, but generally not exceeding 20 hours per week on average for each term, provided agreement is reached with the supervisor and endorsed using the form-fillable PDF for

permission to work extended hours on campus which is available at <https://www.unb.ca/gradstudies/current/financial/employment.html>.

A residency requirement also needs to be met for the MScE and PhD programs.

## 2.6 Part-Time Studies

Research requirements for the MScE and PhD programs normally demand full-time attendance at the University. Part-time students must indicate clearly what commitment in terms of time and effort will be made towards completion of their degree. This includes a program plan outlining a timeline for courses to be taken and research to be carried out. The research program to be followed must be defined clearly and the location where the research is to be conducted must be clearly stated. More specific details regarding conditions for a part-time PhD Degree can be found on the SGS website.

Part-time students may not register for more than two courses per term.

## 2.7 Summary of Degree Requirements

Requirements for the MEng, MScE and PhD degrees are summarized below.

	MEng	MScE	PhD
Normal duration	24 months	24 months	36 to 48 months
Degree requirements*	24 ch courses (60% in area of specialty) Report	15 ch courses (60% in area of specialty) Thesis	12 ch courses (60% in area of specialty) Dissertation
Residency requirement**	None	1 academic year (2 terms)	8 terms (6 in the Fall and Winter terms) with a relevant Bachelor's Degree 5 terms (4 in the Fall and Winter terms) with a relevant Master's Degree
Minimum full-time enrollment requirement	1 calendar year	1 calendar year	8 terms (6 in the Fall and Winter terms) with a relevant Bachelor's Degree 5 terms (4 in the Fall and Winter terms) with a relevant Master's Degree
Other requirements	BScE in Civil Engineering or related engineering degree	MScE Proposal completed within first nine (9) months	Comprehensive Exam completed within first year
Time limit ***	4 years (12 terms) or 5 years (15 terms) for part-time	4 years (12 terms) or 5 years (15 terms) for part-time	Seven years (21 terms)
Minimum Cumulative GPA****	3.0	3.0	3.0

\* A maximum of two courses taken as a no-degree may be transferred to a graduate program

\*\* Residency is defined as physical "on-site" presence on campus

\*\*\* Extensions may be granted under extenuating circumstances

\*\*\*\* A cumulative GPA less than 3.0 or grades with a D or F are considered unsatisfactory, and the student will normally be required to withdraw from the program or be placed on probation.

### 3. Fields of Study

Graduate studies are available in virtually all traditional areas of Civil Engineering including Structures, Geotechnical, Water and Environmental, Transportation, Pavements, Concrete and Materials, as well as Construction Engineering and Management.

Courses are made available depending on the needs of the students as well as the availability of faculty. Students are advised to monitor course availability and scheduling, as many graduate courses are not provided every year.

Research is conducted through a variety of groups that exist within the Department. There is frequent joint collaboration among faculty members within specific fields of specialization. Collaborative research across groups is also frequent and encouraged. Research groups and Chairs within Civil Engineering include:

- UNB Construction Engineering and Management Group
- UNB Geotechnical Group
- UNB Materials Group
- UNB Transportation Group
- UNB Structures Group
- UNB Water and Environmental Group
- Collision Investigation Team
- M. Patrick Gillin Chair in Construction Engineering and Management
- D. C. Campbell Chair in Highway Construction and Pavement Research
- OSCO Research Chair in Off-Site Construction

#### 4. Members of the Graduate Academic Unit (GAU)

Faculty	Discipline	Office	@unb.ca
Dr. Kaveh Arjomandi	Structures, Infrastructure Management <i>Director of Graduate Studies</i>	HC-6	kaveh.arjomandi
Dr. Trevor Hanson	Transportation <i>Coordinator, UNB Transportation Group</i>	GWD-106	thanson
Dr. Katy Haralampides	Environmental Hydraulics	GWD-125	katy
Dr. Eric D. Hildebrand	Transportation	GWD-102	edh
Dr. Zhen Lei	Construction Engineering & Management <i>OSCO Research Chair in Off-Site Construction</i>	H-226	zhen.lei
Dr. Alan Lloyd	Structures, Extreme Loads on Structures	H-227	alan.lloyd
Dr. Kerry T. MacQuarrie	Groundwater Hydrology; Mathematical Modeling	H-130	ktm
Dr. Othman Nasir	Geotechnical	HC-7	othman.nasir
Dr. Won-Taek Oh	Geotechnical	GWD-128	woh
Dr. Jeff H. Rankin	Construction Engineering & Management <i>Chair, Department of Civil Engineering</i> <i>M. Patrick Gillin Chair in Construction Engineering &amp; Management</i>	H-226	rankin
Dr. Xiomara Sanchez	Pavement, Transportation <i>D.C. Campbell Chair in Highway Construction &amp; Pavement Research</i>	GWD-127	xomara.sanchez
Dr. Kripa S. Singh	Environmental, Water & Wastewater Treatment	HB-6	singhk
Dr. Taylor Steele	Structural Engineering	HB-4	Taylor.steele
Dr. Bruce G. Wilson	Environmental, Solid Waste Management	GWD-128	wilsonbg
Dr. Yuri Yevdokimov	Transportation; Environmental Economics	Singer - 458	yuri

Honorary Research Professor	Discipline	Term	Office	@unb.ca
Dr. Peter Bischoff	Structures	Jul 2022 - 2025	HC-4	bischoff
Dr. Lloyd Waugh	Construction Engineering Management	Jul 2021 - 2024	H-134	waugh
Dr. Arun Valsangkar	Geotechnical & Geovironmental	Jul 2021 - 2024	HC-5	valsngkr
Dr. James Christie	Transportation	Jan 2021 - 2024	-	

Adjunct Faculty	Discipline	Term
Dr. Ashlee Hossack	Materials & Infrastructure Renewal	Jan 2021 - 2025
Dr. Benjamin McGuigan	Geotechnical	Sep 2022 - 2026
Dr. Anna Robak	Asset Management of Public Infrastructure	Jan 2023 - 2026
Dr. Sina Varamini	Pavements	Jan 2021 - 2025
Dr. Monica Wachowicz	Transportation (Big Data, Data Science and Mobility)	Jul 2021 - 2025
Dr. Edward Moffatt	Concrete Materials	Jul 2021 - 2025

Honorary Research Associate	Discipline	Term
Dr. Serban Danielescu	Groundwater	Jun 2022 - 2026
Martin Gordon	Asset Management of Public Infrastructure	Jun 2022 - 2026

## 5. Graduate Student Supervision

Each graduate student will have, or will be assigned, a supervisor or supervisors when accepted into the graduate studies program. Changes of supervision will occur only with the approval of the Director of Graduate Studies.

The supervisor will consult regularly with the student and provide advice related to program progress, course selection, and research. The following link provides useful guidelines for graduate student supervision

<https://www.unb.ca/gradstudies/current/resources/graduate-supervision-guidelines/index.html>

## 6. Program Advice

### 6.1 Program Duration and Progression

Master's degrees are normally expected to take two academic years to complete. PhD degrees should be expected to be completed within a three to four-year period of full time study. Students intending to do doctoral studies may also find it advantageous to proceed into a PhD program without the completion of the master's degree. Students must complete 12 months in the MScE before a transfer can be requested. These students will be expected to do course work equivalent to the Master's degree plus the PhD degree and to successfully undertake a PhD Comprehensive Examination within four months of the transfer.

### 6.2 Graduate Studies Co-op Work Term

Students enrolled in a graduate degree program have the option of completing a co-op work term relevant to their area of interest. It is the student's responsibility to identify a potential employer and placements should be related to the student's thesis work. Application is made through the Co-op Office after discussion with the supervisor.

### 6.3 Student-Supervisor Checklist

All incoming graduate students from Fall 2018 onwards are required to complete a Student-Supervisor Checklist with their supervisor. A completed and signed copy of the Checklist must be submitted to the SGS with, or before, submission of the student's first-year Annual Progress Report. Copies should also be retained by both parties. See [https://www.unb.ca/gradstudies/\\_assets/documents/student-supervisor-checklist.pdf](https://www.unb.ca/gradstudies/_assets/documents/student-supervisor-checklist.pdf) for the form.

The student and supervisor(s) are expected to review each item on the checklist together and to check each box and sign the form to confirm that they have done so. Each item should prompt reflection and discussion, so it may take several meetings to complete the checklist. The student and supervisor(s) are encouraged to document their discussions, particularly in matters such as Intellectual Property, or for other topics where a record of discussions and agreements could be important.

Questions about the applicability of specific items in the checklist should be directed to the Director of Graduate Studies, or the relevant Associate Dean in the SGS.

### 6.4 Annual Progress Report

All graduate students are required to complete a short annual progress report. This report is reviewed and commented on by the student's supervisor(s) and the Director of Graduate Studies. The completed progress report is then sent to the School of Graduate Studies. Completed progress reports for each academic year must be submitted to the Graduate Studies Program Assistant in the Civil Engineering Office on or before April 30<sup>th</sup> of each year.

## 6.5 Program Deadlines

Students are advised to monitor all deadlines with respect to the submission of work, theses, and reports. Deadlines published by the School of Graduate Studies for Encaenia and Convocation have been included in Appendix A. It is noted that these deadlines generally refer to the completed document after the oral defence has been conducted. The process of reading and correcting and evaluating a thesis can take several months and careful consideration of these deadlines must be maintained. **Travel and moving arrangements should not be made until the process is completed.**

Students completing their degree requirements (including the defence and submission of the final approved dissertation/thesis/report to SGS) before the end of the second month of each term (for example, Oct. 31 for the Fall Term) are eligible for remission (reimbursement) of one-half the applicable full-term tuition fees.

See <https://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/fee-regulations.html>.

## 6.6 MScE Thesis Proposal

All MScE candidates must submit an acceptable thesis proposal within nine (9) months of first registration (18 months for part-time). Students entering the Accelerated Master's Program are required to submit their proposal within four (4) months. The details concerning the proposal, including deadlines and suggested content, are given in Appendix C.

## 6.7 PhD Comprehensive Examination Guidelines

The format and timing associated with the PhD Comprehensive Examination is established by the Graduate Academic Unit (GAU). The GAU of Civil Engineering has the responsibility of ensuring that each PhD candidate has a good knowledge of their general area of research and of determining the competence of the candidate to carry out independent research for their proposed thesis topic. The detailed steps presented in Appendix B complement the general guidelines for the PhD Comprehensive Examination that appear in the Graduate Calendar. For students entering directly into the PhD program, the Comprehensive Examination will be administered within the first twelve months. For students transferring from the MScE into the PhD program, the Comprehensive Examination will normally be administered at the end of the first term as a PhD candidate.

## 7. Graduate Student Teaching Apprenticeship Program (GSTAP)

The GSTAP is an optional part of the PhD program in Civil Engineering, where the student apprentice works closely with a faculty mentor to deliver a course at the undergraduate level. Students entering the program are required to have completed the UNB Diploma in University Teaching (or equivalent) prior to teaching the course. Completion of the PhD Comprehensive exam is preferred.

Accepted students register in a non-credit course CE 6993 Teaching Apprenticeship with pass/fail. See Appendix D for full details on the GSTAP policy and application process.

## 8. Courses

### 8.1 Registration for Courses

Graduate students should register in the appropriate thesis or report course. New and returning students should then make arrangements to pay their fees with Financial Services. After paying or making arrangement to pay fees and on campus, new students will need to go to UCard located in the UNB Student Union Building

<http://www.unb.ca/aboutunb/map/?map=1> for their student identification card. Returning students can get their UNB Student Union ID card validated at the School of Graduate Studies or at Financial Services.

All students are encouraged to attend the CE Graduate Student meeting scheduled for each September and January. At this meeting the Director will present the courses offered during the related term. This meeting also includes a mandatory *Introduction to Safety* session that is required for all students carrying out research in a lab or working as a teaching assistant in a lab.

Please seek approval of course selection from your supervisor(s). You may then register for your courses using UNB's On-Line Registration system.

Information that is essential for registration:

- Student ID number
- PIN (*Personal Identification Number*)

Once you have registered on-line and activated your PIN, you may then claim your UNB computing account and your E-mail. **Please ensure your address and telephone number is current.**

You will need the proper course ID numbers for each course in which you wish to register. These course ID numbers are listed in the first column of the CE Graduate Program Timetable, next to their corresponding course number. Go to <https://www.unb.ca/academics/calendars.html> for a listing of courses.

You must register for the appropriate thesis or report course each term even if you have not yet commenced work on your thesis or report.

MEng Report	CE 6996	Fall, Winter & Summer Session
MScE Thesis	CE 6997	Fall, Winter & Summer Session
PhD Thesis	CE 6998	Fall, Winter & Summer Session

If a course is to be taken on an AUDIT basis, fill out a '*Course Change Form*' (see the CE Graduate Studies Program Assistant for these forms). Have the Instructor of the course sign where indicated, then return the form to the CE Graduate Studies Program Assistant, who will obtain the Director's signature and then forward the form to the School of Graduate Studies for review and approval by the Dean of Graduate Studies. It will then be forwarded to the Registrar's Office.

## 8.2 Courses Commonly Offered

*Note: Not all courses are available in any one year.*

Course #	Name	Instructor	# of credit hrs
CE 6043	Operational Modal Analysis	K. Arjomandi	3
CE 6053	Dynamics of Structures	A. Lloyd	3
CE 6063	Finite Element Analysis	K. Arjomandi	3
CE 6093	Random Vibrations	K. Arjomandi	3
CE 6103	Mechanics of Unsaturated Soils	W.T. Oh	3
CE 6183	Numerical Modeling in Geotechnical Engineering	W.T. Oh	3
CE 6203	Transportation Planning and Modeling	T.R. Hanson	3
CE 6212	Pavement Design	X. Sanchez	3
CE 6214	Transport Simulation	E. D. Hildebrand	1.5
CE 6222	Traffic Engineering	E. D. Hildebrand	3
CE 6223	Road Safety Engineering	E. D. Hildebrand	3
CE 6232	Transport Facility Design	E. D. Hildebrand   T.R. Hanson	3
CE 6234	Intelligent Transportation Systems	E. D. Hildebrand	1.5
CE 6241	Infrastructure Asset Management	X. Sanchez	3
CE 6281	Transportation Policy	T. R. Hanson	1.5
CE 6293	Transportation Seminar	E. D. Hildebrand   T.R. Hanson	3
CE 6413	Physical and Chemical Processes in Environmental Engineering	K. Singh	3
CE 6416	Industrial Wastewater Treatment	K. Singh	3
CE 6423	Biological Processes in Environmental Engineering	K. Singh	3
CE 6453	Water Resources Systems Analysis	B. Wilson	3
CE 6463	Solid Waste Management Systems	B. Wilson	3
CE 6483	Environmental Engineering	K. Singh	3
CE 6503	Concrete Materials	M. Thomas	3
CE 6513	Behaviour of Concrete Structures	P. Bischoff	3
CE 6523	Behaviour of Steel Structures	K. Arjomandi   A. Lloyd	3
CE 6533	Prestressed Concrete	P. Bischoff	3
CE 6563	Repair of Concrete Structures	M. Thomas	3
CE 6573	Advanced Concrete Materials	M. Thomas	3
CE 6583	Chemistry of Cement and Concrete	M. Thomas	3
CE 6593	Analytical Techniques for Cement and Concrete	M. Thomas	3
CE 6603	Construction: Work Improvement	L. Waugh	3
CE 6633	Construction: Scheduling	L. Waugh	1
CE 6643	Construction: Management	J. Rankin	3
CE 6653	Construction: Information Technology	L. Waugh   J. Rankin	3
CE 6693	Construction: Selected Topics	L. Waugh   J. Rankin	3
CE 6713	Advanced Hydraulics and Sediment Transport	K. Haralampides	3
CE 6763	Numerical Modelling of Groundwater Flow and Solute Transport	K. MacQuarrie	3
CE 6773	Contaminant Hydrogeology	K. MacQuarrie	3
CE 6921	<u>Special Studies</u>	<u>Faculty</u>	1.5
CE 6922	<u>Special Studies</u>	<u>Faculty</u>	3
CE 6923	<u>Special Studies</u>	<u>Faculty</u>	2
CE 6993	Teaching Apprenticeship	Faculty	cr
CE 6996	Master's Report	Director of Graduate Studies	cr
CE 6997	Master's Thesis	Director of Graduate Studies	cr
CE 6998	PhD Thesis	Director of Graduate Studies	cr

A full listing of courses is available from the UNB Graduate Calendar but not all courses are commonly offered.  
<https://www.unb.ca/academics/calendar/graduate/current/courses-fredericton-courses/civil-engineering-courses/index.html>

### 8.3 Credit Units for Undergraduate Courses

For approved undergraduate senior level courses (i.e. 4000 and 5000 level courses) taken by students in this GAU, the course unit is one less than the undergraduate credit hour value. Lower level undergraduate courses (i.e. 3000 and lower) are normally considered as background material or as prerequisites to higher level courses and would be additional to the minimum credit hours of course work required for the degree program.

The maximum number of credit hours in a student's graduate degree program that can be taken at the undergraduate level is: 9 credit hours for MEng, 6 credit hours for MScE, and 3 credit hours for PhD.

**Note:** Credit hours shown on transcripts reflect the credit hours in the undergraduate calendar, not the reduced credit hours that will be assigned for the graduate degree.

### 8.4 Association of Professional Engineers and Geoscientists of New Brunswick

Graduate Students who do not have a Bachelor of Science in Engineering degree will normally have to take a substantial number of extra courses to meet the requirement for membership in the Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB). These students should contact the Association of Professional Engineers and Geoscientists of New Brunswick for details. Courses taken for this purpose do not necessarily fall within the degree requirements and may be subject to fees beyond the normal graduate program fees.

### 8.5 Special Studies

In some circumstances, a Special Studies Course may be arranged between a student and faculty members with the supervisor's approval. The intent of this option is to provide the graduate student the opportunity to study a subject not typically included in standard course offerings. To initiate a special study of 1.5, 2 or 3 credit hours a proposal must be submitted to the Director of Graduate Studies. See the Graduate Program Assistant for a proposal form. As a guideline, a maximum of 6 credit hours of Special Studies can be taken at the Masters level.

## 9. Sources of Funding

There are two main sources of graduate student funding which can be described as awards and employment. These funds are allocated to some graduate students through the Department/GAU or a faculty member and involve the performance of research, teaching, or related tasks. These sources are described as follows:

### Awards

**GAA:** (*Graduate Academic Assistantship*) This award is a scholarship to support students in their program of study. They are allocated by the supervisors to the students and are raised by the supervisors from a variety of sources including NSERC, research grants and contracts. The GAA award is attached to the accomplishment of research in the area related to the graduate student's thesis. Students accepting GAA funding can therefore expect to conduct research consistent with the award requirements.

**GRA:** (*Graduate Research Assistantship*) This is funding made available by the GAU and is given for support of graduate research. This assistance is assigned by the supervisor in support of the student's thesis research activities.

GAA and GRA funds are only available to full-time graduate students. Graduate students receiving these funds must discuss the duties and timeline with their supervisor(s) and ensure to comply with the requirements.

A partial listing of other awards that a graduate student can pursue is provided in Appendix F. Scholarship students are also cautioned regarding accepting remuneration that might invalidate the terms under which the scholarship has been awarded.

### Employment

**GSTA:** (*Graduate Student Teaching Assistantship*) This is money made available by the Department and is given for support of teaching activities including: marking, preparation of course materials, supervision of students in labs, and conducting tutorials. There is a form (called Appendix B1) that is used to outline the GSTA employment scope for the completion of teaching activities as stated by the hiring GAU/employment supervisor.

**GSRA:** (*Graduate Student Research Assistantship*) These are funds that have been raised by faculty for authorized research by government or private organizations. The GSRA funding is attached to the accomplishment of a specific task or to research in a certain area. Students accepting GSRA money can therefore expect to conduct research consistent with the needs of the specific research project. Appendix B2 form outlines the GSRA employment scope for the completion of research activities as stated by the employment supervisor.

GSTA and GSRA appointments are governed by a collective agreement with the University Graduate Student Workers (PSAC-UGSW). They are treated as employment income, and all students must have a valid SIN (social insurance number). See procedure outlined below.

For funded graduate students, the UNB payroll operates on a bi-weekly/direct deposit system. There are 26 pay periods in one calendar year: normally there are 9 pays during the fall term, 8 during the winter term, and 9 during the summer session. It typically takes an average of three weeks to process payment forms/documents. Therefore, please remember when you are budgeting that the first month of graduate studies is often the most difficult as there may be a delay in receiving your initial assistantship payment. All students must be registered for the entire time covered by the payment form or it cannot be processed.

If you have been advised that there is no financial assistance available, you will be personally responsible for all costs associated with the program and all living expenses during the period of your study at the University of New Brunswick.

## **Procedure:**

At the onset of their program funded students will receive an "Offer of Financial Assistance". It will outline the support, amounts, and source. Students will sign an "Acceptance of Financial Assistance" that will be included with the "Offer of Financial Assistance" thereby accepting the support. The acceptance will state that the student will not accept other financial support without the consent of the Director of Graduate Studies.

Canadian and international students receiving GSRA and GSTA require a Social Insurance Number (SIN). For information on SINs, visit the Social Development Canada Web Site:

<http://www.servicecanada.gc.ca/eng/sc/sin/index.shtml> or go to the local office of Service Canada at: 633 Queen Street, Fredericton.

## **Duration of Support:**

Master's students typically can receive GRA and/or GSTA monies for up to a maximum of two years. PhD students typically can receive GRA and/or GSTA monies for up to a maximum of four years.

## **10. Study Space Allocation**

The Department of Civil Engineering will attempt to provide appropriate space for students to study and store their study materials. In most cases individuals will be provided office space to share. Some points students should consider with respect to this space are:

- Absolutely no electrical appliances (e.g. hot plates, electric heaters, coffee makers) should be kept in these spaces.
- Do not build individual libraries in your study space. Do not abuse the library research loans system.
- Telephones may be provided in study spaces. Please contact your supervisor to determine what phone services can be provided.
- For security reasons it is advisable to lock your door when you are not in your study space.
- Please keep space tidy.

## **Keys and Deposits**

Keys for your assigned study space are available from the CE Graduate Studies Program Assistant in the Civil Engineering Office. You will be expected to pay a \$10.00 refundable deposit for each key issued to you and sign an agreement accepting responsibility for the study space assigned. At the completion of your program all keys are to be returned to the CE Office. Before deposits are refunded office space will be inspected. Keys for labs will only be issued upon written request of the student's supervisor. Under no circumstances are keys given to students for the Civil Engineering Office.

## **11. Report/Thesis/Dissertations**

### **11.1 Specifications for Writing Reports/ Theses/Dissertations**

**All reports, theses, and dissertations must meet all the specifications provided in the University of New Brunswick Regulations and Guidelines for the Preparation and Submission of Graduate Theses and Reports.**

The steps for thesis preparation and submission are available on the School of Graduate Studies Website at the following URL:

[https://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/thesis\\_preparation.html](https://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/thesis_preparation.html)

Regulations and Guidelines for the Preparation and Submission of Graduate Dissertations, Theses, and Reports are available on the School of Graduate Studies Website. The URL is <https://www.unb.ca/gradstudies/assets/documents/thesisformattingguide.pdf>

Procedures for the submission and assessment of Doctoral Dissertations are available on the School of Graduate Studies Website at the following URL: <https://www.unb.ca/gradstudies/assets/documents/thesissubmissionandassessmentguide.pdf>

Electronic theses and dissertations support is provided by UNB Libraries in partnership with the School of Graduate Studies (SGS) through <https://lib.unb.ca/etd>. This site includes a pre-formatted template plus formatting services and support, along with answers to a list of frequently asked questions. Be careful with the template as your report/thesis/dissertation should include a References Chapter instead of a Bibliography Chapter. Students are encouraged to discuss the thesis format with their supervisors at an early stage. **It is a Departmental guideline that the main body of an MScE thesis and PhD dissertation be no longer than 100 pages and 200 pages in length, respectively.** Students should be aware that publication of research findings in scholarly publications (e.g. refereed journals) is now commonplace and a thesis format that leads to more efficient publication is an important consideration. Students should give consideration to using the "Articles Format", or a similar format that expedites publication of the research.

Unless otherwise instructed by the supervisor(s), it is recommended that the Canadian Journal for Civil Engineering (CJCE) format for footnotes, references, tables, and figures be used. The instructions to authors in a recent copy of the CJCE should be consulted. The link to CJCE is: <https://cdnsiencepub.com/journal/cjce/authors#guidelines>

## 11.2 Acceptance of Thesis/Report/Dissertation

### 11.2.1 Graduate Academic Unit (GAU) Review of MEng Report/MScE Thesis/PhD Dissertation

The thesis or report must be acceptable to the GAU. This may be determined by one or both of the following:

- a) a meeting of the GAU Examining Board comprising the supervisor(s) and at least two readers (one of which may act as Chair of the meeting). The supervisor(s) must constitute a minority of the GAU Examining Board. A *Review of Thesis/Report* form should be completed and returned to the Director of Graduate Studies. Because an MEng Report receives no further examination beyond the GAU a reader from outside the GAU is desirable, but not mandatory.
- b) a GAU Oral Examination (*optional for MEng and MScE - decided by GAU Examining Board; required for all PhD candidates*) - comprised of a chairperson, supervisor(s) and at least two readers, one of which may Chair the Oral Examination. The supervisor(s) must constitute a minority of the GAU Oral Examining Board. A *GAU Oral Examination of Thesis/Report* form should be completed and returned to the Director of Graduate Studies.

If the GAU wishes to proceed with (b), an oral examination, the Chair of the Examining Board should advise the Director of Graduate Studies of the names of members of the Examining Board, date, time and preferred location. This information should be given in sufficient time (7 days prior to the oral examination) so that notices may be distributed to members of the GAU of Civil Engineering and the graduate students. Notice of the defence is also posted to the University Events Calendar and advertised in the SGS Gradosphere Blog. Interested parties will then have an opportunity to read the thesis or report.

It is the student's responsibility to photocopy their thesis/report when required, and to ensure that the members of the Examining Board receive their copy of the thesis or report if requested.

If (a) and/or (b) have been carried out to the GAU's satisfaction, the University Examining Board may be formed. When the University Examining Board accepts the thesis for defense, a University oral may be scheduled. A *University Oral Examination of Thesis Form* should then be completed and returned to the Director of Graduate Studies.

Students must be physically present at their oral defence.

### 11.2.2 University (SGS) Review of MScE Thesis/PhD Dissertation

The School of Graduate Studies requirements for examination of a Master's Degree by Report or Thesis are provided in Appendix E and can be accessed at <http://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/regulations/masters-degree-regulations.html>.

Requirements for examination of a PhD degree are also provided in Appendix E and can be accessed at <http://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/regulations/phd-regulations.html>.

The SGS website also provides a separate document outlining the steps needed to submit and assess Doctoral Dissertations. The "Thesis Submission and Assessment Guide" can be accessed at <https://www.unb.ca/gradstudies/assets/documents/thesissubmissionandassessmentguide.pdf>.

### 11.2.3 Examination Process for MEng Report

The GAU Examining Board is comprised of the supervisor(s) and at least two readers. Having one of the two readers from outside the GAU is desirable, but not mandatory, and the supervisor(s) must constitute a minority of the GAU Examining Board. The readers are generally given two weeks to review the report. It is the student's responsibility to photocopy their report, and to ensure that each member of the Examining Board receives their copy of the report if requested.

The GAU Examining Board meets to discuss acceptance of the report and one of the readers within the GAU may act as Chair of the meeting. A *University Review of MEng Report* (GAU memorandum) and *University (SGS) Report on Masters Thesis/Report* (blue form) should be completed and returned to the Director of Graduate Studies. An oral presentation is normally not required, and the MEng Report receives no further examination beyond the GAU.

Once the GAU Examining Board has accepted the report and the student has made the necessary revisions, they should make arrangements with the Director of Graduate Studies to ensure that the written format conforms with the regulations set out by the School of Graduate Studies. The Supervisor(s) and Director of Graduate Studies will then sign the *University (SGS) Report on Masters Thesis/Report* (blue form) confirming that this has been done. The supervisor's signature(s) confirms that modifications required by the examining board have been made. The Director of Graduate Studies also ensures that all GAU requirements for the MEng Degree (e.g. course, language, and report requirements) have been completed. A *Completion of GAU Requirements for Masters Degree* (yellow form) is submitted.

Once final corrections and formatting are approved by the supervisor and Director of Undergraduate Studies, a PDF of the finalized report is sent to the School of Graduate Studies ([gradthesis@unb.ca](mailto:gradthesis@unb.ca)) for inspection and approval. After approval by SGS, the student submits a final PDF document version to [gradthesis@unb.ca](mailto:gradthesis@unb.ca). The Graduate Secretary will deliver the required completion forms to Graduate Studies. However, it is the student's responsibility to

ensure that their binding fees (when personal copies are made) are paid and outstanding fees, etc. have been settled at the Financial Services Office.

Students are responsible for making arrangements to pay for the printing and binding costs of personal copies and are required to deliver the copies directly to the Circulation Desk at the Harriet Irving Library. A *(pink) Binding Form for Personal Copies* should be completed by the student and signed by the supervisor. The student is responsible for paying binding fees to the Harriet Irving Library.

#### 11.2.4 Examination Process for MScE Thesis

The GAU Examining Board is comprised of the supervisor(s) and at least two readers from the GAU. The supervisor(s) must constitute a minority of the GAU Examining Board. The readers are generally given two weeks to review the thesis. It is the student's responsibility to photocopy their thesis, and to ensure that each member of the Examining Board receives their copy of the thesis if requested.

The GAU Examining Board meets to discuss acceptance of the thesis, and one of the readers within the GAU may act as Chair of the meeting. A *GAU Review of MScE Thesis* (GAU memorandum) should be completed and returned to the Director of Graduate Studies. A GAU oral defence is normally not required, and a recommendation is then made to forward the thesis to the external reader of the University Examining Board provided the thesis is found acceptable subject to no changes or minor changes only.

The University Examining Board is comprised of the supervisor(s) and readers from the GAU Examining Board plus an additional reader external to the GAU (but usually from within the University). The external reader is normally given two weeks to review the thesis and a tentative date may be set for the University Oral Examination at this time.

A date for the University Oral Examination is finalized/set once the University Examining Board has found the thesis acceptable. This usually happens when the external reader has evaluated and confirmed the thesis is ready to go forward for defence. A *University Review of MScE Thesis* (GAU memorandum) should be completed (but is normally signed at the defence) and returned to the Director of Graduate Studies. One week advance notice of the oral exam is required, and the notice is distributed to members of the Civil Engineering GAU and the graduate students, posted to the University Events Calendar, and advertised in the SGS Gradosphere Blog.

Prior to the oral exam, documentation should be prepared and given to the chair of the Examining Board. The University Examining Committee convenes immediately after the oral defence and one of the readers within the GAU may act as Chair. A *University Oral Examination of MScE Thesis* (GAU memorandum), and a *University (SGS) Report on Masters Thesis/Report* (blue form) should be completed and returned along with the *University Review of MScE Thesis* (GAU memorandum). It is the chair's responsibility to ensure that the forms are completed (especially signatures) and given to the Director of Graduate Studies.

After the student has made the necessary revisions, they should make arrangements with the Director of Graduate Studies to ensure that the written format conforms with the regulations set out by the School of Graduate Studies. The Supervisor(s) and Director of Graduate Studies will then sign the *University (SGS) Report on Masters Thesis/Report* (blue form) confirming that this has been done. The supervisor's signature(s) confirms that modifications required by the examining board have been made. The Director of Graduate Studies also ensures that all GAU requirements for the MScE Degree (course, language, and thesis requirements) have been completed. A *Completion of GAU Requirements for Masters Degree* (yellow form) is submitted.

Once final corrections and formatting are approved by the supervisor and Director of Undergraduate Studies, a PDF of the finalized thesis is sent to the School of Graduate Studies ([gradthesis@unb.ca](mailto:gradthesis@unb.ca)) for inspection and approval. After approval by SGS, the student submits a final PDF document version to [gradthesis@unb.ca](mailto:gradthesis@unb.ca). The Graduate Secretary will deliver the required completion forms to Graduate Studies. However, it is the student's responsibility to ensure

that their binding fees (when personal copies are made) are paid and outstanding fees, etc. have been settled at the Financial Services Office.

Students are responsible for making arrangements to pay for the printing and binding costs of personal copies and are required to deliver the copies directly to the Circulation Desk at the Harriet Irving Library. A (*pink*) *Binding Form for Personal Copies* should be completed by the student and signed by the supervisor. The student is responsible for paying binding fees to the Harriet Irving Library.

#### 11.2.5 Examination Process for PhD Dissertation

The GAU makes a preliminary assessment of the doctoral dissertation before forwarding to the School of Graduate Studies (SGS) for the University Assessment. Submission of the dissertation to SGS indicates approval by the GAU.

The GAU Examining Board is comprised of the supervisor(s) and at least two readers from the GAU. The supervisor(s) must constitute a minority of the GAU Examining Board. The readers are generally given two to three weeks to review the dissertation. It is the student's responsibility to photocopy their dissertation if required, and to ensure that each member of the Examining Board receives their copy of the dissertation if requested.

The GAU Examining Committee meets to discuss acceptance of the dissertation, and one of the readers within the GAU may act as Chair of the meeting. A *GAU Review of PhD Thesis* (GAU memorandum) should be completed and returned to the Director of Graduate Studies. A GAU oral defence is scheduled once the GAU Examining Board has found the thesis acceptable. One week advance notice of the oral exam is required, and is distributed to members of the Civil Engineering GAU and the graduate students, posted to the University Events Calendar, and advertised in the SGS Gradosphere Blog.

Prior to the oral exam, documentation should be prepared and given to the chair of the Examining Board. The GAU Examining Committee convenes immediately after the oral defence and one of the readers within the GAU may act as Chair. A *GAU Oral Examination of PhD Thesis* (GAU memorandum) should be completed and returned along with the *GAU Review of PhD Thesis* (GAU memorandum). It is the chair's responsibility to ensure that the forms are completed (especially signatures) and given to the Director of Graduate Studies.

The PhD dissertation (incorporating the required changes and corrections) is submitted to the SGS once it is approved by the GAU. The Director of Graduate Studies recommends the Members of the University Examining Board (including the external examiner) in a memo to the Dean of Graduate Studies, and submits a *Conflict of Interest* form for the proposed external examiner that is signed by the supervisor(s). A *Completion of GAU Requirements for PhD Degree* (green form) is also submitted. The university thesis defence is administered by the SGS (including handling of all subsequent communications, distribution of the thesis, coordination and scheduling of the oral defence, and chairing the oral).

The University Examining Board is comprised of the Supervisor(s) and two Readers from the GAU Examining Board, an Internal Examiner from another GAU at UNB, and an External Examiner (outside of UNB). An unofficial memo is normally sent from the GAU to the Internal Examiners confirming their willingness to serve on the University PhD Examination Committee, and an E-mail or letter is sent by the GAU to the External Examiner to confirm their willingness and availability to serve on the Examining Board. The examiners are often members of the student's Supervisory Committee.

The University PhD defence is normally prescheduled and the Examiners typically have 4 weeks to examine the thesis and return their reviews to SGS. The prescheduled oral defence proceeds if the reviews provide a positive recommendation (minor or moderate revisions). The oral defence is limited to 3 hours duration (including a 30-minute presentation by the candidate). Major revisions to the thesis require a meeting of the Examining board to consider feedback and provide further direction (in the form of a written report) to the student before the oral

defence can proceed. In this case, the student will have a maximum of one year to make the required revisions and return the dissertation to the Examining Board for further review and assessment.

The Chair of the oral examination coordinates the Examining Board deliberations (providing their review and recommendations of both the dissertation and presentation/defence of the dissertation) and reports the Examining Board's assessment using the *University Assessment of PhD Dissertation and Oral Examination* form.

Following the oral defence and any required revisions to the thesis, the supervisor(s) will sign the appropriate form indicating that the requirements for revision have been satisfied. The supervisor must also ensure that other required forms for completion are signed and submitted. The written format of the dissertation must conform to the regulations set out by the School of Graduate Studies and is required to have a vita page.

The student is responsible for ensuring the final PDF document is sent to the School of Graduate Studies.

### 11.3 Report Presentation/Oral Defence of Thesis or Dissertation

The GAU Oral Defence as well as the MScE University Oral Defence will normally be chaired by the Director of Graduate Studies. The procedural guidelines are:

Introduction: Made by either Chairperson or Supervisor

MEng Presentation (when required):

- Recommended presentation time 20 minutes
- Question period for guests approximately 10 minutes
- 5 minute break to allow guests to leave if they wish
- Question period approximately 20 minutes - About 5 to 8 minutes per examiner
- Total time 1 hour (including post presentation deliberation)

MScE Defence:

- Recommended presentation time 30 minutes
- Question period for guests approximately 10 minutes
- 5 minute break to allow guests to leave if they wish
- Question period approximately 30 minutes - About 5 to 8 minutes per examiner
- Total time 1.50 hours (including post presentation deliberation)

PhD GAU Defence:

- Recommended presentation time 30 minutes
- Question period for guests approximately 10 minutes
- 5 minute break to allow guests to leave if they wish
- Question period approximately 40 minutes - About 5 to 8 minutes per examiner
- Total time 1.75 hours (including post presentation deliberation)

MEng/MScE/PhD:

It is expected that **only the student** will answer the questions posed during the question period. Comments by faculty members should be kept for the post presentation evaluation whenever possible, unless some situations require intervention by the supervisor to clarify the question to the student.

Students must be physically present at their oral defence.

## 12. Completion Process

### 12.1 Master of Engineering (MEng)

#### a) Application to Graduate

Apply on line <http://www.unb.ca/graduation/> should be completed by:

September 1	for October graduation (Fall Convocation)
March 1	for May graduation (Encaenia)

#### b) From the date the completed report (not a draft copy) is submitted to the supervisor(s), allow **approximately 1 month** (provided no presentation is required) for the process to be completed.

- Allow approximately 2 weeks for the GAU Examining Board Members to read and discuss the report.
- Once approved, and if a presentation is required, a copy of the report (including any required changes) must be in the CE office for one week prior to presentation unless they are excused by the GAU.
- A notice of oral presentation must be distributed one week prior to the presentation.
- Presentation is held. Corrections made by student.
- Once the Report is approved by the supervisor a final corrected copy of the report is returned to the CE Office for the format review and approval by the Director of Graduate Studies.
- A PDF of the final corrected report is then sent to SGS for review and approval. Any necessary changes are made prior to sending a final PDF of the report to SGS.
- The Graduate Administrative Assistant will then arrange to have the required completion forms (some of which must be signed by the student) to SGS.
- Personal copies of the report can be printed at Imaging Services. Copies for binding are delivered by the student to the Harriet Irving Library together with a (pink) Binding Form for Personal Copies signed by the student and supervisor. Students are responsible for paying the printing and binding costs.
- The Student will go to the Financial Services Office to arrange payment of any outstanding debts to the University.
- Student will return the Waste Disposal and Storage form signed by both student and supervisor, see Appendix G:
- Student will return all keys to the CE Office, before the key deposit is returned.

### 12.2 Master of Science in Engineering (MScE)

#### a) Application to Graduate

Apply on line <http://www.unb.ca/graduation/> should be completed by:

September 1	for October graduation (Fall Convocation)
March 1	for May graduation (Encaenia)

#### b) From the date the completed thesis (not a draft copy) is submitted to the supervisor(s), allow **approximately 6 weeks** for the process to be completed.

- Allow approximately 2 weeks for the GAU Examining Board Members to read the report, meet, and approve distribution to External Examiner if the GAU defence is waived.
- Copy to External Examiner (if applicable) and allow approximately 2 weeks for review.
- University Examining Board Members review the report and may choose to meet to discuss.

- Once approved, and a defence date is set, a copy of the thesis (including any required changes) must be in the CE office for one week prior to defense and a notice of the oral presentation must be distributed one week prior to the presentation.
- Presentation and defence is held. Corrections made by student.
- Once the thesis is approved and signed off by the supervisor, a final corrected copy of the thesis is returned to the CE Office for the format review and approval by the Director of Graduate Studies.
- A PDF of the final corrected thesis is then sent to SGS for review and approval. Any necessary changes are made prior to sending a final PDF of the thesis to SGS.
- The Graduate Administrative Assistant will then arrange to have the required completion forms (some of which must be signed by the student) to SGS.
- Personal copies of the thesis can be printed at Imaging Services. Copies for binding are delivered by the student to the Harriet Irving Library together with a (pink) Binding Form for Personal Copies signed by the student and supervisor. Students are responsible for paying the printing and binding costs.
- The Student goes to Financial Services Office to arrange payment of any outstanding debts to the University.
- Student will return the Waste Disposal and Storage form signed by both student and supervisor, see Appendix G:
- Student will return all keys to the CE Office, before the key deposit is returned.

### 12.3 PhD Candidates

#### a) Application to Graduate

**Apply on line** <http://www.unb.ca/graduation/> should be completed by:

September 1	for October graduation (Fall Convocation)
March 1	for May graduation (Encaenia)

#### b) All PhD candidates must have both a GAU Defence and a University Defence

- PhD students should allow time for the GAU Defence and then should allow approximately twelve to eighteen (12-18) weeks for the University Oral after the thesis has been submitted to the School of Graduate Studies. The University Examining Committee and Oral Defence are administered by the School of Graduate Studies.
- The external examiner has four to six (4 to 6) weeks to read the thesis, make comments, and return it to the School of Graduate Studies before the University Defence can proceed.
- Once corrections are made and after consulting with the CE Graduate Program Assistant, the Student will send a PDF of the thesis to SGS. The Graduate Program Assistant will arrange to have all required forms sent to the School of Graduate Studies. Note that the thesis must undergo a format review and approval by the Director of Graduate Studies and the SGS.
- Personal copies of the thesis can be printed at Imaging Services. Copies for binding are delivered by the student to the Harriet Irving Library together with a (pink) Binding Form for Personal Copies signed by the student and supervisor. Students are responsible for paying the printing and binding costs.
- The Student will go to Financial Services Office to arrange payment of any outstanding debts to the University.
- Student will return the Waste Disposal and Storage form signed by both student and supervisor, see Appendix G:
- The Student will return all keys to the CE Office before the key deposit is returned.

### 13. Photocopying

Photocopying services are available at the Imaging & Print Services – Marshall d’Avery Hall Rm 106. If the copying is related to a research project, the supervisor may provide funding for this service.

### 14. Safety and Security in the Civil Engineering Labs

The Civil Engineering Department recognizes that much of the laboratory work undertaken in the Department is performed by students, and that some of the work cannot be done conveniently during normal working hours.

It is the purpose of these guidelines to encourage safe and effective use of our facilities. The guidelines are issued to address the problems of (i) the safety of laboratory users, and (ii) the security of equipment required for research.

Students carrying out research in the lab(s) or working as a teaching assistant in a lab must complete the following:

- attend a mandatory presentation on *Introduction to Safety* (presented during the CE Graduate Student meeting each September)
- complete an On-Line (D2L) UNB EHS Safety Orientation (includes all students considered employees by the University regardless of whether they are working in a lab)
- complete their WHMIS (Workplace Hazardous Materials Information System) training
- attend a Lab Training and Safety Orientation with the supervising technician for each lab the student requires access to

All four requirements (Introduction, EHS Safety Orientation, WHMIS, and Training/Orientation for Labs) are mandatory and must be completed before the student is allowed to work in a lab.

Before the student can begin work in the lab, the student and supervisor must review their research work plan with the supervising technician(s).

#### 14.1 Lab Operation and Safety

Our technical staff normally work Monday to Friday from 8:15 to 4:30. The Chief Technician should always be consulted when new or unusual procedures are being planned. If they deem the proposed work to be unsafe, the student should consult their supervisor.

CSA approved footwear is mandatory in all A-Level labs and certain B-Level labs in the Head-Hall Complex. PPE (personal protection equipment) requirements are posted at the entrance to each lab, indicating health hazards and requirements for safety footwear and other protective equipment such as hard hats, safety glasses, etc. when applicable.

Students must familiarize themselves with the location(s) of exits, first aid supplies, and eye-wash stations.

**Make sure chemicals are properly labeled and stored in their appropriate location.**

Safety is closely monitored, and we have a zero-tolerance policy for safety in the labs. Anyone violating safety regulations will be required to leave the lab(s) immediately.

The following work, and work of a similar nature, should be done only under the supervision of a technician and with the supervisors’ approval. This includes, but is not limited to

- (i) Operation of the overhead crane (authorized personnel only) in Room A15.
- (ii) Operation of the concrete mixer in Room A12.
- (iii) Work in the soils pit.

(iv) Capping or grinding of cylinders in Room A12.

**Training and authorization are required to use any tools or equipment in the labs (no exceptions).**

**It is important that everybody contribute to maintaining the laboratories in a clean and orderly state. This means making sure your workplace area is clean at the end of each day.**

**No cell phone use during instructional labs.** The use of cell phones is prohibited during instructional laboratories. Cell phones may be used only in an emergency situation or with the explicit consent of the lab instructor or teaching assistant.

**Stop and ask questions if you are unsure about a particular situation and alert the Technical Staff or Supervisor/Course Instructor if you suspect any potential problems. Everyone is responsible for ensuring safety regulations are being followed.**

#### 14.2 Working After Hours

The Department requires the practice of the "buddy" system, particularly for after-hours work. This ensures that two people are in reasonably close proximity to each other when laboratory work is in progress. **Even so, work of a dangerous nature should not be done after hours.**

A safety information sheet posted with each lab provides information about working alone. Working alone is not allowed outside of normal working hours. You must receive explicit permission to work in a Civil Engineering lab outside of normal working hours. Graduate students are required to obtain permission from their supervisor after informing the Chief Technician or designate. Undergraduate students carrying out research are to obtain a permission form from the Chair of the Department after informing the Supervisor and Chief Technician or designate.

#### 14.3 Laboratory Security

The A and B level laboratories in the Head Hall Complex have been subject to both theft and vandalism; we have lost some valuable research equipment, and test samples have been destroyed in the past. It is imperative, therefore, that rooms be locked when not occupied, even for short periods of time. It is an inconvenience for us to have to do this, but there seems to be no other way to effectively protect our valuable equipment.

No one must borrow or otherwise acquire any piece of equipment without first checking with the Chief Technician or with the faculty member who normally works with the equipment in question. Under no circumstances must any equipment or any supplies be removed from any test in progress without first checking with the person performing the test or the person responsible for the test.

The UNB Security Office can be reached at 453-4830 ([www.unb.ca/security](http://www.unb.ca/security))

## 15. General Department and University Policies

### 15.1 CE Office Access

Students are not permitted in the CE office beyond the reception counter. Please wait at the counter to be served by one of the office staff.

### 15.2 Use of University Owned Computers

Please note that computers provided by the Department (or your Supervisor) are the property of the University and these computers are not for personal use. As such, when using these computers please do not:

- download non-research related content including audio or video files,
- store non-research related content including audio or video files,
- access personal instant messaging services such as Telegram and WhatsApp

These activities congest the memory of the computers which can lead to shortage of space for necessary research information, especially where computers are shared by more than one student. It also increases the chance of introducing viruses into the computers.

Also, please do not change the password or language used on the computers from English to any other language. Again, a computer may be shared by more than one student or, upon completion of degree requirements the computer may be turned over to other students to use.

What Students Want to Know about IT: <https://unbcloud.sharepoint.com/sites/MyUNB/SitePages/Personal,-IT-Account,-and-Email-Options.aspx>

Visit <https://unbcloud.sharepoint.com/sites/MyUNB> to login to computer labs on campus, access site licensed software, print documents (black/white& color) and store your files on OneDrive.

See [Acceptable Use of Information and Communication Technologies](#) for UNB Acceptable Computer Lab Usage Policy detail listings. This can be found under UNB Policies.

### 15.3 Scent Free Policy

A growing number of people are sensitive or allergic to perfumes and other odour irritants. Consistent with the policy in several other UNB Departments and a large number of other workplaces, the Civil Engineering Department Office is a scent-free workplace. Everyone coming into the Departmental Office is asked to refrain from wearing perfume, cologne, after-shave and other highly scented products. Thank you for your cooperation.

### 15.4 Fire Safety

Head Hall and Gillan Hall form an extremely rambling and complicated structure and students should take the time to identify emergency exits related to any labs and class rooms; if uncertain, ask your supervisor. When fire alarms are heard, students must exit the building quickly, without any hesitation. All fire alarms are to be treated with extreme seriousness.

## 15.5 UNB Smoking Policy

As of September 1, 2022, smoking shall be prohibited anywhere on University Campus Property, including in all outdoor spaces.

## 15.6 UNB Declaration of Rights and Responsibilities

The University of New Brunswick is committed to providing a positive learning and working environment, one in which all members of its community are respectful and respected as individuals. For more information please see: <https://www.unb.ca/humanrights/>

## 16. Accommodations

On Campus: The UNB Fredericton Residence Community provides accommodation for full-time students. Graduate students are attracted to McLeod House, a co-ed residence for 200 students, because of the availability of single rooms. Application forms and information about residence rates are available from;

<https://www.unb.ca/fredericton/residence/index.html> Tel: (506) 453-4800 Fax:(506) 453-3585 E-mail: [resadmin@unb.ca](mailto:resadmin@unb.ca)

Student Union off Campus Housing: This is a service offered by the UNB Student Union with the intent to provide safe and affordable living accommodations for UNB students. Call 476-1250, Email [offcampushousing@unb.ca](mailto:offcampushousing@unb.ca) or visit <https://www.unbsu.ca/offcampus-housing>

## 17. The International Student Advisor's Office

Telephone: 453-4860 C.C. Jones Student Services Centre Fax: 453-5005 and E-mail: [isao@unb.ca](mailto:isao@unb.ca)

The University of New Brunswick - Fredericton Campus, St. Thomas University, and the University of New Brunswick - Saint John Campus; welcome all international students. We hope your sojourn here will be a pleasant and rewarding one. International students are encouraged to visit the International Student Advisor's Office for information that will help during their transition stages. Students who encounter difficulties in the area of immigration, housing, communications or personal problems should not hesitate to contact the International Student Advisor's Office.

Information regarding the services provided by the International Student Advisor's Office is available on their web page: <https://unbcloud.sharepoint.com/sites/isao>

## 18. Graduate Student Fee Schedule

For detailed information on Tuition and Fees, visit <http://www.unb.ca/gradstudies/current/financial/>

### **Maintaining Your Registration:**

Once you are registered in the School of Graduate Studies you MUST maintain your registration and pay fees continuously until graduation (i.e. 3 terms per year).

#### **Masters Degree students:**

- Full-time students pay the current Program Fee for the first six (6) terms of their degree program. Commencing at the seventh term, all students pay the current Continuing Fee until the completion of the program.
- Part-time students must have paid fees equal to at least 4.5 times the full-time term fee in place at the time of first registration.

#### **PhD Degree students:**

- Full-time students pay the current Program Fee for the first nine (9) terms of their degree program. Commencing at the tenth term, all students pay the current Continuing Fee until the completion of the program.
- Part-time students must have paid fees equal to at least nine (9) times the full-time term fee in place at the time of first registration.

#### **Canada Student Loans:**

Canada Student Loan "Certificates of Eligibility" from the province of NB will be available at Financial Services by mid-August. Registration process MUST be completed and picture identification presented before loans can be released.

## 19. Graduate Student Wellbeing

Support for graduate student wellbeing can be found at <https://unbcloud.sharepoint.com/sites/AcademicSuccess/SitePages/Health-Wellbeing.aspx>

This site provides information on services and links to helpful resources related to student health, counselling, peer support, etc.

## 20. Association of Civil Engineering Graduate Students (ACEGS)

### **Welcome!**

The ACEGS is a graduate student led initiative to organize social events, research forums, and represent your interests to the University administration. We plan to help make your stay here more enjoyable by introducing events to help everyone to get to know each other, and to make sure your concerns are met.

### **How are graduate studies different?**

In graduate studies, students are expected to concentrate more on research and look to course work, perhaps not for old answers, but rather new questions. The student body is also more varied than the typical undergraduate class. Many graduate students are from other countries; some study full-time, while others complete their degree part-time. These students usually have varying degrees of experience when entering Graduate School - perhaps working for several years before returning.

### **Why is ACEGS here for you?**

Previously, Civil Engineering graduate students had no independent association to serve these needs. There is the campus-wide Graduate Students Association (GSA), but the initiative was ours to develop a group that would specifically target Civil Graduate Students. With the efforts of some senior students, the Association of Civil Engineering Graduate Students (ACEGS) of UNB was formed in 1995.

### **How are we funded?**

Our funding comes from an operating grant paid out of a portion of student fees collected by the GSA. With this money, we can organize various social events with the aim of enhancing the graduate student experience for all Civil Students. We also act as the liaison between our student body and the GSA. ACEGS currently holds two voting seats on the GSA general council, providing a voice for Civil Engineering graduate students at the university level.

### **Who are the executive?**

The Association Executive Committee (*President, Vice-President, Executive Secretary, and Treasurer*) is responsible for conducting the business of the Association and guidance is given by the current Director of Graduate Studies in Civil Engineering.

### **How can you become involved?**

We want you! All Civil Engineering graduate students are encouraged to become involved in the Association or the Executive. We also need to have input from you in matters regarding the Department. We would like to be able to coordinate and assemble student opinions regarding the current program and affect future curriculum changes and laboratory procedures. Remember, the success of the Association depends on your involvement. We look forward to seeing you at our events. E-mail: [acegs@unb.ca](mailto:acegs@unb.ca) URL: <http://www.unb.ca/clubs/acegs/>

## Appendix A: Academic Dates 2022 - 2023

The School of Graduate Studies Calendar of Academic Dates for 2022-2022 can be found at <http://www.unb.ca/gradstudies/current/resources/important-dates.html>

## Appendix B: PhD Comprehensive Examination Guidelines

The candidate will submit a written proposal for the PhD thesis to their supervisor(s) before the Comprehensive Examination is scheduled. The supervisor(s) will decide on an appropriate date for the Comprehensive Examination. The deadline for submission of the proposal by full-time candidates will normally be within twelve months of their first registration in the PhD program of studies (within two years for part-time candidates). The deadline for submission of the proposal for students who transfer into a PhD from an MScE will normally be at the end of the first term as a PhD Candidate. The deadline for submission of the proposal may be extended with a written request by the candidate's supervisor(s) to the Director of Graduate Studies but the Comprehensive Exam must be held within eighteen months of first registration (within three years for part-time candidates).

The supervisor(s) will submit a list to the Director of Graduate Studies of the members proposed for the Examining Committee for the Comprehensive Examination at least a month before the proposed Comprehensive Examination.

The Examining Committee will normally consist of the supervisor(s), at least one other faculty member from the GAU in which the candidate is registered, and at least one faculty member from another GAU at the University of New Brunswick. Normally the Examining Committee should consist of five members.

The Chair of the Examining Committee for the PhD Comprehensive Examination shall be the Director of Graduate Studies or their designate. The Chair shall not be a voting member of the Examining Committee. A tie vote will result in a second and final attempt at the PhD Comprehensive Examination. A tie for a second attempt will result in a failure of the PhD Comprehensive Examination.

The UNB members of the Examining Committee for the PhD Comprehensive Examination will normally be the UNB members of the Examining Board for the final thesis submission.

The PhD Comprehensive Examination includes a component related to the candidate's general field of study and a component related to the work proposed for the PhD thesis.

The steps to be followed for the PhD Comprehensive Examination are as follows:

- 1) The candidate, through their supervisor, will submit a copy of their written proposal for the PhD thesis to the Director of Graduate Studies at least 28 days before the scheduled Comprehensive Examination. The Director of Graduate Studies will provide a copy of the proposal to each member of the Examining Committee within two days of receipt. (The candidate is encouraged to visit members of the Examining Committee before commencing the written component of the Comprehensive Examination to receive any resource material that each member wishes to pass on to the candidate.)
- 2) Each member of the Examining Committee will submit one to three questions related to the candidate's general field of study to the Director of Graduate Studies at least 14 days before the scheduled Comprehensive Examination. These questions will form the written general component of the Comprehensive Examination.

As a guideline, the questions by any one member of the Examining Committee should be completed in writing in a period of less than six hours. The examination will normally be an open book format, however each examiner can require the candidate to write an open book, a closed book, or a combined open book and closed book examination. These questions will also form the basis of the oral parts of the general component of the Comprehensive Examination.

Before providing the questions to the Candidate, the Director of Graduate Studies, in consultation with the supervisor(s), will review the questions to determine if they are in the candidate's general area of study and can

be answered in a reasonable period of time. The questions may include areas specifically mentioned in the submitted proposal.

The candidate must not interact with others regarding the written examination. The submitted answers must be the independent work of the candidate. Proper citation of the work of others and complete references must be provided.

- 3) The Director of Graduate Studies will provide the Candidate with the questions for the written component of the Comprehensive Examination from all of the members of the Examining Committee seven days before the scheduled Comprehensive Examination. Copies of all questions will also be distributed to each member of the Examining Committee.

The Director of Graduate Studies will provide a notice of the date, time and place of the PhD Comprehensive Examination to members of the GAU.

- 4) The candidate will submit the written responses to the Director of Graduate Studies at least three days before the Comprehensive Examination. The Director of Graduate Studies will provide the written responses of all submissions to the members of the Examining Committee at least two days before the scheduled Comprehensive Examination. Each member of the Examining Committee will grade the written responses to their question(s).

- 5) The Department of Civil Engineering shall be informed one week prior to the Comprehensive Examination. On the day of the Comprehensive Examination the candidate will appear to orally answer questions posed by the members of the Examining Committee and others who are in attendance. All questions will be posed through the Chair who will determine if the questions are in the general research area to be pursued by the candidate.

- 6) The format of the oral portion of the proposal component of the Comprehensive Examination to test the Candidate's knowledge and competence to carry out research on their proposed thesis topic will be:

- 6.1) The candidate will give an oral presentation of their proposal for up to 20 minutes.

- 6.2) A general question period will follow for up to 40 minutes. The questions are to be related to the subject area of the proposal.

- 7) The format of the oral portion of the general component of the Comprehensive Examination to test the Candidate's general knowledge of their area of study will be:

- 7.1) Examiner #1 (supervisor) will ask the candidate questions that are directly related to the questions that they have submitted to the candidate. This will last for up to 10 minutes.

The floor will then be open for follow-up questions that are related to the questions posed by Examiner #1. This will last for up to 10 minutes.

The total time allocated for questions and answers related to those initially submitted by Examiner #1 will be 20 minutes.

- 7.2) Examiner #2 proceeds in a similar manner to Examiner #1. Then the same procedure will be followed for each of the other members of the Examining Committee.

- 7.3) Finally the floor is opened up to questions related to the general area of study to be pursued by the candidate. This will last for up to 20 minutes.

- 7.4) There will be a 15-minute break at this time.
- 8) The assessment of the Comprehensive Examination will be carried out immediately following the oral examination. The Examining Committee and other faculty members will meet to formally assess the performance of the candidate.

The Examining Committee will then decide if the candidate passes or fails the Comprehensive Examination. The Examining Committee shall consider the following when making their decision:

- the submitted written answers to questions posed by the members of the Examining Committee for the general component of the Comprehensive Examination.
  - the oral response to the questions posed in relation to the general component of the formal Comprehensive Examination.
  - the submitted written proposal for the PhD thesis.
  - the oral response to the questions posed in relation to the proposal component of the formal Comprehensive Examination.
- 9) The candidate will be informed in writing by the Director of Graduate Studies or their designate (with a copy to the Dean, School of Graduate Studies) of the decision of the Examining Committee within a period of three days after the completion of the Comprehensive Examination.

The maximum time for the oral portion of the PhD Comprehensive Examination including the general component and the proposal component is:

20 minutes x number of examiners, plus  
20 minutes for general questions, plus  
15 minutes for a break, plus  
20 minutes for the presentation of the proposal, plus  
40 minutes for response to questions related to the proposal.

For three examiners the total time is 2 hours 35 minutes.

For four examiners the total time is 2 hours 55 minutes

For five examiners the total time is 3 hours 15 minutes.

It is noted that these are maximum times.

Time from date of PhD Comprehensive Examination (*suggested guidelines*):

- Start The supervisor(s) in consultation with the Director of Graduate Studies will set the date for the oral examination.
- 30 days Establish composition of the Examination Committee by supervisor(s) through the Director of Graduate Studies.
- 28 days The candidate submits their PhD proposal to supervisor(s) who passes copies to the Director of Graduate Studies (one copy for each member of the Examining Committee, plus a copy for the Director of Graduate Studies).
- 26 days The Director of Graduate Studies provides a copy of the proposal to each member of the Examining Committee.
- 14 days Each member of the Examining Committee submits one to three questions to the Director of Graduate Studies. The Director of Graduate Studies reviews the questions and prepares them for submission to the candidate.

- 7 days      The Director of Graduate Studies provides questions to the candidate. Written responses by the candidate are submitted to the Director of Graduate Studies within 72 hours after receipt of questions. The Director of Graduate Studies circulates a notice of the PhD Comprehensive Examination to faculty members and graduate students of the GAU of Civil Engineering.
- 2 days      The Director of Graduate Studies provides copies of written responses to the members of the Examining Committee
- 0 day        The Director of Graduate Studies chairs the PhD Comprehensive Examination.

In the event that the Director of Graduate Studies is unable to perform the duties outlined in these procedures, then they may designate a member of the GAU to substitute as Chair subject to the approval of the supervisor(s).

The procedures and responsibilities associated with faculty who are members of the Graduate Academic Unit of Civil Engineering PhD Comprehensive Examination Committees are as follows:

**Procedures and Responsibilities Associated with Faculty who are Members of PhD Comprehensive Examination Committees**

1.      Review the candidate’s proposal
2.      Give the candidate an opportunity to meet with me at least once to discuss the general area on which they will be examined. (If appropriate, to indicate the texts or papers which the candidate should study in preparation for the comprehensive component of their Comprehensive Examination.)
3.      Prepare questions for the written portion of the general component of the Comprehensive Examination. These questions will be in the general field of study being pursued by the candidate. These questions will be provided to the Director of Graduate Studies in the Department of Civil Engineering. Normally the written examination will be open book although it can be closed book, or a combination of both open and closed.

The maximum estimated time to complete the written examination should be six hours per set of questions per examiner.

4.      Grade the answers to the written portion of the general component of the Comprehensive Examination.
5.      Attend the meeting of the Examining Committee at the oral presentation component of the Comprehensive Examination. The Comprehensive Examination will normally require a 4 - hour block of time. This meeting will include the oral portion of the general component and the oral portion of the proposal component of the Comprehensive Examination.
6.      Assess the candidate’s overall performance and decide if the candidate passes or fails the Comprehensive Examination.
7.      Be willing to serve as a reader on the Examining Board for the candidate’s PhD thesis. This is not a firm commitment. However, you will most likely be recommended to serve on the Examining Board when the Examining Board is formalized by the Dean of Graduate Studies.

April, 2000

## Appendix C: MScE Written Thesis Proposal (Format and Content)

For all MScE Civil Engineering graduate students there is a requirement for a written Thesis Proposal. The Thesis Proposal must be approved by the student's primary Supervisor(s) and the CE Director of Graduate Studies (or their designate) within nine (9) months (within 18 months for part-time) of first registration. Students entering the Accelerated Master's Program are required to submit their proposal within four (4) months. For full-time students the deadline for submission of the proposal may be extended with a written request from the candidate's supervisor(s) to the Director of Graduate Studies but must be submitted within thirteen (13) months of first registration. Students are encouraged to present the proposal orally to their research group.

The Thesis Proposal should not exceed 15 pages, and include the following:

<b>Title Page</b> (topic title, student name, supervisor(s) name, date)
<b>Table of Contents</b> (with headings, page numbers)
<b>Summary</b> <ul style="list-style-type: none"> <li>one page (simple terms, objectives, approach, results, duration)</li> </ul>
<b>Introduction (or Problem Development)</b> <ul style="list-style-type: none"> <li>background to problem, why is it significant, etc.</li> <li>a comprehensive literature review is not expected here; however, the proposal must indicate the knowledge of some recent relevant studies and/or published articles on the proposed topic</li> <li>clear problem (or opportunity) statement</li> </ul>
<b>Goals and Scope</b> <ul style="list-style-type: none"> <li>state the goal of the research</li> <li>identify realistic and specific objectives that will collectively accomplish this goal</li> <li>describe the scope of the research by specifically identifying the expected boundaries of the research</li> </ul>
<b>Study Methodology</b> <ul style="list-style-type: none"> <li>associated method for each objective</li> <li>discuss methods for data collection (laboratory testing, literature review, interviews, etc.) and analyzing/applying data (statistical tests, theoretical or empirical equations, design procedures, etc.)</li> <li>mention alternative approaches (if any exist)</li> <li>address constraints or limitations of proposed approach</li> </ul>
<b>Schedule</b> <ul style="list-style-type: none"> <li>schedule all major activities, including time for preparation of reports and meetings</li> <li>present schedule in a graphical form</li> </ul>
<b>Resources</b> <ul style="list-style-type: none"> <li>identify resources (materials, equipment, personnel) adequately; include your own time</li> </ul>
<b>Outcomes</b> <ul style="list-style-type: none"> <li>identify the anticipated significant research findings and propose form(s) of dissemination</li> </ul>
<b>References</b> <ul style="list-style-type: none"> <li>provide references in the correct format (e.g. Canadian Journal of Civil Engineering <a href="https://cdnsiencepub.com/journal/cjce/authors#guidelines">https://cdnsiencepub.com/journal/cjce/authors#guidelines</a>)</li> <li>cite all references in the body of the Proposal</li> </ul>
<b>Appendices</b> (if required) <ul style="list-style-type: none"> <li>may include supporting data or detailed technical discussion/procedures</li> </ul>
<b>Research Safety Form &amp; Research Environmental Plan Form</b> (required) <ul style="list-style-type: none"> <li>forms are on the CE website under current students  <a href="http://www.unb.ca/fredericton/engineering/assets/documents/civil-research-enviro.pdf">http://www.unb.ca/fredericton/engineering/assets/documents/civil-research-enviro.pdf</a>  <a href="http://www.unb.ca/fredericton/engineering/assets/documents/civil-research-safety.pdf">http://www.unb.ca/fredericton/engineering/assets/documents/civil-research-safety.pdf</a> </li> </ul>

## Appendix D: Graduate Student Teaching Apprentice Program (GSTAP) in Civil Engineering

The GSTAP is an optional part of the PhD program in Civil Engineering and is limited to teaching a course at the undergraduate level. Students entering the program will be required to have completed the UNB Diploma in University Teaching (or equivalent) prior to teaching the course. Completion of the Comprehensive PhD exam is preferred.

A graduate student may be given a course to teach as a designated apprentice only once during their program. The course to be assigned will normally be identified by the December prior to the subsequent academic year the course will be taught. Apprentices will be compensated according to the AUNBT (Group 2: Contract Academic Employees) - UNB Collective Agreement.

Participating in the GSTAP gives the student an opportunity to (1) develop teaching skills, (2) provide an opportunity to organize and apply knowledge in their area of expertise, (3) broaden their knowledge through practical application of teaching, (4) increase their level of confidence in their profession, and (5) increase their career qualifications.

Graduate students in the program will work closely with a faculty member (mentor) on all aspects of pedagogy, developing skills in lecturing, classroom discussion, marking, and course and assignment design while teaching an undergraduate course. During the apprenticeship, the mentor will normally teach a portion (at least a third) of the course which will be observed by the apprentice. The apprentice will normally teach at least one third of the course, which the mentor will observe periodically in order to offer feedback, and will be available throughout the term for advice. Variations on this rubric are possible so long as they involve similar periods of observation, coaching and feedback between the apprentice and mentor when the apprentice is serving as observer and instructor. One option could entail having the student TA the course prior to acting as instructor for the subsequent course offering. Advice may include instruction on: course planning and curriculum design; preparing and delivering classes; preparing and grading essays, tests, and examinations; course administration; and the preparation of a professional teaching dossier (including a general philosophy of teaching and teaching evaluations).

The mentor and student are required to submit an application identifying the course, and indicating the level and type of participation by both parties. Accepted students register in a non-credit course CE 6993 Teaching Apprenticeship with pass/fail. The mentor will assess the student's performance over the period of apprenticeship and assign a pass/fail grade once the apprenticeship is completed.

### **Application form:**

[http://www.unb.ca/fredericton/engineering/\\_assets/documents/civil-gstap-agreement.pdf](http://www.unb.ca/fredericton/engineering/_assets/documents/civil-gstap-agreement.pdf)

## Appendix E: University (SGS) Master's and PhD Regulations

### E1. Master's Degree Regulations

(<http://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/regulations/masters-degree-regulations.html>)

#### Master's Degree by Thesis

A candidate for the Master's degree, unless proceeding to the degree by a report, research essay, or course program (see following sections) will present a thesis. The subject of the thesis must be approved by the appropriate GAU within the stipulated time limits stipulated by the SGS and the GAU.

The Master's thesis must demonstrate the candidate's competence to undertake independent research work; it must make a contribution to knowledge in the candidate's field of study; it must show that the candidate is fully aware of the pertinent published material; and it must be written in a satisfactory literary style. It should be free of typographical and other mechanical errors.

The thesis will, in the first instance, be examined by the GAU and, if approved, will then be submitted to an Examining Board appointed by the Director of Graduate Studies (DoGS) of the GAU concerned or their designate. Where a thesis is emanating from a degree in the Interdisciplinary Studies (IDST) GAU of the SGS, the Examining Board will be appointed by the Assistant Dean/DoGS for the IDST program in the SGS.

The Examining Board will be constituted as follows:

- (a) The Examining Board will consist of at least three persons, including the Supervisor, not more than two of whom have been formally involved in the supervision of the candidate;
- (b) At least one non-supervising member of the Board must be from a GAU other than that in which the candidate has studied. (In the case of a Master's report this requirement, although not mandatory, is desirable.); and
- (c) The Chair of an Examining Board will be a member of the candidate's GAU and will not have been formally involved in the supervision of the candidate.

The Examining Board may also include an external reader. Should the Examining Board approve the thesis, it will then examine the candidate orally. The oral examination will be chaired by the Director of Graduate Studies in the student's GAU, who will not vote. The oral examination is open to the public and members of the university. At the discretion of the chair of the oral defence, members of the public and the university will be permitted to question the candidate but will have no vote. The Director of Graduate Studies of the specific GAU will report the decision of the Examining Board to the Dean of Graduate Studies.

Note: the student must be physically present at the oral defence. Only in exceptional circumstances (e.g., extreme illness supported by medical documentation, prohibition on travel due to visa problems) will consideration be given to a request to defend remotely, all efforts will be made to reschedule the defence to facilitate the student's physical presence at the defence, and the decision rests with the Dean of the SGS.

The thesis must conform in all respects to [the Thesis Formatting Guide](#) approved by the School of Graduate Studies. The dates for presentation of Master's theses to the GAU, posted on the website and available from the School of Graduate Studies, should be noted. However, theses may be submitted at any time of the year.

### **Master's Degree by Report or Research Essay**

A candidate for the Master's degree by report must prepare a report as part of the program and this report must be approved by an Examining Board established by the Director of Graduate Studies of the GAU concerned or designate. The Examining Board and the process for evaluation and defense of the report are the same in all other respects as those for a Master's Degree by Thesis (see section Master's Degree by Thesis).

A candidate for the Master's degree by major research essay must conform in all respects to the regulations governing the supervision, preparation, and presentation of the major research essay as approved by the candidate's GAU and the SGS.

## **E2. PhD Degree Regulations**

(<http://www.unb.ca/gradstudies/current/resources/regulations-and-guidelines/regulations/phd-regulations.html>)

Students who have not taken undergraduate programs sufficiently related to the major subject of advanced study may be required to undertake preparatory work as prescribed by the GAU concerned. Students in all graduate programs may also be required to pass qualifying or comprehensive examinations, as stipulated by the regulations of the GAU concerned. Additional grade requirements and supplementary language requirements may be stipulated by each GAU and can be found under [the individual GAU Program listings](#).

### **PhD Dissertation**

Candidates for the degree of Doctor of Philosophy shall present a dissertation embodying the results of their investigations on an approved topic. The work upon which the dissertation is based must have been done by the candidate under the direction of an approved supervisor.

The dissertation must demonstrate the candidate's competence to undertake independent research work. It must contribute significantly to knowledge in the candidate's field of study and must be of sufficient merit to suggest publication in an appropriate scholarly journal or other scholarly format. The dissertation must show that the candidate is fully aware of the pertinent published material, must be written in a satisfactory literary style, and must be free of typographical and other mechanical errors.

The dissertation must be examined by the GAU concerned and, if approved, will then be submitted to an Examining Board appointed by the Dean of Graduate Studies in consultation with the GAU (see the document "[Thesis Submission and Assessment Guide](#)").

The Examining Board will consist of the candidate's supervisor(s), and three other members from the School of Graduate Studies, at least one of whom must be from the candidate's GAU and at least one of whom must be from a GAU other than the candidate's. There will also be an external examiner from outside the University of New Brunswick. If the Board, upon examining the dissertation, finds it "capable of being defended", the SGS will schedule an oral examination of the candidate.

The oral examination will be open to the public and to all members of the university. The Dean of Graduate Studies, the Associate/Assistant Dean of Graduate Studies, or a Senior Faculty Member appointed by the Dean of Graduate Studies will chair the oral examination. At the discretion of the Chair, members of the public and the university will be permitted to question the candidate but will have no vote. At the conclusion of the oral defence, the examining board will make its decision about recommending the candidate for a degree based on both the content of the dissertation and on the candidate's ability to defend it. The Examining Board may require the student to make corrections to the thesis. The candidate must make such corrections and return the corrected copies of the thesis to the Dean of

Graduate Studies in order for the recommendation for a degree to proceed.

Note: the student must be physically present at the oral defence. Only in exceptional circumstances (e.g., extreme illness supported by medical documentation, prohibition on travel due to visa problems) will consideration be given to a request to defend remotely, all efforts will be made to reschedule the defence to facilitate the student's physical presence at the defence, and the decision rests with the Dean of the SGS.

The dissertation must conform in all respects to the regulations governing the presentation of dissertations as detailed in the "[Thesis Formatting Guide](#)". Students should also consult the document "[Thesis Submission and Assessment Guide](#)".

The SGS maintains and post deadlines for the submission of dissertations each term in order to graduate in the following Encaenia or Convocation. Students hoping to graduate in a specific encaenia/convocation should therefore pay close attention to the posted deadlines. Candidates not attempting to meet graduation deadlines may submit dissertations to the SGS at any time of the year.

NOTE: If a faculty member at UNB wishes to undertake doctoral studies at UNB the following rules apply:

1. The supervisor(s) shall not be from the same academic unit as the candidate. This means that in non-departmental Faculties the supervisor(s) must be from another Faculty. In a departmentalized Faculty, the supervisor(s) may be from a different department within the Faculty.
2. The Supervisory Committee may contain members from the candidate's academic unit, but they cannot form a majority.
3. The Examining Board must not contain any members from the same academic unit as that of the candidate.

When a GAU is establishing Supervisory Committees and Examining Boards, Adjunct Professors, Honorary Research Associates, and Emeritus Faculty are subject to the same regulations as other faculty members.

If a student who has a doctoral degree nearly completed accepts a faculty or term position in the academic unit in which they are studying, they will not be in violation of this regulation. However, they may not become a member of the Graduate Academic Unit until the degree is completed.

## Appendix F: Scholarships/Awards/Grants

**Awards: (As listed on the School of Graduate Studies web site)**

**Details:** <http://www.unb.ca/academics/calendar/graduate/current/awards/>

**Awards available to CE students only:**

- Evoqua/ADI Industrial Wastewater Treatment Scholarship
- Albert M. Stevens Scholarship
- Bremner Scholarship in Concrete Materials
- Canadian Construction Research Board (New Brunswick Chapter)
- Esterbauer Civil Engineering Graduate Award
- Dr. Michael and Mary M. Ircha Scholarship in Transportation
- R. H. B. McLaughlin Fellowship in Civil Engineering
- Stevens Wilson Graduate Fellowship in Civil Engineering (Transportation)
- Transportation Association of Canada Postgraduate Scholarship Program
- James and Raylene Christie Graduate Scholarship

**Awards available to CE students and other disciplines:**

- APEGNB Advanced Studies Scholarship
- Beit Fellowship for Scientific Research-Imperial College, University of London
- Canadian Engineering Memorial Foundation Scholarships
- Canadian Water Resources Association Scholarships
- CCPE-Manulife Financial Scholarships
- CCPE-Meloche Monnex Scholarships
- Concrete Research and Education Foundation of ACI International
- Donald Jamieson Fellowship in Structural Engineering
- Emera Graduate Scholarship
- Engineering Futures Graduate Scholarship
- J.-Louis Levesque Fellowship
- J.O. Dineen Memorial Scholarship
- Joanne Keselman Scholarship for Women in Engineering
- Leslie Jaeger Scholarship for the Advancement of Engineering
- Link Foundation Energy Fellowship
- Nova Scotia Habitat Conservation Fund Grants
- NSERC Industrial Postgraduate Scholarships
- NSERC Innovation Challenge Awards
- NSERC-Visiting Fellowships in Canadian Government Laboratories
- Society of Automotive Engineers Doctoral Scholars Forgivable Loan Program
- Soil & Water Conservation Society David A. Williams Soil Conservation Scholarship
- Soil & Water Conservation Society Melville H. Cohee Student Leader Conservation Scholarship
- Soil & Water Conservation Society Kenneth E. Grant Scholarship
- Southern Gulf of St. Lawrence Coalition on Sustainability Scholarship for Sustainability
- The Brockhouse Canada Prize for Interdisciplinary Research in Science and Engineering
- The President's Doctoral Tuition Awards
- William & Margaret Brown Cambridge Scholarship
- Yanmar/SAE Scholarship

**School of Graduate Studies Student Travel Awards:** Two travel grants valued at \$500 each (one for travel between July 1-Dec. 31 and the other for travel between Jan. 1-June 30) are awarded annually. Application deadlines are May 31 and Nov. 30 respectively. The award is intended for students travelling to a conference for presenting a paper. Details and application form are available at: <http://www.unb.ca/fredericton/engineering/assets/documents/civil-travel-grant.pdf>

Appendix G: Waste Disposal and Storage Arrangements for Research

**University of New Brunswick**  
**Department of Civil Engineering**  
Waste Disposal and Storage Arrangements for Research

Project Title	
Work Area (field location / lab space)	
Researcher / Grad Student:	
Faculty Supervisor:	

- I hereby certify that all the waste from the aforementioned research project was disposed according to the research environmental plan.*
- Upon discussion with my supervisor, I request the storage of the following materials and/or samples which are properly labelled with my initials:*
- This does not apply to the students as their research did not result in laboratory waste or samples.*

Description and quantity:	
Estimated storage time:	

<i>Signature</i>	_____	_____	_____
<i>Date</i>	_____	_____	_____
	Researcher / Grad Student	Faculty Supervisor	Lab. Supervisor / Technician

## NOTES

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