Faculty of Engineering and Applied Science
Graduate Program Handbook

Updated March 2024

Disclaimer: This document is based on the 2023-2024 Ontario Tech University Graduate Academic Calendar. Students should refer to current version of the Graduate Academic Calendar for the most up-to-date program information.

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1. Overview

This Handbook is prepared to serve as a guide and source of information to graduate students and faculty members in the Faculty of Engineering and Applied Science (FEAS). It outlines the rules and regulations specific to graduate programs in FEAS.

Information about the Faculty can be found at:

https://engineering.ontariotechu.ca

Information about FEAS's graduate programs can be found at:

https://engineering.ontariotechu.ca/current-students/current-graduate/index.php

The Graduate Academic Calendar and Course Catalogue can be found at:

https://gradstudies.ontariotechu.ca/current_students/academic_calendar_course_catalogue/

The School of Graduate and Postdoctoral Studies website can be found at:

https://gradstudies.ontariotechu.ca/index.php

1.1 FEAS - Graduate Studies

The Dean of the Faculty of Engineering and Applied Science is responsible for providing leadership in the development of the Faculty while overseeing all aspects of the Faculty's activities. Within the Faculty of Engineering and Applied Sciences, there are four departments:

- Department of Automotive and Mechatronics Engineering
- Department of Electrical, Computer, and Software Engineering
- Department of Energy and Nuclear Engineering
- Department of Mechanical and Manufacturing Engineering

The Associate Dean, Academic provides academic and administrative leadership to the Faculty. As well, the Associate Dean, Academic is part of the senior decision-making team for the Faculty and chairs the FEAS Graduate Committee.

For each graduate program, there is a Graduate Program Director. This role is of critical importance to ensuring the success of the program and its students. The Graduate Program Director is accountable to the Dean of the Faculty and, with respect to graduate activities, to the Dean of the School of Graduate and Postdoctoral Studies (SGPS). A full list of responsibilities is located in the Ontario Tech University Graduate Academic Calendar and Course Catalogue. A current list of Graduate Program Directors by program can be found under the *For Academic Advice* tab at the following website:

https://engineering.ontariotechu.ca/current-students/current-graduate/your-main-points-of-contact-.php

The Graduate Program Assistants provide administrative support to the Associate Dean, Academic, Graduate Program Directors, and faculty members and students for all issues pertaining to graduate studies.

The FEAS Graduate Office is responsible for the administration of a number of activities including, but not limited to, the following:

- New graduate engineering program proposals, or changes to existing graduate engineering courses, and/or regulations.
- Recruitment of new graduate students.
- Making recommendations on offers of admissions.
- Coordinating course registration for graduate engineering students.
- Planning and scheduling of course offerings.
- Handling grade appeals at the Faculty level.
- Financial support for graduate students, including minimum funding and teaching assistantships.
- Coordinating and scheduling of masters and doctoral theses defences and providing support for students in project stream.
- Guidance for plan of study.
- Managing lab and research space access.

For more information, please contact the FEAS Graduate Office at grad.engineering@ontariotechu.ca.

1.2 Ontario Tech University School of Graduate and Postdoctoral Studies

The Ontario Tech University School of Graduate and Postdoctoral Studies (SGPS) is responsible for the administration of a number of activities including, but not limited to, the following:

- Develop regulations, policies, procedures, publications, guides and handbooks related to graduate studies, including the Graduate Academic Calendar and Course Catalogue.
- Assist programs with the recruitment of new students.
- Extend all formal offers of admission.
- Manage the registration of all graduate students.
- Handling of grade and academic appeals.
- Manage and administer graduate scholarships and awards.
- Receive and process documentation for theses (master's/doctoral) and projects.
- Coordinating communications to graduate students and managing the Graduate Studies Website.
- Coordinating the Graduate Professional Skills Pilot Program
- Planning the Graduate Student Orientation and Three Minute Thesis competition 3MT®

The School of Graduate and Postdoctoral Studies can be reached at gradstudies@ontariotechu.ca.

The FEAS Graduate Office and the School of Graduate and Postdoctoral Studies work together to ensure:

- Academic honesty and integrity for all graduate students.
- Students receive the highest quality of academic support and in-program guidance.
- Academic integrity and program standards are upheld to the highest degree
- The acceptance of high-quality students
- Graduate funding requirements are being met

2. General

Graduate academic regulations and nomenclature are located in the Graduate Academic Calendar. It is each student's responsibility to exercise due diligence to ensure that they are in compliance with the regulations listed in the Graduate Academic Calendar and the Ontario Tech University School of Graduate and Postdoctoral Studies website, in respect to program requirements, graduate term deadlines, important dates, and thesis submission dates. For MASc and PhD students, all decisions regarding course options and academic progress must be in consultation with the student's research supervisor(s). MEng and MEngM students should contact their Graduate Program Director for any academic matters.

All graduate students must abide by Ontario Tech's Academic Integrity policies and procedures. For information about Academic Integrity please visit:

https://academicintegrity.ontariotechu.ca/index.php

3. Important Dates and Forms

Graduate students must pay close attention to a variety of important dates during their studies. These dates will directly affect a graduate student's performance, GPA, and time sensitive items within their tenure of study. Important dates refer to, but are not limited to, change in program deadlines, leave of absence deadlines, add/drop deadlines, fee deadlines, examination deadlines, etc. These dates can be found here:

https://gradstudies.ontariotechu.ca/current_students/important-dates.php

Relevant forms from the School of Graduate and Postdoctoral Studies can be found here:

https://gradstudies.ontariotechu.ca/current_students/student-forms-and-publications.php

Relevant forms from FEAS can be found here:

https://engineering.ontariotechu.ca/current-students/current-graduate/important-graduate-resources/index.php

4. Acceptance of a Graduate Student

The process of accepting a new MASc or PhD graduate student starts with the submission of *FEAS Form #1 – Agreement of Faculty Members to Supervise and Fund a Graduate Student* form to the Graduate Program Director. Once the Graduate Program Director approves the recommendation to accept the student, the approved form is sent to the FEAS Graduate Office for processing as per FEAS's "Handbook of Standard Operating Procedures". Admission recommendations, for full-time, research-based graduate students, must include minimum funding levels. In the case of non-standard applicants (see below), the file is brought to the FEAS Graduate Committee for decision.

The Faculty recommends admission to graduate programs to the Dean of SGPS. Note, any recommended acceptance of a graduate student is subject to final approval by the Dean of SGPS. The Dean of SGPS extends all formal offers of admission.

4.1 Non-Standard Applicants

For Non-Standard Applications (NSAs) are considered only for students who have completed their Bachelor's degree from another country and their application is supported by the proposed research supervisor(s). Graduates of Canadian institutions are considered only in case of evidence of extensive work experience related to R&D/research after graduation.

An applicant is considered as non-standard if the applicant's Bachelor degree is not related to the intended program of study or does not meet the program admission requirements (GPA 3.0 or higher for Master's and GPA 3.3 or higher for PhD). The following must be followed for NSA:

- NSA PhD applicants should be first considered for a MASc program. Based on the student's performance, they may be allowed to transfer to a PhD program by following the guidelines for transferring from MASc to PhD.
- The Faculty Graduate Committee will consider NSA MASc admission only if a substantial amount of knowledge has been demonstrated either during work or through the course of study after graduation, usually applicable to mature students.
- NSA MASc applicants are only accepted conditionally. The Faculty Graduate Committee usually assigns the NSA applicant with an extra two courses (4th year undergraduate courses) that the student must pass with a minimum average of 3.0. The extra courses are normally taken in the first term of study. Failure to meet the conditions will result in dismissal from the program. The extra courses must be 4th year undergraduate courses in the intended area of study. NSA MASc applicants are normally admitted in the Fall or Winter term to ensure the conditional courses are offered in the first term of study.
- Students who have conditional courses assigned as part of their offer of admission may be eligible to transfer one NSA conditional course to their MASc degree requirements if the student receives an A- or above in all conditional courses and satisfies the Graduate Academic Calendar rules for transfer. The request should be initiated by the research supervisor(s) and recommended to the Faculty Graduate Committee for approval.

4.2 Transfer from MEng Program to MASc Program

To transfer from a MEng program to a MASc program, the following conditions must be met:

- The student must meet the minimum GPA admission requirement in the same field of the proposed degree.
- In case the student's undergraduate degree is not in the same proposed area of study, a conditional acceptance may be considered with an extra two courses (4th year undergraduate courses) as recommend by the Graduate Program Director. The student must pass the recommended undergraduate courses with a minimum average of 3.0 within the first two semesters of study. Failure to meet the conditions will result in dismissal from the program.
- A research supervisor(s) must be willing to supervise the student and provide the minimum funding to the student (except for part-time or self-funded students).

4.3 Transfer from MASc Program to PhD Program

This transfer option is for exceptional students who have demonstrated superior academic performance and significant research achievements during the study of their MASc degree program. Applicants are considered on a case-by-case basis and may not be considered at all in some programs. If a transfer from a MASc degree

to a PhD degree is allowed in a program, the following criteria must be met before a transfer can be considered:

- Completion of a full MASc program of course work with at least an A average (FEAS minimum, as per the Graduate Academic Calendar).
- Significant progress in the student's research project. Examples of evidence of significant progress includes presenting a research paper at a reputable, peer-reviewed conference or accepted paper by a reputable, peer-reviewed journal in the field of study.
- Strong evidence of ability for advanced independent research.
- Approval of the transfer by the research supervisor(s), Supervisory Committee, Graduate Program Director, and the Dean of SGPS
- Satisfactory completion of the PhD Candidacy Exam. If the judgment is unsatisfactory, the student will continue in the MASc program.

To clarify the sequence of events: The student must complete all five courses required for the MASc degree with an A average, show that significant progress has been made on their research topic, show the ability to undertake advanced independent research, obtain the appropriate approvals listed above and only then, successfully pass the PhD Candidacy Exam. There will be only one examination allowed for the transfer from a MASc to a PhD. These events must happen chronologically in the order stated above.

Upon transfer, a maximum of two courses taken during the MASc degree may be counted towards the PhD degree requirement. In addition, the student must fulfill all other requirements for the PhD degree.

Further details about the process to transfer from a MASc to a PhD program, including required forms, can be found here:

https://gradstudies.ontariotechu.ca/current_students/thesis-projects-papers/phd-thesis-and-candidacy.php#tab1-4

5. Degree Requirements and Course Registration

Specific degree requirements for each graduate program can be found in the Graduate Academic Calendar.

5.1 Graduate Student Plan of Study

For MASc and PhD students, preferably prior to commencing their program, but no later than the add/drop deadline for courses in their first term, the research supervisor(s) will consult with the student, recommend a plan of which courses the student should take, complete the *FEAS Form #2 – Graduate Student Plan of Study* form, and submit the from to the Graduate Program Director for approval. The list of planned courses will help the Graduate Program Director better plan course offerings, however, there is no guarantee a specific course will be offered.

5.2 Course Registration Procedures

Students will adhere to the following procedure when registering for courses:

- MASc and PhD students must consult their research supervisor(s) on which course(s) to take. MEng and MEngM should consult with their Graduate Program Director if they have questions regarding courses selection.
- If the student is able to add a course online via their MyOntarioTech account, they should do so. If

the course is outside the student's program of study, the student needs to submit an add/drop form to the FEAS Graduate Office. Note, MASc and PhD students must have their research supervisor(s)'s signature on the form. The Gradaute Program Director gives final approval on all add/drop forms. The FEAS Graduate Office will forward the completed form to SGPS to process.

Details on how to register for a course can be found here:

https://gradstudies.ontariotechu.ca/current_students/course-registration/how-to-register.php

Students who are uncertain about the academic background needed for a graduate course should consult the course instructor before registering for the course.

5.3 Courses Outside of the Program of Study

At least half of a student's courses must be within their program of study.

MASc, MEng project-based, and MEngM students may take one senior year undergraduate engineering course (i.e., a course with a number 4xxxU) in lieu of a graduate-level course, provided they have not already taken a similar course during their undergraduate degree and the course is approved by the Graduate Program Director and the student's research supervisor(s) for MASc students. MEng course-based students may take up to two senior year undergraduate engineering courses in lieu of up to two graduate-level courses; again, provided they have not taken similar courses during their undergraduate degree and the courses are approved by the Graduate Program Director. PhD students are not permitted to take any undergraduate-level courses in lieu of their graduate course requirements.

Courses, related to the program of study, in other graduate programs at Ontario Tech University may be taken if students have not taken similar courses during their undergraduate, or Master's degrees for PhD students. The course must be approved by the research supervisor(s) for MASc and PhD students, Graduate Program Director, and other Faculties, if applicable.

Please refer to the Graduate Academic Calendar for more details.

5.4 Directed Studies Courses

MASc and PhD students may take one Directed Studies course as one of their course requirements. These courses are typically offered by the student's research supervisor(s). If a research supervisor(s) wishes to offer a Directed Studies course, a course outline needs to be prepared and submitted to the Graduate Program Director two weeks prior to the start of the semester in which the course is to be offered. Once the course is approved, the FEAS Graduate Office will ensure the course is officially created and the student added to it.

5.5 Seminar Courses

All MASc and PhD programs have a seminar requirement. The purpose of the seminar course is to engage the students in interactive research discussions where they share and discuss their research experience, including research topics, research methods, and achievements.

Students participate in seminars by internal speakers, including their colleagues and mentors, and external speakers on current research topics. All graduate students are required to give seminars on their thesis

research, typically within the second year of their programs for MASc students and their third year for PhD students. Each student's presentation is followed by questions and answers sessions.

The course has a pass/fail grade. To pass the course, each student must make at least one seminar presentation and attend 80% of the presentations made by others in the duration of the course.

Please refer to the Graduate Academic Calendar for more details.

5.6 ENGR 6006G: Workshops Course for PhD Students

The ENGR 6006G: Workshops course is mandatory for all PhD students. The purpose of the course is to aid in the professional development of PhD candidates. Workshop topics include project management, intellectual property, grantsmanship, communications and career management.

In order to pass the course, each student must attend five workshops. For further details see:

https://gradstudies.ontariotechu.ca/grad-student-engagement/base-camp/base-camp-achieve/grad-pro-skills/upcoming-in-class-workshops.php

6. Supervisory Committee

Every MASc and PhD graduate student requires a Supervisory Committee. Early formation of a Supervisory Committee, along with regular meetings, and formal meeting records, helps ensure higher completion rates. In addition to regular committee meetings with the student, in the event any issues arise pertaining to the student's research progress, the student, supervisor, or the Graduate Program Director may call a meeting with the committee.

The Graduate Program Director appoints the Supervisory Committee, after consultation with the research supervisor(s) (research supervisor(s) to suggest the members) and the student. The Graduate Program Director must ensure that Supervisory Committee members are active researchers in the student's field of study. For PhD students, at least two members are required and at least one of the two must be an active researcher in the main field of study. Please refer to the Graduate Academic Calendar for more details.

The Supervisory Committee should be established no later than the end of the first year of a graduate student's program. Lack of adequate research progress may result in a delay in establishing the Supervisory Committee. In such a case, the student's inadequate performance must be reflected in the student's progress reports (see: https://gradstudies.ontariotechu.ca/grad_admin/research-progress-reports.php).

To establish a Supervisory Committee, *Form #1 - Establishment of Supervisory Committee* needs to be completed and approved by the Graduate Program Director. The approved form is then sent to the FEAS Graduate Office for processing.

7. Graduate Student Research Progress Report

The research supervisor(s) for a MASc or PhD student should regularly evaluate their student's research progress. The *Graduate Student Research Progress Report* should be completed at the end of each semester for each MASc and PhD student. The reports are used to monitor a student's progress and provide sufficient feedback to the student. The report form, details of the research progress report, and the related evaluation of student progress can be found here:

https://gradstudies.ontariotechu.ca/grad_admin/research-progress-reports.php

The report should be completed in full between a student and their research supervisor(s), followed by the Supervisory Committee members, and lastly, approved by the Graduate Program Director. The report is then submitted to the FEAS Graduate Office for processing with SGPS.

8. MASc Master's Thesis, MEng/MEngM Project Report, PhD Candidacy Exam, and PhD Doctoral Thesis

MASc and PhD students are required to write a thesis that documents their research work. MEng/MEngM project-based students must write a report that documents their project. All written work must be done in English and in correct, concise, and scholarly language. Proper citing must be used and the submitted work must be the student's own original work.

If a graduate student needs help with their academic writing, they can see a Writing Specialist at the Student Learning Centre. For more details see:

https://studentlife.ontariotechu.ca/current-students/academic-support/index.php

8.1 MASc Master's Thesis and Defence

Information about the requirements for MASc master's theses, including required forms, can be found here:

https://gradstudies.ontariotechu.ca/current_students/thesis-projects-papers/masters-thesis.php

Timelines for MASc master's theses can be found here:

https://gradstudies.ontariotechu.ca/current_students/thesis-projects-papers/masters-thesis.php#tab1-3

8.2 MEng/MEngM Project Report

MEng and MEngM students wishing to complete the project-based option must find a project supervisor(s). The project supervisor(s) must hold a Graduate Faculty appointment in the respective program. The project supervisor(s) should submit the *FEAS Form #4 - Supervision of a MEng/MEngM Project* form to the Graduate Program Director for approval. Approved forms are submitted to the FEAS Graduate Office for processing.

Information about the requirements for MEng/MEngM project reports, including required forms, can be found here:

https://gradstudies.ontariotechu.ca/current_students/thesis-projects-papers/masters-project-major-paper.php

Timelines for MEng/MEngM project reports can be found here:

https://gradstudies.ontariotechu.ca/current_students/thesis-projects-papers/masters-project-major-paper.php#tab1-3

8.3 Doctoral Candidacy Exam

Each student in a PhD program is required to prepare a written Doctoral Thesis Proposal and pass a Doctoral Candidacy Exam. Full-time students are expected to do so within 18 months of their initial registration in the program.

The Doctoral Thesis Proposal should not exceed 25 pages and should include a statement identifying the research problem, a critical research literature review, a statement identifying the research problem, the proposed methodology, the objective(s) of the research and expected research contribution(s), and a proposed timeline. The Doctoral Thesis Proposal must be submitted at least four weeks prior to the Doctoral Candidacy Exam.

In FEAS, careful consideration is made to ensure that the PhD Candidacy Exam determines whether the candidate has the appropriate knowledge and expertise to undertake the proposed research in their selected field of study. In order to meet this goal, it is expected that the Supervisory Committee will have at least one meeting (more meetings can be called for if required) before the PhD Candidacy Exam, in which the student's topic of research is reviewed prior to the date of the proposed PhD Candidacy Exam. Based on the candidate's first meeting with the Supervisory Committee, and no later than two weeks from the date of the first committee meeting, the Chair of the Supervisory Committee (usually the research supervisor) will present the Graduate Program Director with a completed *FEAS Form #3 – Pre-Candidacy Committee Meeting Report*.

During the candidacy exam the student's background is tested (Academic Background Evaluation) and the proposed research methodology (Research Topic and Plans) is evaluated by the Doctoral Candidacy Committee.

Academic Background Evaluation:
The academic background part of the exam is to test the candidate's background and suitability to conduct the proposed research. This is done through questions from the Doctoral Candidacy Committee members to test the student's understanding of the related theories to the student's research work and the student's ability to integrate their knowledge and ideas. The Doctoral Candidacy Committee may recommend some extra courses to enhance the students' background/ability to perform the proposed research.

Evaluation of Research Topic and Plans:
During the candidacy exam, the student will present the research proposal and the examining committee will follow up with questions regarding the proposed research topic and methodology, as well as provide suggestions/comments to the candidate.

8.4 Doctoral Thesis and Defence

Information about the requirements for PhD doctoral theses, including required forms, can be found here:

https://gradstudies.ontariotechu.ca/current_students/thesis-projects-papers/phd-thesis-and-candidacy.php

Timelines for MASc master's theses can be found here:

https://gradstudies.ontariotechu.ca/current_students/thesis-projects-papers/phd-thesis-and-candidacy.php#tab1-3

8.5 Master's and Doctoral Defences

Once the thesis has been deemed ready for examination, the Chair of the Examining Committee is responsible for ensuring that all necessary arrangements are made. The Graduate Program Assistant will assist scheduling the examination, distributing the thesis to the Examining Committee members, and preparing the relevant documents needed at the time of the examination. The Chair of the Examining Committee must be physically present during the oral examination.

If a member of the Examining Committee finds that they are unable to attend the defence in person or remotely via synchronous participation, the Graduate Program Director should secure a suitable replacement. Should a suitable replacement not be found, the member is asked to submit their questions or concerns to be read by the Chair of the Examining Committee at the defence. Normally, no more than two members of the Examining Committee, including the External Examiner, may attend the oral examination remotely. At least one member of the Supervisory Committee must be physically present. In extraordinary circumstances, the examination will be rescheduled if one or more members of the Examining Committee are unable to attend.

If technical support is required, one week prior to the examination, a FEAS technical representative will connect with the External Examiner (if remotely attending the exam) to test the connection and confirm with the Graduate Program Assistant that everything is functioning properly.

9. Adjunct Professors and Associate Graduate Faculty

All Adjunct Professor nominations, Adjunct Professor renewals, and Associate Graduate Faculty nominations will be submitted, along with supporting documentation (e.g., CV, a support letter), to the Graduate Program Director of the program. The approval stages of the nomination, in order, are: the Department Graduate Committee, the Department Council, and the FEAS Graduate Committee. At any stage, if the application is not approved, the GPD will forward the application to the Dean of Engineering along with an explanation of why the application was not accepted. Successful applications will be forward to the Dean of Engineering. The Dean of Engineering will make the final recommendation on the application to the Provost. Once approved by the Provost, the paperwork is then forwarded to the School of Graduate and Postdoctoral Studies for processing and reporting to the Graduate Studies Committee. FEAS tenure-track faculty members with 40% research duties or higher are exempted from this process.

9.1 Criteria for Adjunct Professors

The University policy for Adjunct Professor nomination criteria and appointments is available here:

https://usgc.ontariotechu.ca/policy/policy-library/policies/administrative/adjunct-professors-policy.php

According to the University policy, nominees for Adjunct Professor appointments must meet the equivalent standards to those that exist for tenure-track positions at the University and are actively engaged in research. Nominees from other academic institutions are expected to hold a tenured or tenure-track position at the rank of Assistant, Associate, or Full Professor with a well-established track record of research and demonstrable active research engagement and have currently established collaboration with a faculty member(s) in FEAS. Nominees who are not holding an academic position are expected to hold a technical lead position in industry with active engagement in research and have currently established collaborations with a faculty member(s) in FEAS.

The nominator should provide the nominee's up-to-date CV and a support letter that clearly explains the currently established collaboration and outline the expected contributions to the department and FEAS to the Graduate Program Director.

9.2 Renewal of Adjunct Professors and Associate Graduate Faculty

If the nomination is a renewal, the nominee should also provide a brief summary listing past collaboration activities and contributions to FEAS during the current term of appointment as part of the supporting documents for review and approval. The decision for a renewal should consider the nominee's past activities and contributions to the Department and FEAS.

9.3 Co-Supervision Role for Associate Graduate Faculty

An Associate Graduate Faculty member may be appointed to serve on a Supervisory Committee. Conforming to the SGPS policy, given the restricted supervision privileges an Associate Graduate Faculty member has, following the approval by the Graduate Program Director, the Associate Graduate Faculty member can only be a thesis co-supervisor. The Associate Graduate Faculty member's name can only appear as the "co-supervisor" in the related graduate supervision or examination forms.