School of Engineering

Graduate Handbook 2018-2019

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Introduction

Welcome to the School of Engineering!

We are pleased you have chosen the University of Guelph to continue your academic pursuits and endeavour to make the experience as interesting, challenging and rewarding as possible. Graduate studies can be exhilarating, confusing and stressful in equal measures. This handbook is intended to reduce the confusion and stress by providing information about the School, people who can help you, resources that are available for your use, and answers to frequently asked questions. It is not intended to replace the University's Graduate Calendar and you are recommended to become familiar with this document as well.

You will notice a difference at Guelph that is not typical of other institutions. The School of Engineering is non-departmentalized and therefore able to offer its programs in an interdisciplinary manner allowing for exposure to all disciplines within engineering. It is easy for students to interact with faculty and other students from all disciplines. This approach facilitates broader learning in all areas of engineering and you are encouraged to explore these additional opportunities.

Our History

Engineering, in one form or another, has been an integral part of the University of Guelph since 1874, originally as part of the Ontario Agricultural College. Since then, Engineering has adapted to meet the demands of a continually evolving job market and to meet societal needs. The most recent expansions at the undergraduate level occurred in 2009 (Mechanical) and 2010 (Computer and Biomedical). Engineering offers graduate degrees at the PhD, MASc, MEng, and GDip levels in fields closely aligned with the undergraduate programs.

Graduate programs were first added in the 1960's in Agricultural Engineering. PhD and MSc programs began first, with a coursework master's (MEng) in Water Resources Engineering added in 1976. In 2007, the MSc was rebranded as the MASc degree to be consistent with other institutions offering graduate degrees in engineering. IDEV (International Development) designations were added in companion with the Master's programs focusing on Water and Environment in 2007. In 2008, the two Graduate Diploma (GDip) programs were added with a focus on Water Resources Design and Modelling.

Graduate programs were added to allow Engineering to be involved with research in all areas of focus at the undergraduate level. Coursework master's were added due to the demand for broadly based degrees catering to the needs of working professionals. The GDip programs were added to respond to the needs of immigrant engineers needing some Canadian context in their engineering background and for those looking to change their professional focus.

Advising and Course Selection

All graduate students must have an advisor and an advisory committee consisting of no fewer than two members of the Graduate Faculty. Differences for the various degrees are outlined below. Students are first notified of their Advisor in the School's letter informing them of their recommendation for admission. For students whose advisor is listed as "to be determined", the Associate Director, Graduate Studies acts as their temporary advisor when they arrive until one is found for them after the commencement of their studies. The Advisory Committee must be formed by the end of the second month of the student's second semester or registration for semester three will be blocked by Office of Graduate Studies (see Student Timetable Summary). Selection of the Advisory Committee members is done by the Advisor and the student. An **Advisory Committee Appointment Form** (see Forms and External Resources section) must be completed and submitted to the Graduate Program Assistant in engineering. All students are encouraged to ensure the early formation of the advisory committee and preparation of the prescribed form.

The Student, Advisory Committee and the School have specific responsibilities. Those responsibilities are outlined in the Graduate Calendar and should be reviewed by all parties when the committee is formed.

There are specific requirements regarding the minimum number of committee members which is outlined in the Graduate Calendar:

GDip – At least one graduate faulty member of the School of Engineering

MASc/MEng – At least two graduate faculty members of the School of Engineering (one of whom is the Advisor)

PhD – At least two graduate faculty members of the School of Engineering (one of whom is the Advisor) and at least one graduate faculty member of another department within the University

The Advisory Committee is responsible for the development of a suitable program, which must include a prescribed study course list. This is indicated on the **Graduate Degree Program Form,** which is due at the same time as the **Advisory Committee Appointment Form,** by the 20th Class Day of the second semester. In addition, the committee evaluates the proposed project and/or research and ensures that the topic and scope are suitable for the specific degree. Members of the committee are expected to provide assistance and guidance throughout the program and to meet at least once a semester to evaluate the student's progress.

To assist in the development of the course of study, the School posts a draft list of courses for several upcoming semesters (typically 3-5) which can be used for planning purposes. School of Engineering Course list.

Program Information

The School currently offers three graduate degrees as well as two graduate diplomas:

1. Master of Engineering (MEng)
2. Master of Applied Science (MASc)
3. Doctor of Philosophy (PhD)
4. Graduate Diploma (GDip):
   a) Modelling Applications in Water Resource Engineering
   b) Engineering Design of Sustainable Water Resource Systems

The five program fields are available for all graduate degrees:

- Biological Engineering and Biomedical
- Engineering Systems and Computing and Computer Engineering
- Environmental Engineering and
- Water Resources Engineering
- Mechanical Engineering

Complete details regarding degree requirements are found in the Graduate Calendar. Additionally, program details can be found on the School of Engineering website Graduate Tab under Departmental Links.

Master of Engineering

The MEng is a course based Master's program that is broader and has a less-specialized scope. It can be completed on either a full-time or part-time basis. Students undertaking this degree are not normally planning to go on to a PhD. The prescribed program consists of:

1. 5.0 credits in total (typically 8 courses and the Final Project Course)
2. No more than 1.0 credits from senior undergraduate engineering courses
3. No more than 1.5 credits from outside engineering
4. A minimum of 3.5 credits from engineering, including the Final Project Course

For details regarding core course requirements, see the School of Engineering MEng section of the website and go to the link for your field of study. The specific courses taken will depend on the field and will be selected in consultation with your Advisor. In the third semester (prior to the 20th Class Day) the student is required to submit to their Advisor a 3-5 page proposal for their final project along with the MEng Final Project Proposal form found on the SOE graduate forms website. This proposal will form 10% of the final grade in the project course. Failure to submit the proposal will result in a grade of 0 being assigned to this portion of the final project course.

Master of Applied Science

The MASc graduate program is a thesis based degree and is available in full-time as well as part-time studies. The research portion provides advanced learning in the engineering sciences and research methodology through a variety of applied and basic research topics and courses.

The prescribed program of study consists of no fewer than 2.0 credits (typically 4 courses), of which at least 1.5 credits must be at the graduate level, and at minimum 1.0 credit must be engineering graduate courses. In all cases the remaining courses must be acceptable for graduate credit; that is, they must be either graduate courses or senior undergraduate engineering courses.

Doctor of Philosophy

The PhD program prepares candidates for a career in teaching, research, or consulting. The program offers opportunities for advanced research and is available in full-time as well as part-time studies. It provides the opportunity to obtain advanced training in the engineering sciences and research methodology through a variety of applied and basic research topics and courses.

The prescribed program of study consists of no fewer than 2.0 credits (typically 4 courses), of which at least 1.5 credits must be at the graduate level, and at minimum 1.0 credit must be engineering graduate courses. In all cases the remaining courses must be acceptable for graduate credit; that is, they must be either graduate courses or senior undergraduate engineering courses.

Qualifying Examination

Every PhD student must complete a Qualifying Examination early in their studies. Students normally have completed their course requirements before a comprehensive examination is scheduled. This examination should take place as soon as possible in the student's studies, but no later than the end of the student's 5th semester (7th semester for transfer students from an MASc).

The three primary objectives of the qualifying examination are to:

1. assess the student's knowledge in the area of specialization,
2. ascertain the student's ability to integrate his/her knowledge in the context of the area of study, and
3. evaluate the student's ability to conduct independent research.

This examination assists the student by identifying strengths and weaknesses in the student's background and results in recommendations for remedying any identified deficiency in knowledge. The examination is undertaken by the examining committee as outlined in the Graduate Calendar and appointed by the Associate Director, Graduate Studies. The Director or the Associate Director, Graduate Studies will act as chair.

The focus of the qualifying examination will be on the candidate's knowledge of the subject matter pertinent to the research area and the candidate's ability to exercise independent judgement in selecting research procedures. Prior to scheduling the exam, the student will provide the examining committee with their research proposal as approved by their advisory committee. This proposal will include a literature review of the pertinent literature as well as the work proposed by the student.

The examination should normally be held after the student has completed the required courses. At that time the advisory committee will request the Associate Director, Graduate Studies to schedule the examination using the PhD Qualifying Examination Request Form. At the same time the committee will submit an evaluation of the student's performance in the required courses and of the student's potential as a researcher.

The following must be submitted to the SOE Graduate Program Assistant by the student:

1. Qualifying Examination Request form, signed by the Advisory Committee (internal form available on SOE website),
2. Hard copy of the proposal approved by the Advisory Committee, and
3. Confirmation of submission to Turnitin (http://www.turnitin.com).
   In order to make a submission to Turnitin, you must create a student account or log in, then join the following course:

   Class ID: 13748821
   Class enrollment key: PhD.Engg
   Upload your proposal to the Assignment entitled Proposal

The following must be submitted to the Associate Director, Graduate Studies and the SOE Graduate Program Assistant by the student's Advisor:

1. Progress Report from the Advisory Committee on the student's research and list of courses completed, and
2. Suggestions of four areas of examination and possible examiners.

The Associate Director, Graduate Studies will select the five member Examining Committee as outlined in the Graduate Calendar. The Chair/Director of the academic unit (or designate) or the Chair of the Graduate Studies Committee, acts as chair of the Examination Committee *except* when this person is also a member of the Advisory Committee. The examiners are made up of 2 members of the graduate faculty who are not members of the Advisory Committee, and 2 members of the Advisory Committee. Although all 4 can be from the School of Engineering, normally, it is recommended that one of the qualifying examination committee members should be from outside the department in which the student is registered. That person may be a member of the Advisory Committee.

The qualifying examination will include both written and oral components. The written part, taken first, will consist of 4, 1.5-hour, examinations, completed over the course of two consecutive days. The open or closed book examination questions will be submitted by members of the examining committee to the Associate Director, Graduate Studies. If necessary, the Associate Director, Graduate Studies will call a meeting of the examining committee to review the questions

to ensure that there is no undue overlap and that they are of a suitable length to be completed in the allotted time.

Members of the examining committee will have one week to evaluate the written responses from the candidate. If the student's overall performance is satisfactory, the oral examination will be held the following week. The oral examination will not exceed three hours in duration.

The oral examination can explore questions resulting from the written work as well as any additional questions pertinent to the research or area of study.

The results of the examination committee can be in one of the following categories:

1. The candidate has passed without condition, with permission to continue on to the research portion of the work.
2. The candidate has passed with condition that the student must complete certain courses in the area of deficiency identified by the examining committee. The research may continue simultaneously.
3. The candidate has not passed, but may retake the examination (written and oral) by the next semester. This will only be offered once.
4. The candidate has not passed and is asked to withdraw from the program.

The Associate Director, Graduate Studies will forward the decision to the Dean of Graduate Studies. Satisfactory completion of the Qualifying Examination changes the status of the student from a PhD student to a candidate for the PhD degree.

Graduate Diploma

The Graduate Diploma is intended for Canadian engineering graduates needing further education to facilitate a change in their professional career or recent immigrants with an engineering background looking for Canadian educational qualifications.

The prescribed program consists of 2.0 credits (4 courses) acceptable at the graduate level.

Thesis Guidelines

The School of Engineering has no formatting criteria for theses over and above those in place by the Office of Graduate Studies. For complete details regarding thesis content, format and submission procedures, see their Guidelines. Students are encouraged to thoroughly review the style and content requirements before starting the writing of their thesis. Additionally, a lengthy and detailed Submission Checklist is provided and must be followed. The School of Engineering does not require a bound hard copy of the thesis. Students should discuss with their advisors whether they wish to have a bound copy for their records.

The School accepts theses in either monograph or manuscript format at the choice of the student. Guidelines are given by the Office of Graduate Studies.

Theses written in manuscript format must include the following:

- Connecting materials that integrate across the different chapters/articles, including at minimum an overarching introduction and a concluding discussion chapter.
- The student must be the principal or sole author of any included manuscripts and must have had a major or sole role in the design of the research, and the preparation and writing of the manuscripts.

Scope of Master's Thesis

For the Master's degree by thesis, the candidate must submit a thesis based upon research of an approved topic. The thesis must demonstrate the candidate's capacity for original and independent work, and should include a critical evaluation of previous research in the field. The thesis should emphasize new conclusions drawn from the candidate's research.

Scope of PhD Thesis

Candidates for the PhD degree must write a thesis based on research of an approved topic. The thesis is expected to contribute significantly to knowledge in the field, and the candidate must explain this contribution. The thesis must demonstrate mature scholarship and critical judgment and be sufficiently meritorious to warrant publication in reputable scholarly journals in the field.

Transfer Credits

Students who leave an unfinished graduate program elsewhere to enter a graduate program here or who have taken graduate courses as a non-degree student may apply for and receive transfer credit, provided that the courses are relevant (detailed in Section 6 of Admission and Progress Committee Guidelines). The student must submit an Application for Transfer Credits form. Courses cannot have been used for credit towards any degree or honours equivalent qualification, and cannot have been a part of the basic minimum admissions requirement for the University of Guelph graduate program. Students may not complete more than half of their prescribed course requirements outside of the University of Guelph graduate program, either through the Letter of Permission, Ontario Visiting Graduate Student program or advanced credit transfer procedures.

Transferring Programs

As detailed in the Graduate Calendar - Internal Program Transfer Application Procedures, students may apply to transfer between graduate programs. The request for transfer may be initiated as soon as the student's third semester and must be completed by the end of the student's fourth semester of study. This would typically be a transfer from an MEng to MASc program, or an MASc to a PhD program.

To transfer from **MEng to MASc**, please submit the following documentation to the SOE Graduate Program Assistant:

1. Transfer Application form, submitted by the student,
2. A written report of progress in research meeting the criteria outlined in the Graduate Calendar, submitted by the student,
3. A new Advisory Committee Form listing the new/current committee member
4. A letter of support for the transfer, submitted by the Advisor and committee member, and
5. Confirmation of funding, submitted by the Advisor.

In all cases, a transfer fee is payable to the Office of Registrarial Services when the application is submitted to the Office of Graduate Studies.

To transfer from **MASc to PhD** (when the student does not hold the equivalent of a master's degree from a Canadian University), the student must meet the minimum undergraduate and graduate GPA's, and must have completed the minimum number of graduate level course credits, as outlined in the Graduate Calendar. To initiate the transfer, please submit the following documentation to the SOE Graduate Program Assistant:

1. Transfer Application form, submitted by the student,
2. A written report of progress in research meeting the criteria outlined in the Graduate Calendar, submitted by the student,
3. A new Advisory Committee Form listing the new additional committee member, submitted by the student,
4. A letter of support providing commentary on the candidate's aptitude for doctoral-level research, and on the suitability of the master's research project for expansion to a doctoral project, submitted by the Advisor and committee members and
5. A doctoral-level Funding Form for 9 semesters for full-time students, submitted by the Advisor.

Once the documentation has been received and reviewed, the Associate Director, Graduate Studies will meet with the Advisor to discuss the transfer and resolve any required changes to funding. Lastly, the Associate Director, Graduate Studies will meet with the student to discuss the transfer. Support for transfers from GDip to MEng or MASc, MEng to MASc or MASc to MEng are decided by the Associate Director, Graduate Studies. Support for transfers from MASc to PhD studies are decided by the Graduate Committee.

Leave of Absence

It may be necessary and appropriate for students to take a leave of absence from their studies at some point. Multiple semester requests (normally not more than three semesters) are granted for a variety of reasons, the most common of which are:

- parental leave,
- documented medical,
- attending other university programs (e.g. teachers' college),
- financial/employment constraints, and
- personal/family circumstances.

Open-ended requests or repeat requests for multiple semester leaves when the student is vague regarding plans for completing the degree are normally denied, with the suggestion that withdrawal from the program until more definite plans are in place would be more appropriate. In this case the student would need to reapply for admission to the program. The student should discuss the Leave of Absence with their Advisor first and complete a Leave of Absence and Withdrawal Application. Students applying for a Leave of Absence must return their office keys (if applicable) before their paperwork will be processed. Office space will be re-allocated based on the policy upon the student's return.

Graduate Teaching Assistantships

A valuable experience in many graduate students time at Guelph is acting as a Graduate Teaching Assistant (GTA) for a course they are familiar with. Detailed procedures for GTAs are given under the financial section of this handbook. GTA positions are typically posted in July and November for the fall and winter semesters, respectively. Students must apply for these positions and they are awarded on a competitive basis according to qualifications and experience.

Timetable

The table below summarizes typical target times to complete the various graduate degrees. Each student may vary from this but it is provided for overall guidance and planning purposes.

Semester	Item to be completed	Additional Information/Resources
1	Student Orientation 1st to 2nd week of start of semester (fall and winter only). Attendance is strongly recommended	Student is encouraged to set up a meeting with their Advisor in the first month of the semester
2	**Advisory Committee Appointment Form** and **Graduate Degree Program Form** due by 20th Class Day of second semester. Forms located on UG website noted in Forms and External Resources section below. Registration in semester 3 blocked by OGPS if not submitted	Refer to Graduate Calendar Degree Requirements, for MEng also refer to SoE website for list of core courses. Documents submitted to Graduate Program Assistant
3	MEng student – complete and submit 3-5 page Final Project Proposal to Advisor (worth 10% of final project grade) by 20th Class Day	MEng Final Project Proposal form found on SOE Graduate Forms website
4	MEng Students – should be completing coursework and moving towards starting final project to be completed in this semester or semester 5	When completing degree, submit **MEng Examination Request form**, confirmation of submission to Turnitin, and one hard copy of project to Graduate Program Assistant a minimum of 2 weeks in advance of desired presentation date.
5	MEng Students – final project MASc Students – thesis defense PhD Students – working on and/or submitting proposal to complete QE (Note: UG requirement is that it be completed in the 4th semester or no later than 5th semester or 7th semester for transfer students.)	See above Submit **Examination Request Form,** confirmation of submission to Turnitin, and one hard copy of thesis to Graduate Program Assistant 4 weeks in advance of desired defense date. Submit Proposal (hard and electronic copy via Turnitin) and **PhD Qualifying Examination Request Form** to Graduate Program Assistant.
6	MASc and MEng students – have reached completion period for degree	
7	MEng or MASc students are noted as being beyond their program time. Students wishing to continue will require a **Plan of Study**.	Registration in future semesters is blocked by OGPS until a Plan of Study is submitted and approved.
9 - 12	PhD Students – thesis defense	Submit **Examination Request form,** confirmation of submission to Turnitin, and two hard copies of thesis to Graduate Program Assistant 8 weeks in advance of desired defense date. Advisor to submit to Associate Director, Graduate Studies a list of three potential external examiners.
13	PhD Students are noted as being beyond their program time. Students wishing to continue will require a **Plan of Study**.	Registration in future semesters is blocked by OGPS until a Plan of Study is submitted and approved.

General School of Engineering Information

Offices

Based on Advisor recommendation, each full-time PhD and MASc graduate student is supplied with a shared office space for study. Each office is equipped with a desk and filing cabinet for each student. Offices are to be kept neat and tidy at all times. They are not to be used for storage for personal items. With growing numbers of graduate students the pressure for office spaces has been increasing. Thus, spaces are given based on a priority system established by the Graduate Studies Committee. Full-time students still within the recommended time frame for completion (six semesters for an MASc and twelve for a PhD) are given the first priority when allocating office space. Telephone extensions are sometimes available in the office dependent upon the willingness of the advisor to finance this expense or whether the students in the office wish to pay for this service. Keys to the office will be supplied for a $40 deposit. The key deposit is refunded upon return of the keys at the end of the student's degree.

MEng students will not receive a designated office space, however they will be able to use the graduate computer lab as a working space. Keys to the mailroom will be supplied for a $40 deposit. The key deposit is refunded upon return of the keys at the end of the student's degree.

Office allocation and keys are obtained from the Receptionist, Martha Davies (room THRN 1401). Access cards/key fobs will be supplied to all graduate students for access to the building and appropriate labs.

Lab Usage

The following procedures have been implemented for safety and security reasons; failure to comply with them will result in loss of lab privileges.

Before any work begins:

- Your advisor will introduce you to the laboratory technician responsible for the laboratory that you wish to work in.
- Discuss the safety aspects of your experiment with your advisor and the technician. Complete the **Lab Access Form** which is available on the Safety Webpage of the SOE website. This form must be submitted before any lab work begins and at the beginning of each semester to John Whiteside in room 1136. The form must be signed by the laboratory technician and your advisor. Include an Experimental Outline Form with the Lab Access Form, this form can also be found on the "safety Webpage". The Experimental Outline Form is submitted only once unless there is a change to your experiment and should be resubmitted at that point. The forms must also be completed to the satisfaction of John Whiteside and the technician responsible for the Lab that you are working in. At this point your student identification card will be enabled to unlock the door to the lab that you will be working in.

- All graduate students must complete the WHMIS course offered by the University, preferably during their first semester of studies. This course is offered on line and can generally be completed in under 2 hours. Additional safety courses are required to be completed to work in the labs and are listed on the Lab Access Form.

Starting your experimental work:

- The laboratory technician will assign you laboratory space and give you an orientation of the lab.
- Avoid working alone during the day and for afterhours work you must work with a partner.
- It is your responsibility to keep your lab space clean.
- Students are encouraged to get involved in the fabrication and/or the setup of equipment required in their projects. Machine shop facilities are available to students under the supervision of the Shop Machinists Ken Graham and Dave Wright. A student wanting to work in the shop must first complete a Yellow Card shop safety course to use the simple machines and a Red Card training course to use the more complicated mills, lathes and CNC machines. These courses are offered at the beginning of each semester, to register you only need to add your name to the sign up sheets posted at the entrance to the shop.

Once your experiment is complete:

- Inform the lab technician that you are finished.
- You must clean up your lab space to the satisfaction of the technician, regardless if the experiment is to continue with another researcher or not.
- Indicate to the technician what chemicals, biological materials or samples remain from your experiment.

Computer Resources

Being an Engineering graduate student means you have access to a wide variety of computing resources. These include:

- A dedicated graduate computing lab with 12 workstations
- More than 250 computers in 6 undergraduate computer labs
- 30 ‘virtual’ workstations for remote software access using VMware View
- 24-hour access to all computer labs using your student card
- 8 gigabytes of network storage (your 'H drive')
- Campus-wide wireless internet access
- A dedicated graduate printer/photocopier

Please note these important rules for using computing resources:

- Food and drink are not allowed in the computer labs at any time. An exception will be made for drinks in a closed, re-sealable container such as a reusable water bottle or a coffee mug with a lid.
- Do not unplug, reconfigure, or tamper with any computer cables or hardware.
- Do not access or attempt to access anyone else’s account or data

- While personal use of the computers is allowed, downloading of any copyrighted materials is strictly prohibited.
- Use of any computers within the School is subject to the acceptable use policies developed by the University of Guelph.

Violation of computer lab rules could result in a suspension of your computer access.

Computing Access

All graduate students actively registered in an Engineering program are automatically given access to the lab computers once their registration is processed. Your username and password will be the same as for other University services such as CourseLink, GryphMail, WebAdvisor, etc. If you are not able to login, please obtain support using one of the methods listed below.

Obtaining Computer Support

Computing support for SOE computing systems is primarily provided by the School's system administrator Matthew Kent who can be reached in the following ways:

- By emailing soeithelp@uoguelph.ca (preferred)
- In person in room THRN 2363
- By phone at extension 54900

NOTE: To obtain the fastest support, please make sure to include all pertinent information in your email such as the room number, computer name, software name and version, and steps to reproduce the problem.

Computing services supported directly by the School include:

- Computer access (with a working central login account)
- Graduate computer lab technical support
- Network storage
- Software purchasing and installation
- Audio/visual equipment in seminar rooms and computer labs
- Research-specific computing systems
- Physical network access
- Remote access using VMware View

Some services are not directly provided or supported by the School. These include:

- Central login credentials (lost password, compromised accounts, etc)
- Wireless networking
- Wired phones
- E-mail (GryphMail)
- CourseLink
- WebAdvisor
- Personal web hosting

Technical support for these services is provided by the University's Computing and Communication Services (CCS) department. They can be reached by phone at extension 58888,

by emailing 58888help@uoguelph.ca, by visiting the help desk in the library, or on the web at http://www.uoguelph.ca/ccs/.

Finally, the School has an Information Technology web page which provides instructions for tasks such as accessing remote workstations, downloading software packages, and obtaining support.

Photocopying and Printing

The Graduate Engineering Society (GES) manages a digital photocopier/printer in the graduate office hallway. This machine is available to all registered graduate students. Students who wish to use it may get in touch with the GES to arrange for print credits to be added to their account. All students are expected to operate according to the copyright regulations. These regulations will also protect the student's thesis and any other publications.

School of Engineering Vehicle Usage

The School has a pick-up truck available for rent to be used for activities associated with the running of the School only. It may be reserved by signing the reservation sheet in the machine shop, a charge number from the students advisor must be included as well as the advisors name clearly printed on the reservation sheet. Upon returning from a trip the student is required to record the date, distance traveled, destination and signature in the log book found in the glove compartment. General University policy prohibits use of the vehicles for personal use or for transportation of passengers not on University business. Vehicles may normally not be taken home but if it is necessary to do so, approval is required from the Director for occasional occurrence or from the Dean or Director for continued use. Anyone operating a University vehicle must have a valid G driver's licence. In the case of a vehicle more than 11,000 kg G.V.W., or a combination of vehicles, provided that the towed vehicles are not more than 4,600 kg G.V.W., a D licence is required. For insurance purposes the student must complete "**An Assignment Form**" before being allowed to use university-owned vehicles. This form is available from Barry Verspagen in room 1138.

Administrative Personnel

Guidance regarding your research and courses will normally be provided by your Advisor (and Advisory Committee). Your primary sources for information within the School regarding graduate studies include:

Dr. Bahram Gharabaghi, Associate Director Graduate Studies
Room: 2417
x. 58451, soeadgr@uoguelph.ca

You Jia Lee, Graduate Program Assistant | MASc & PhD
Room: 1405
x. 56187, soegrad@uoguelph.ca

Natasha Wismark, Graduate Program Assistant | MEngg
Room: 1407
x.52404, soegrad@uoguelph.ca

Robin Van Alstine, Academic & Administrative Support Assistant
Room: 1404
x. 58764, soegradm@uoguelph.ca

Martha Davies, Receptionist
Room: 1401
x. 52438, marthad@uoguelph.ca

Chrissy Shannon, Human Resources & Finance Administrator
Room: 2404
x. 54687, soehr@uoguelph.ca

James Bracken, Purchasing Clerk
Room: RICH 1503
x. 53720, soepurch@uoguelph.ca

Samantha French, Purchasing Clerk
Room: RICH 1505
x. 58549, soetrav@uoguelph.ca

Phil Watson, Lab Manager
Room: 1140
x. 53870, pwatson@uoguelph.ca

Joel Best, Information Technology Manager
Room: 1416
x. 54234, jbest@uoguelph.ca

Paula Newton, Undergraduate Program Assistant
Room: 1406
x. 56572, pnewton@uoguelph.ca

Additional contacts within the School include:

Dr. John Runciman, Director
Room: 2408, x.52430, soedir@uoguelph.ca

Heather Ouellette, Secretary to the Director
Room: 2406, x.53023, soeexec@uoguelph.ca

Gabi Bohoczki, Administrative Assistant
Room: 2412, x.53705, soeadmin@uoguelph.ca

For a complete list of faculty, staff and technicians, see the School of Engineering Website Faculty and Staff tab.

Forms and Additional Resources

There are two locations for all forms and documents required for graduate studies:

1. SOE Website, forms include:
    a. MEng Final Project Proposal Form
    b. MEng Examination Request Form
    c. PhD Qualifying Examination Request Form
    d. SOE Graduation Clearance Checklist
    e. Lab Access Form
    f. Work Outline Form
    g. Research Information Sheet

2. Office of Graduate Studies Forms and Documents, common Graduate Records forms used include:
    a. Advisory Committee Appointment & Graduate Degree Program Form
    b. Course Add/Drop / Course Waiver Request
    c. Full-Time/Part-Time Transfer Application
    d. Graduate Student Progress Report
    e. Leave of Absence and Withdrawal Application
    f. Ontario Visiting Graduate Student Application
    g. Petition for Academic Consideration
    h. Plan of Study
    i. Transfer Credit Application
    j. Transfer Application (Study Option/Degree Program Transfer)

External/Additional Resources

1) Graduate Engineering Society

2) Office of Graduate Studies, University Centre, 3rd Floor

3) Computing & Communications Services - The mission of CCS is to provide high quality information technology infrastructure and service in support of the learning, teaching, research and administrative goals of the University.

4) Library Services - The Library web site has a comprehensive listing of resources available

5) Counselling Services

6) Student Health Services

7) Writing Services

Timelines and Procedures for Completion

In order to arrange final examinations, it's critical that sufficient time is allowed and therefore it is necessary to adhere to the time frames below. **All SOE graduate students will be required to complete an SOE Clearance Checklist before the Director will release final grades/paperwork to the Office of Graduate Studies for graduation.** The checklist does not need to be completed prior to your defense but before you submit your final thesis to the Office of Graduate Studies.

Ph.D. Final Examination:

A minimum of two months in advance, please submit the following to the SOE Graduate Program Assistant:

- Completed Examination Request Form, signed by the Advisory Committee
- 2 bound copies of the thesis draft
- Confirmation of submission to Turnitin (instructions on page 23)
- Abstract (in Word format) to soegrad@uoguelph.ca

It is the student's responsibility to ask the examining committee whether they prefer hard or soft copies of the thesis and provide them directly.

The Advisor will submit a list of 3-4 suggested external examiners to the SOE Associate Director, Graduate Studies.

The SOE Associate Director, Graduate Studies will ensure the SOE course requirements have been met for the Ph.D. degree, arrange for an External Examiner and Examination Committee and schedule a date for the final examination.

M.Sc./M.A.Sc. Final Examination:

A Minimum of four weeks in advance; please submit the following to the SOE Graduate Program Assistant:

- Completed Examination Request Form, signed by the Advisory Committee
- 1 bound copy of the thesis draft
- Confirmation of submission to Turnitin (instructions on page 23)
- Abstract (in Word format) to soegrad@uoguelph.ca

It is the student's responsibility to ask the examining committee whether they prefer hard or soft copies of the thesis and provide them directly.

The SOE Associate Director, Graduate Studies will ensure the SOE course requirements have been met for the M.A.Sc. degree, arrange for an Examination Committee and schedule an examination date.

M.Eng Final Presentation:

A minimum of two weeks in advance, submit the following to the SOE Graduate Program Assistant:

- Completed MEng Examination Request Form, signed by the Advisory Committee
- 1 hard copy of the final project
- Confirmation of submission to Turnitin (instructions on page 23)
- Abstract (in Word format) to soegrad@uoguelph.ca

The SOE Associate Director, Graduate Studies will ensure the SOE course requirements have been met for the M.Eng. degree, arrange for an Examination Committee and schedule an examination date.

Scheduling of examinations during the summer months: In order to plan for examinations during the summer semester/early September; advisors need to provide a list of their potential graduating students by June 1st to the Graduate Program Assistant. Otherwise students cannot be guaranteed an examination date by the end of the summer.

Turnitin Report

All thesis draft and final project submissions must also be submitted to the department through Turnitin. The link for Turnitin is: http://www.turnitin.com/. In order to make a submission to Turnitin, you must create a student account or log in. If you have a teaching assistant account, you will not be able to use it for submission purposes. Then, join the following appropriate course (please note that the password is case sensitive):

PhD Students

Class ID: 13748821
Class enrollment key: PhD.Engg

Upload your thesis to the Assignment entitled Thesis

MASc Students

Class ID: 13748789
Class enrollment key: Thesis

Upload your thesis to the Assignment entitled Thesis

MEng Students

Class ID: 13748792
Class enrollment key: Project

Upload document to the Assignment entitled Final Project

Guidelines for MEng Oral Examination

The Examination Committee is made up of two graduate faculty members who form the student's advisory committee. The student's Advisor will take on the role of Chair and ensure that the oral examination is conducted in a professional manner. The details on the time allocation to the candidate and examiner are given in the following paragraphs. It is also the responsibility of the Chair to ensure that examiner(s) adhere to the allocated time and that the final grade and proper form are submitted to the Graduate Program Assistant, School of Engineering.

The student will be given a numerical grade, based on the written and oral presentation. Grades must be submitted immediately following the oral presentation. **Any changes to the written portion should have been addressed prior to the oral presentation.** This is a project, rather than a thesis, and does not need to be submitted to Office of Graduate Studies.

MEng Oral Examination:

Introduction - 5 minutes
Student presentation - 30 minutes (maximum)

Question Period:
Audience – 10 minutes
Examination Committee – 40 minutes

Ordering of Questions in the Committee:
There will be one round of questions by the committee. The questioning by the Committee will be in the following order:

Advisory Committee Member – 20 minutes
Chair/Advisor – 20 minutes

Deliberation – 30 minutes

Maximum duration of oral examination – 2 hours

Guidelines for Oral Examination of Thesis (MASc and PhD)

Role of the Chair

The chair of the examination committee is the official representative of the Assistant Vice-President (Graduate Studies). The chair serves to administer the examination according to the approved format of the program. The chair does not serve as an additional examiner.

It is the responsibility of the Chair to ensure that the oral examination is conducted in a professional manner. The Chair must ensure that proper forms from the Office of Graduate Studies are available and duly completed and signed by the Examination Committee. The Chair should ensure that adequate time is allotted to the candidate for presentation of research findings, and to the examiners for questions. The details on the time allocation to the candidate and examiners are given in the following paragraphs. It is also the responsibility of the Chair to ensure that examiners should adhere to the allocated time.

In unforeseen circumstances where a Committee member is unable to attend the examination (e.g., due to sickness) either in person or by video/teleconference, the Chair will attempt to receive questions to ask on behalf of the absent member, to be answered by the student to the satisfaction of the examiners present. If this absent member is the External Examiner of a PhD thesis examination, and the written thesis Appraisal and/or questions to ask have not been received, the examination should be postponed.

If during the examination the behaviour of either the candidate or the examiner(s) is unprofessional, the Chair should provide a warning. If the unprofessional behaviour continues, the Chair should stop the examination and report to the Graduate Coordinator.

The Chair should ensure recommendations for revision of the thesis are completed, and should withhold their endorsement of the examination (through signing the Recommendation Form) until such time.

Role of the Examiner(s)

The examiners have the responsibility to review the thesis as outlined in the University Guidelines for thesis evaluation. If an examiner feels that there is a major problem with the thesis, the examiner should inform the candidate in writing with a confidential copy only to **the advisor and Associate Director, Graduate Studies**. If the candidate and the examiner cannot resolve the problem before the oral examination, the Graduate Coordinator will act as facilitator. If there is no agreement, the examination can go forward at the student's request, or postponed on the advice of the Graduate Coordinator.

Maximum Duration of Oral Examination

PhD Examination – 3.5 hours
MASc Examination – 2.5 hours

PhD Oral Examination

Introduction by Chair – 5 minutes
Presentation of research findings/scholarly work by candidate – 30 minutes (maximum)

Public Question Period – 10 Minutes
Break – 5 minutes (members of the public are free to leave)
Examination Period (questions only from examiners) – 2 hours 40 minutes

Ordering of Questions in the Committee:
There will be two rounds of questions by the committee. The questioning by the committee will be in the following order:

1) External Examiner
2) Member of the Graduate Faculty (not on the Advisory Committee)
3) Member of the Advisory Committee
4) Advisor or second member of the Advisory Committee

Suggested time allotted to examination committee members:

Examiner	Round 1	Round 2
External	25 minutes	10 minutes
Graduate Faculty	20 minutes	10 minutes
Advisory Committee Member	20 minutes	10 minutes
Advisor	20 minutes	10 minutes

Deliberation – 35 minutes

Note: 10 minutes break is recommended for the candidate and exam committee members between Round 1 and Round 2.

MASc Oral Examination

Introduction by the Chair – 5 minutes
Presentation of research findings/scholarly work by candidate – 30 minutes (maximum)

Public Question Period - Audience – 10 minutes
Break – 5 minutes (members of the public are free to leave)
Examination Period (questions only from examiners) – 1 hour 40 minutes (3 member examining committee)

Ordering of Questions in the Committee:
There will be two rounds of questions by the committee. The questioning by the committee will be in the following order:

1) Member of the Graduate Faculty (not on the Advisory Committee)
2) Member of the Advisory Committee
3) Advisor or second member of the Advisory Committee

Suggested time allotted to examination committee members **should not be exceeded**.

Examiner	**Round 1**	**Round 2**
Graduate Faculty	15 minutes	10 minutes
Advisory Committee Member	15 minutes	10 minutes
Advisor	15 minutes	10 minutes

Deliberation – 25 minutes

Note: 10 minutes break is recommended for the candidate and exam committee members between Round 1 and Round 2.

Post Defense/Presentation Procedures

MASc/PhD

Following your defense, you will complete the post-defense revisions to your thesis. Once complete, your Advisor will sign off on the Office of Graduate & Postdoctoral Studies (OGPS) paperwork and return it to the Graduate Program Assistant to obtain the signature of the Director. When the paperwork is ready and the student has returned the completed SOE Clearance Checklist, the Graduate Program Assistant will submit the defense paperwork to OGPS. The student must submit additional documents to OGPS directly and submit the thesis and any supplementary files to the Atrium. Review the **OGPS Submission Checklist** carefully to ensure that you have followed all OGPS procedures and follow the steps for thesis submission.

If you wish to apply for restrictions on the circulation of your thesis due to patents pending or other circumstances, you must fill out and submit a Request to Restrict Circulation of Thesis. This form must be completed and submitted to OGPS well in advance of your final submission.

MEng

Following your presentation, you will be assigned a grade which will be processed and reflected on your transcript. The grade will not be submitted to the Registrar's Office until you have returned the completed SOE Clearance Checklist**.** Early completion of your final project will not expedite your graduation process. Your confirmation of graduation will be processed at the end of the semester with all other courses. Please plan visa's and school applications accordingly.

Financial Information and Awards

The School of Engineering does not offer funding for:

1. Students completing their degree on a part-time basis
2. Students enrolled in the Graduate Diploma programs
3. Students enrolled in the MEng program (funding is not typical, but does happen **in rare instances**)

Graduate Research Assistant (GRA)

The University of Guelph does not have a minimum funding level for MASc students, but the School of Engineering has a minimum funding level of $8,000 per year over 5 semesters and aims to provide (but does not guarantee) $16,500 per year for 5 semesters. The University of Guelph has a minimum funding policy for PhD students of $17,500 per year for 9 semesters. The School of Engineering aims to provide (but does not guarantee) minimum funding of $25,000 per year for 9 semesters. The advisor provides these funds from his/her available research funding. It is expected that the student's project will contribute directly to the research area that is the source of the funding. The amount above the minimum stipend paid to a particular student depends upon provisions of the granting agency, but is not to exceed the maximum amount set by the Director.

It is normally expected that a student receiving a GRA devotes an equivalent of approximately 20 hours per week on thesis research including literature review, experimentation, and writing associated with the work. It is understood that less research time is available during the semester in which the student is enrolled in courses and more time during the remainder of the residency period.

Vacation time (a maximum of two paid weeks per year) must be approved by the Advisor in writing. Students receiving GRA support are expected to work full time on their research between semesters.

Graduate Teaching Assistant (GTA)

All GTA positions are covered by CUPE 3913, Unit 1. Positions will be posted within the School for a minimum of ten (10) business days. The posting will identify: the Union bargaining unit to which the posting applies; the course name and number; qualifications (academic and/or professional) required; salary; level of Graduate Teaching Assistantship (i.e., full or portion of, if applicable); where to forward the application, and the application deadline.

All students must have completed the WHMIS course to be considered for a GTA position.

In all cases of job competition, the University's selection criteria shall include but not be limited to: qualifications (academic and professional), teaching competence, capability, skill and ability, and prior relevant experience. When applying, please attach a current CV which outlines your qualifications for each job. In cases where applicants are considered to be relatively equal in the opinion of the University, the senior applicant shall be awarded the work assignment.

Each GTA will receive a letter confirming the following: commencement and termination date of work assignment; level of Graduate Teaching Assistantship (i.e., full or portion of); hours of work; salary; course number(s); name of immediate supervisor(s).

A full GTA consists of a total of 140 hours. Duties may include, but not be limited to: preparing and conducting tutorials, laboratories and seminars; grading assignments, reports and examinations; supervising field trips; class leadership; consultation/office hours. The remuneration for a GTA is broken down as 2/3 salary and 1/3 bursary.

Graduate Service Assistant (GSA)

Although the calendar indicates that service provided under the GSA category does not contribute directly to the student's thesis, the School's general position is that the work will contribute to the thesis when it is directed by the advisor of the student. When it is the desire of the project director that the work not be used as part of the thesis, that fact must be clearly explained to any potential GSA before starting the work. Before accepting a service assistantship from a faculty member other than his or her advisor, he or she must obtain permission from their advisor.

A full service assistantship consists of not more than 140 hours per semester, while the rate of remuneration is decided by the project director. The University provides guidelines for remuneration based on the employee's qualifications. These are available from the Administrative Assistant.

NOTE: Visa students must obtain a valid Social Insurance number to receive GRA, GTA or GSA pay. To apply for a number, students must produce their study permit as well as an Application for a Social Insurance number to Service Canada. The Graduate Program Assistant will complete the application upon receipt of a copy of the study permit and other information required. Since the University considers the GRA to be similar to a scholarship rather than remuneration for service, the student is not an employee of the University and does not receive the corresponding benefits.

Scholarships, Fellowships and Bursaries

All students are encouraged and expected to apply for all scholarships, fellowships and bursaries for which they are eligible. Not only are these awards prestigious but they also provide a student with greater freedom in selecting and pursuing his or her research interests.

Please note that visa and part-time students are not eligible for some awards which are open only to Canadian citizens or permanent residents of Canada and students completing their degree full-time.

Some of the externally awarded Fellowships/Scholarships include:

1. Natural Sciences and Engineering Research Council (NSERC) of Canada Scholarships and Fellowships - competition held annually in October
2. Ontario Graduate Scholarships (OGS) internally awarded

More information regarding external scholarships can be found on the Office of Graduate Studies site.

This is a partial listing of the Fellowships/Scholarships available to Engineering Students, showing the application deadlines:

1. December 6th Memorial Graduate Scholarship – June 1
2. Engineering Alumni Scholarship – June 1
3. Lana McLaren/Richard Reynolds Memorial Scholarship – June 1
4. Mr. & Mrs. William Parker Scholarship – June 1
5. P.H. Southwell Research Travel Grants – June 1

For complete details, please see the Graduate Awards and Financial Assistance section of the Graduate Calendar. More specifically, review the University-Wide Internal Awards and the College of Engineering and Physical Science Internal Awards sections.

The Graduate Award Search is another great resource which allows students to search for University-wide or College specific Entrance, In-Course or Travel awards. In addition, there is a citizenship filter which allows visa students to view awards they may be eligible for.