School of Engineering

MASc/PhD Graduate Handbook

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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, and MEng 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.

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 and international students.

New Students

If you received a conditional offer of admission, you will need to ensure that required final documents are forwarded to the Office of Graduate & Postdoctoral Studies by the 1st class day of your entry semester. Please refer to your offer of admission for the list of documents you are required to submit. You will not be able to register until these final documents have been received by the Office of Graduate & Postdoctoral Studies.

To help you get settled, the Office of Graduate & Postdoctoral Studies has a New Student Guide, which provides step by step instruction on how to submit your final documents, select courses, pay fees and get your ID card.

Orientation

The Office of Graduate & Postdoctoral Studies holds a Graduate Student Orientation session each fall semester, as well as another orientation session specific to International Graduate Students. Please check your University of Guelph email, the Graduate Studies website and the Graduate Studies Facebook page so you do not miss these important events.

The School of Engineering also holds a Graduate Student Orientation for new students each semester, typically in the first week of classes. Please monitor your University of Guelph email for more details as your entry semester approaches.

Advising

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. The Advisory Committee must be formed by the 20th Class Day 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** must be completed online through GryphForms. 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:

MASc – At least two Graduate Faculty members (one of whom is the Advisor)

PhD – A minimum of three Graduate Faculty Members (one of whom is the Advisor) and it is recommended that one be from outside the student's home department

Registration and Course Selection

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 initiated automatically after the **Advisory Committee Appointment Form** has been submitted through GryphForms and approved within SOE**.** Both forms are due by the 20th Class Day of the second semester. The Advisory Committee evaluates the proposed 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.

Registration

Registration for courses is done electronically through Student Planning, which is accessed through WebAdvisor. Student Planning allows students to check their program requirements, plan their degree, track their academic progress and select their courses. Please refer to the Graduate Calendar Schedule of Dates for the course selection period and deadline. To activate registration, students must select either:

- UNIV*7510 Active Full-time Registration (if admitted to a full-time program), or
- UNIV*7520 Active Part-time Registration (if admitted to a part-time program)

In addition to this basic selection, students must be registered in at least one other course.

- UNIV*7500 Research/Writing
- Or any real course for which an active section exists

For those that need assistance with the registration process, Registrarial Services offers detailed Video Tutorials and Help Guides as well as FAQs for Students.

Students who plan to register for undergraduate courses or courses for audit must do so by obtaining Instructor Consent on a Graduate Add/Drop - Course Waiver Request form. Completed undergraduate course waivers must be sent to the Graduate Program Assistant (soegrad@uoguelph.ca) and completed audit forms may be submitted directly to Enrolment Services.

A mandatory online course, UNIV*7100 Academic Integrity, is required of all graduate students entering the first semester of their graduate program. Students are automatically enrolled, and must complete the course by the 20th Class Day through Courselink. Access to this on-line course will begin on the first day of scheduled classes for the semester.

Ontario Visiting Graduate Student (OVGS) Plan

The Ontario Visiting Graduate Student Plan allows a graduate student of an Ontario university (Home University) to take graduate courses at another Ontario university (Host University) while remaining registered at their own university. The course(s) selected must be at the graduate level and required for the student's degree program, and may not be an 'extra' or 'audit' course for the student. Students may not complete more than half of their prescribed course requirements outside of the University of Guelph, either through Letter of Permission (outside of Ontario), OVGS (within Ontario), or advanced credit transfer procedures.

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.

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

Students may not function as a graduate student while on a leave of absence, including all research/writing activity and completion of any incomplete courses. In addition, they may not make use of University resources, either personnel or physical in connection with their graduate program.

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.

International students are encouraged to consult their study permit and meet with an [International Student Advisor](#) before applying for a Leave of Absence.

Program Information

The School currently offers a course-based Masters and two research-based graduate programs:

1. Master of Engineering (MEng)
2. Master of Applied Science (MASc.Engg)
3. Doctor of Philosophy (PhD.Engg)

The six program fields are available for all graduate degrees:

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

In addition to the above programs, an interdepartmental program and several collaborative specializations are available:

Interdepartmental Program:

- [MSc Food Safety and Quality Assurance](#)

Collaborative Specializations:

- [International Development Studies](#) (MEng, MASc and PhD)
- [Artificial Intelligence](#) (MASc)
- [Regenerative Medicine](#) (MASc, PhD)
- [One Health](#) (MASc, PhD)

Master of Applied Science

The MASc graduate program is a research 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 combination of course work, applied research, and thesis writing.

The prescribed program of study must consist of no fewer than 2.0 credits, of which at least 1.0 must be engineering graduate courses. Of the remaining 1.0 credits, 0.5 credits must be at the graduate level, and the other 0.5 credits may be graduate credits or senior undergraduate engineering credits. Depending on the student's background, the advisory committee may specify more than four courses, including undergraduate make-up courses. If make-up courses are deemed necessary, they will be considered additional courses.

Complete details regarding degree requirements are found in the Graduate Calendar section on the MASc.Engg Program. Additionally, program details can be found on the School of Engineering website on the MASc.Engg program tab.

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 combination of course work, independent research, a qualifying examination, and the production and defence of a research dissertation.

The prescribed program of study must consist of no fewer than 2.0 credits in addition to those taken as part of the MASc degree. At least 1.0 of the credits must be engineering graduate courses. Of the remaining 1.0 credits, 0.5 credits must be at the graduate level, and the other 0.5 credits may be graduate credits or senior undergraduate engineering credits. Depending on the student's background, the advisory committee may specify more than 2.0 credits, including undergraduate make-up courses. If make-up courses are deemed necessary, they will be considered additional 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 a written 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 (soegrad@uoguelph.ca) 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,
3. Electronic PDF submission of the proposal to soegrad@uoguelph.ca, and
4. 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: 41024464
   Class enrollment key: PhD.Engg
   Upload your proposal to the Assignment entitled <u>Proposal</u>

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

1. Written evaluation of the quality of the student's research performance to date and of the student's potential as a researcher, as well as a 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. Recommendations may be made to the Advisory Committee if any minor areas of deficiency are identified by the examining committee.
2. The candidate has not passed, but may retake the examination (written and oral) by the next semester. This will only be offered once.
3. 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.

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 after the thesis defence is complete. 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.

Interdepartmental Programs

Food Safety and Quality Assurance

The School of Engineering participates in the MSc program in food safety and quality assurance. Those faculty members whose research and teaching expertise includes aspects of food safety and quality assurance may serve as advisors for MSc students. Please consult the Graduate Calendar Food Safety and Quality Assurance listing for a detailed description of the MSc program.

Collaborative Specializations

International Development Studies

The School of Engineering participates in the MEng, MASc and PhD collaborative specialization in International Development Studies (IDS). The International Development Studies collaborative specialization provides an interdisciplinary framework for the study of international development combining training in a selected academic discipline with exposure to a broad range of social science perspectives. This collaborative specialization will add the designation "International Development Studies" to your program. Applicants apply directly through the School of Engineering and must meet the University of Guelph and department program admission requirements. Students should consult the Graduate Calendar International Development Studies listing to confirm the IDS collaborative specialization requirements.

Artificial Intelligence

The School of Engineering participates in the collaborative specialization in Artificial Intelligence. MASc students wishing to undertake thesis research with an emphasis on artificial intelligence are eligible to apply to register concurrently in Engineering and the collaborative specialization. Students should consult the Graduate Calendar Artificial Intelligence listing for more information.

Regenerative Medicine

The School of Engineering participates in the collaborative specialization in Regenerative Medicine. MASc and Doctoral students wishing to undertake thesis research or their major research paper/project with an emphasis on regenerative medicine are eligible to apply to register concurrently in Engineering and the collaborative specialization. Students should consult the Graduate Calendar Regenerative Medicine listing for more information.

One Health

The School of Engineering participates in the collaborative specialization in One Health. Master's and Doctoral students wishing to undertake thesis research or their major research paper/project with an emphasis on one health are eligible to apply to register concurrently in Engineering and the collaborative specialization. Students should consult the Graduate Calendar One Health listing for more information.

Transferring Programs

As detailed in the [Graduate Calendar](#), 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 ([Study Option Transfer](#)), or an MASc to a PhD program ([Degree Program Transfer](#)), though it is also possible to transfer from MASc/PhD to MEng.

MEng to MASc Transfer

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

1. Study Option [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 letter of support for the transfer, submitted by the Advisor and committee member(s), and
4. Confirmation of funding, submitted by the Advisor.

Support for transfers from MEng to MASc or MASc to MEng are decided by the Associate Director, Graduate Studies. In all cases, a transfer fee is payable to the Office of Registrarial Services when the transfer is approved by the Office of Graduate Studies. An [Advisory Committee and Graduate Degree Program GryphForm](#) also must be submitted after the transfer is approved.

MASc to PhD Transfer

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 grade point average, 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. Degree Program [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 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
4. 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. The Associate Director, Graduate Studies may also meet with the student to discuss the transfer. Support for transfers from MASc to PhD studies are decided by the Graduate Committee. A transfer fee is payable to the Office of Registrarial Services and a new [Advisory Committee and Graduate Degree Program GryphForm](#) must be submitted after the transfer is approved.

Timetable

The table below summarizes typical target times to complete the MASc and PhD degrees. Each student may vary from this but it is provided for overall guidance and planning purposes. Online Progress Reports through Gryphforms must be completed for every registered semester.

Semester	Item to be completed	Additional Information/Resources
1	New Student Orientation 1st to 2nd week of start of semester. Attendance is strongly recommended.	Students are encouraged to set up a meeting with their Advisor(s) 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 are located on the Office of Graduate Studies website. OGPS blocks students from further registration until these forms are received.	Refer to Graduate Calendar and the SOE graduate website for Degree Requirements. Submit documents to the Graduate Program Assistant.
3 - 4	Continue coursework and research/writing PhD students – work on research proposal for the Qualifying Exam (QE)	Register for UNIV*7500 if not taking a course for credit.
5	MASc students – continue research/writing or prepare for thesis defense PhD students – submit proposal and complete QE (Note: UoG requirement is that the QE be completed no later than 5th semester or 7th semester for transfer students.)	Submit an **Examination Request Form**, confirmation of submission to Turnitin, and one PDF thesis draft to the Graduate Program Assistant 4+ weeks in advance of desired defense date. Submit Proposal (PDF version and Turnitin submission) and **PhD Qualifying Examination Request Form** to Graduate Program Assistant.
6	MASc students – have reached completion period for degree, complete thesis defence PhD Students – continue research/writing	
7	MASc students are noted as being beyond their program time. Students wishing to continue will require a **Plan of Study**. PhD Students – continue research/writing	Registration in future semesters is blocked by OGPS until a Plan of Study is submitted and approved.
8 - 11	PhD Students – continue research/writing	
12	PhD Students – have reached completion period for degree, complete thesis defense	Submit **Examination Request form**, confirmation of submission to Turnitin, thesis draft (one hard copy and PDF) to Graduate Program Assistant 8+ weeks in advance of desired defense date. Advisor to submit to Associate Director, Graduate Studies a list of 4-5 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 MASc and twelve semesters for 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.

Part-time 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 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 online **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 ensure continued access.
  - A **Research Information Sheet** must be posted in the lab near your experiment to let other know who to contact in case of an emergency or a facilities issue. The Research Information Sheet is submitted only once unless there is a change to your experiment.

- o Once the forms have been approved, 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 after hours 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.

Graduate Teaching Assistantship (GTA)

A valuable experience for many graduate students 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.

The School of Engineering has created a new SOE TA guide, which can be accessed here: https://uoguelphca.sharepoint.com/sites/EngineeringTAGuide (login required).

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
- 25 remote access workstations for software access
- 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 provided by the Engineering IT support team who can be reached in the following ways:

- By emailing soeithelp@uoguelph.ca (preferred)
- By phone at 519-824-4120 x54900
- In person support is not available at this time

Hours of operation are between 8:30am to 4:30pm, Monday through Friday. Any issues arising after hours will be addressed the following business day.

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 to Engineering computers

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 ithelp@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. Ibrahim Deiab, Interim Director and Graduate Program Coordinator (please contact Piyali for an appointment)
Room: THRN 2408
x. 58391, soeadgr@uoguelph.ca

Piyali Mukherjee Roy, Administrative Assistant to the Director
Room: 2406, x.53023, soeexec@uoguelph.ca

Chantelle Prigione, Graduate Program Assistant | MASc & PhD
Room: THRN 1404
x. 56187, soegrad@uoguelph.ca

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Shannon MacDonald, Human Resources & Finance Administrator
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Paula Newton, Undergraduate Program Assistant
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Suzana Milosevic, Administrative Manager
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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. PhD Qualifying Examination Request Form
    b. SOE Graduation Clearance Checklist (link to online GryphForm)
    c. Lab Access Form
    d. Work Outline Form
    e. Research Information Sheet

2. Office of Graduate Studies Forms and Documents, common Graduate Records forms used include:
    a. Advisory Committee Appointment & Graduate Degree Program GryphForm
    b. Course Add/Drop / Course Waiver Request
    c. Full-Time/Part-Time Transfer Application GryphForm
    d. Graduate Student Progress Report GryphForm
    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)

    The Office of Graduate Studies is working to convert many PDF forms to electronic GryphForms. Once a new GryphForm is available, the PDF version will no longer be accepted.

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 Wellness (includes 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 online [SOE Clearance Checklist GryphForm](#) 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. All students must [apply for graduation](#) at the start of their final semester.

Ph.D. Final Examination:

A minimum of two months in advance, please submit the following to the SOE Graduate Program Assistant (soegrad@uoguelph.ca):

- Completed [Examination Request Form](#), signed by the Advisory Committee
- Confirmation of submission to Turnitin (instructions on the following page)
- Thesis draft (in PDF)
- Abstract (in Word format)

A soft copy of the thesis will be provided to the examination committee. It is the student's responsibility to ask the examining committee whether they prefer hard copies of the thesis and provide them directly. A hard copy may also be requested by the External Examiner.

The Advisor will submit a list of 4-5 suggested external examiners that meet the criteria outlined in the [Graduate Calendar](#) 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.A.Sc. Final Examination:

A minimum of four weeks in advance; please submit the following to the SOE Graduate Program Assistant (soegrad@uoguelph.ca):

- Completed [Examination Request Form](#), signed by the Advisory Committee
- Confirmation of submission to Turnitin (instructions on the following page)
- Thesis draft (in PDF)
- Abstract (in Word format)

A soft copy of the thesis will be provided to the examination committee. It is the student's responsibility to ask the examining committee whether they prefer hard 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.

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: 41024464
Class enrollment key: PhD.Engg

Upload your thesis to the Assignment entitled Thesis

MASc Students

Class ID: 41024439
Class enrollment key: Thesis

Upload your thesis to the Assignment entitled Thesis

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 Procedures

MASc/PhD

After their defense, students will revise their thesis as required and follow the steps for completion detailed below.

1. **Graduation Application**
   - Ensure that you have applied for graduation.

2. **Submit Request to Restrict Circulation of Thesis** (Optional)
   - If you wish to apply for restrictions on the circulation of your thesis due to patents pending or for future publication, a [Request to Restrict Circulation of Thesis form](#) must be submitted well in advance of your final thesis submission. Your Advisor(s) can confirm if this is needed. Please send the form to the Graduate Program Assistant for the Director's signature.

3. **Submit all required forms to Graduate Program Assistant and Office of Graduate Studies**
   If your examiners suggested any edits to your thesis, please complete them and submit your revised thesis to your Advisor and/or the examiners for review as discussed. Once it is confirmed that the final revisions are acceptable and nothing further is needed, there is some paperwork for you to submit.
   - The Office of Graduate Studies needs the following forms:
     - [Thesis Submission Control Sheet](#) GryphForm
     - Certificate of Approval (submitted by the Graduate Program Assistant)
     - [Early Completion Rebate](#) GryphForm (only if completing during the rebate period)
   - The Graduate Program Assistant needs the following form:
     - [SOE Clearance Checklist](#) GryphForm

4. **Submit your thesis to the Atrium**
   - Ensure there are no errors in your thesis before submission to the Atrium. Once submitted, the thesis will be reviewed for adherence to formatting guidelines by OGPS (within 1-3 working days).
   - Refer to the Graduate Calendar [Schedule of Dates](#) for the Atrium approval deadline each semester
   - [Atrium submission instructions](#)
   - [Atrium website](#)

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 beyond their program completion period
3. Students enrolled in the MEng program (funding is not typical, but does happen *in rare instances*)

For MASc.Engg students commencing their full-time studies in Winter 2020 or later, the School of Engineering's minimum guaranteed stipend is $16,500 per year for 2 years.

For domestic PhD.Engg students commencing their full-time studies in Winter 2020 or later, the School of Engineering's minimum guaranteed stipend is $21,500 per year for 4 years. The School of Engineering aims to provide (but does not guarantee) funding of $25,000 per year. For international PhD.Engg students commencing their full-time studies in Summer 2021 or later, the minimum guaranteed stipend is $32,500 per year for 4 years.

Funding packages may be composed of Graduate Research Assistantships (GRA), Graduate Teaching Assistantships (GTA), and/or Scholarships & Awards.

Please see the Academic Staff Work Assignments website for a full description of '[What are GTAs, GSAs and GRAs?](#)'.

Graduate Research Assistant (GRA)

The advisor provides GRA funds from their 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.

The Graduate Research Assistantship is not an employment contract rather, the Graduate Research Assistantship is a mechanism for funding the graduate student's research activities in connection with his/her graduate studies. Students requesting time off from research work must discuss this with their Advisor. 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.

The School of Engineering has created a new SOE TA guide, which can be accessed here: https://uoguelphca.sharepoint.com/sites/EngineeringTAGuide (login required).

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 (SIN) 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. 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 international 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 - competitions held annually in the Fall semester
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 – September 1
2. Engineering Alumni Scholarship – September 1
3. Lana McLaren/Richard Reynolds Memorial Scholarship – September 1
4. Mr. & Mrs. William Parker Scholarship – September 1
5. P.H. Southwell Research Travel Grants – September 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.

<u>Financial Aid</u>

There are several sources of financial aid for graduate students. Students with financial need can find more information on available sources of funding from the following resources:

- Office of Graduate & Postdoctoral Studies Financial Aid
- Graduate Students' Association (GSA) Awards and Bursaries
- Student Financial Services Scholarships & Financial Aid
- Student Financial Services Graduate In-Course Bursaries

Student Financial Services also offers Financial Aid counsellors on an appointment basis to assist students in need. Counsellors can assist with budget counselling, OSAP appeals, bursary appeals and emergency funding requests. Please see the Financial Aid Counselling website to make an appointment.