



# Western Engineering

**DEPARTMENT OF CHEMICAL AND BIOCHEMICAL ENGINEERING**

## **Graduate Study Policy Handbook**

The University of Western Ontario  
London, Ontario  
N6A 5B9

### Preamble

*This document provides the current graduate studies policies of the Department of Chemical and Biochemical Engineering and is subject to change without notice. The purpose of this manual is to provide faculty and students with an up-to-date information source for different procedures and policies in place for the graduate program in our Department. Your input and suggestions for the continuous improvement of this program and its manual are always welcome.*

<b>GENERAL PROGRAM INFORMATION .....</b>	<b>4</b>
Orientation .....	4
Academic Records .....	5
First Term of Registration .....	5
Subsequent Terms of Registration .....	5
Maximum Registration Period .....	5
Probationary Students .....	5
Application Deadlines .....	6
Students with Non-Engineering Degrees .....	6
Program Forms .....	7
Graduate Course Enrolments .....	7
Graduate Course Audits .....	7
Enrolment in an Undergraduate Course .....	8
Graduate Seminar .....	8
Building Access and Keys .....	8
Safety Training Requirements .....	9
Funding .....	9
Leave of Absence .....	10
Holiday/Vacation Leave .....	10
Tax Slips from Revenue Canada .....	10
Students of Advisors on Sabbatical or Other Leave .....	10
Procedure for Changing Chief Advisor .....	10
Scholastic Offences .....	10
Appeals .....	11
Clearance Form .....	11
Graduation Completion and Convocation .....	11
Iron Ring .....	12
Teaching Assistantships (TA) .....	12

Accessibility for Ontarians with Disabilities Act (AODA) Training.....	12
Participation in Tutorials and Laboratories.....	13
Marking of Assignments, Mid-Terms and Reports .....	13
Proctoring Duties .....	13
TATP (Teaching Assistant Training Program) .....	13
<b>Program of Study: Master of Engineering (MEng) Program .....</b>	<b>13</b>
Course Requirements.....	13
Engineering Project.....	13
Transfer from MEng to MEng to MEng Program .....	14
Application and Admission to MEng .....	14
<b>Program of Study: Master of Engineering Science (MEng) Program .....</b>	<b>14</b>
Annual Progress Reviews .....	14
Thesis .....	16
Submission and Reading of Thesis.....	16
Public Lecture and Oral Examination .....	17
Decision.....	17
Final Submission of Thesis .....	17
Transfer from MEng to PhD Program.....	17
<b>Program of Study: Doctor of Philosophy (PhD) Program.....</b>	<b>18</b>
Comprehensive Examination .....	18
Annual Progress Reviews .....	19
Transfer from PhD to MEng Program.....	21
Thesis .....	21
Submission and Reading of Thesis.....	22
Public Lecture and Oral Examination .....	22
Decision.....	22
Final Submission of Thesis .....	22

## **Welcome!**

This manual summarizes policies and procedures concerning the graduate program in the Department of Chemical and Biochemical Engineering (CBE) at The University of Western Ontario (UWO or Western) for the Master of Engineering (MEng), Master of Engineering Science (MEngSc) and the Doctor of Philosophy (PhD) programs. The purpose of this manual is to provide ready-to-use information, policies and procedures for graduate students and their Faculty Advisors. Students are advised that it is their responsibility to familiarize themselves of all policies, procedures, and deadlines—not that of their Chief Advisor. Suggestions for improvements are always appreciated and welcome.

Please consult the School of Graduate and Postdoctoral Studies (SGPS) (<http://grad.uwo.ca>) for further information; the majority of the regulations stated or referred to in this handbook are official University policies. The SGPS website represents the official and most current regulations and will take precedence over any information presented in this handbook.

## **GENERAL PROGRAM INFORMATION**

### **Orientation**

All new graduate students will receive an Orientation handbook once they have completed their offer of admission and acceptance into a CBE Graduate program. This document provides a list of arrangements that should be made prior to and upon arrival at UWO. Academic records can be accessed through your Student Center. The deadline for completion of any admission conditions is by the end of the month of the first term in which they are starting their program.

New students should have received an orientation handbook prior to their arrival. Orientation is held in the first week of each term and it is mandatory that all incoming students attend the CBE Orientation session. The Faculty of Engineering and SGPS also hold orientation sessions that will outline additional services the University offers to all students as part of their tuition and fees. Attendance at these orientation sessions is strongly recommended for students new to Canada and UWO.

### **Study Permit Information**

International students must provide their original and valid Citizenship and Immigration Student Authorization (study permit). If a student applies for and receives Landed Immigrant Status (Permanent Residency) at any time during their graduate studies, they must inform the CBE Graduate Office and provide a copy of the documentation issued, as this can dramatically impact your tuition and fees rates. International students who apply for an extension of their study permit should do so well in advance, as the process can be lengthy.

If students require a statement letter stating full-time enrolment to submit with their renewal application, this is requested electronically through your Student Center (<https://student.uwo.ca>) or in person at the Office of the Registrar. Alternatively, a status letter can be requested from the CBE Department, this is not an official letter of enrollment, but will outline specific offer details- please note there is a 5 business day turnaround for such requests. Students who have not yet received the new

permit should provide the CBE Graduate Coordinator with a copy of the receipt which shows the application fee as paid. Once the new study permit has been received, students must provide the original documentation to the CBE Graduate Office.

### **Academic Records and Contact Information**

Students should be aware it is their responsibility to regularly check their academic record and report any discrepancies to the CBE Graduate Office. Every student has access to their academic record through their Student Center. Students may also update their biographical information in the Student Center, and it is their responsibility to ensure this information is up-to-date.

### **First Term of Registration**

During first term of registration, in consultation with the student's Faculty Advisor, all students must submit a Proposed Program of Study to the CBE Graduate Office. The Proposed Program of Study must indicate the proposed course selection and, if applicable, engineering project topic. Failure to submit a proposed program of study by the end of the first term of registration will result in the denial of permission to register in further courses. Students must submit a revised form should any subsequent change be made pertaining to their program of study.

When requesting credit for graduate courses taken elsewhere, the request must be submitted at the time of submission of the Proposed Program of Study form. Students must complete the Request for Request for Transferring Previous Graduate Courses into Current Program form, and submit this along with course outlines for each requested transfer course.

### **Subsequent Terms of Registration**

University regulations require that the student must maintain a cumulative average of at least 70%, with no individual grade less than 60%.

### **Maximum Registration Period**

Any master's degree program must be completed within a period not exceeding three calendar years from initial registration. The doctoral degree program must be completed within a period not exceeding six calendar years from initial registration. For students who transfer from a Master's to the Doctoral program without completing the Master's program, a maximum of seven calendar years from the initial registration will be given. The student will be withdrawn at the end of his/her maximum registration time limit unless SGPS has approved a request for extension.

### **Probationary Students**

During their probationary term(s), students must succeed in the requirements specified by the program to be eligible for transfer to degree status. Students in this category pay normal graduate fees for their registration.

## Application Deadlines

Students who complete a master's degree and plan to transition to another graduate degree program within CBE will need to complete a new application for admission. Application documentation received beyond the deadline is not guaranteed review or admission for a student's selected entrance term of choice. Application deadlines for consideration in all CBE programs are as follows:

Students who are:	Deadline for Applications for:		
	Fall	Winter	Summer
Canadians or Permanent Residents	July 1	November 1	March 1
International Students	March 1	July 1	November 1

### Students with Non-Engineering or Non-Chemical Engineering Degrees (registered before May 1, 2016)

(For students registered after May 1, 2016, please refer to:

<http://www.eng.uwo.ca/chemical/pdf/Grad/05.01.2016-CBE%20Research-based%20Grad%20Courses%20Requirements.pdf> )

For MESC or PhD students with non-engineering or non-Chemical engineering backgrounds, additional fundamental courses will be required. Two (2) relevant chemical engineering courses at the graduate or undergraduate level must be taken during the first two terms of registration. Graduate courses taken can be counted as fulfilling the non-engineering/non-chemical engineering requirement as well as toward the MESC or PhD degree course requirements. Undergraduate courses will not be counted toward fulfillment of required graduate courses for degree completion and graduation.

Courses available for fulfillment of this requirement are:

CBE 2221	Fluid flow
CBE 2224	Chemical Engineering Thermodynamics
CBE 3301/9211	Biochemical Reaction Engineering
CBE 3310	Process Dynamics and Control
CBE 3315	Reaction Engineering
CBE 3322	Heat Transfer Operations
CBE 3323	Staged Operations
CBE 3324	Mass Transfer Operations
CBE 3325	Particulate Operations
CBE 9150	Advanced Chemical Engineering Thermodynamics
CBE 9160	Transport Processes
CBE 9250/BME 9525	Advanced Biomaterials Engineering

CBE 9450	Advanced Chemical Reaction Engineering
CBE 9550	Advanced Particle and Fluidization Technology

Students without bio-related backgrounds may also choose one of the following:

CBE 3320	Bioprocess Engineering (open to students without bio backgrounds only)
CBE 9260	Advanced Bioengineering and Biotechnology

Undergraduate course schedules are listed in the official timetable through the Office of the Registrar (<http://www.registrar.uwo.ca/index.cfm/course-enrollment/timetables/>). Graduate course schedules are listed on the CBE website and posted on the Graduate bulletin board.

### **Program Forms**

All forms to be completed for graduate degree programs outlined in this manual must be returned to the CBE Graduate Office. The most current version of all forms can be found on the CBE website.

### **Graduate Course Enrolments**

Students **MUST** enroll in every term (3 terms per year) from initial registration until all degree requirements are completed. A list of courses offered by the Chemical and Biochemical Engineering Department is available online, as well as posted on the Graduate Bulletin Board.

Course enrolment is an electronic process completed through your Student Center. There is a limited window at the beginning of each term to select courses electronically. The deadlines are January 6, May 6 and September 6 for the winter, summer and fall terms, respectively. The system is closed after these dates each term.

Students who wish to drop a graduate course should do by emailing the CBE Graduate Coordinator. Course(s) dropped within one month of the official beginning of the term will not appear on the transcript. When students withdraw after this date, but within eight weeks of the beginning of the term, the course(s) stays on the transcript along with the notation "WDN" (Withdrawn). Course(s) dropped after eight weeks from the beginning of the term are recorded as "FAI" (Failed).

When a student does not complete a course during the term of enrollment, the grade will convert to an INC. There is a maximum one term beyond the term of enrollment for a mark to be submitted. If a grade is not submitted by this deadline, the INC becomes a FAI. A grade submitted for an INC is final (numerical or FAI); SGPS will not consider a subsequent revision of either grade except on documented medical or compassionate grounds.

### **Graduate Course Audits**

Students who wish to audit a course must complete a Graduate Course Audit Form, secure signatures from the course instructor and their supervisor, and then submit the form to the CBE Graduate Assistant

for the Associate Chair-Graduate's signature. Audit forms are due at the same time as other (undergraduate, outside home program, etc.) course enrolment forms.

Students who audit courses are responsible for regular attendance and any other obligations as stated in the Comments/Expectations section of the Graduate Course Audit form. If these requirements are not met, the audit will be removed from the student's record at the request of the instructor. After the enrollment deadline (above), a student may make a change from auditing a course to taking it for credit, or vice versa, within a given term. A student may, in a subsequent term, enroll in the course for credit that has previously been audited.

### **Enrolment in an Undergraduate Course**

All courses taken should be graduate level courses. If any undergraduate level course is toggled with a graduate course, student must register for the equivalent graduate course. If the student is a UWO undergraduate student, then s/he cannot register for the graduate equivalent of the undergraduate course already taken. Approval from the CBE Graduate Chair is required if a student wants to register for a course outside of Faculty of Engineering or Faculty of Science. Students who wish to take undergraduate courses (either for interest or requirement) must complete an Add/Drop/Audit Undergraduate Course Form, collect their advisor's signature(s) and submit the form to the CBE Graduate Assistant.

Students who wish to take undergraduate courses that are NOT required by the department as part of your proposed program of study must submit the additional course fees along with the course enrolment form. More information regarding the amount of fees can be obtained from the Office of the Registrar online at <http://www.registrar.uwo.ca/index.cfm/student-finances/fees-refunds/>. Graduate students taking undergraduate courses for credit or audit must follow the undergraduate regulations and schedules. Students wishing to drop or audit an undergraduate course must complete an Undergraduate Course Form within the deadline specified in the undergraduate calendar.

### **Graduate Seminar**

All graduate students are required to attend and participate in the Graduate Seminar. CBE holds seminars weekly and attendance will be taken. A list of seminar speakers and topics will be posted on the Graduate bulletin board, as well as on the CBE website. Students are required to attend 75% of the seminars each term throughout the duration of their program.

Students will present at least one (MEdSc) or two (PhD) times during their program of study. This can be accomplished during the regular weekly seminar sessions or at the annual "Research Bridges" symposium held at the Research Park in Sarnia each May. Attendance at the Research Bridges seminar is also mandatory.

### **Building Access and Keys**

All access-related concerns are handled through the CBE Department Office. Access is canceled upon the expiration of your safety training or the end of the program of study, whichever comes first. Laboratory keys, building access and laboratory use privileges will not be issued to students until the required safety trainings have been completed and proof is provided to the CBE Graduate Office.

### **Safety Training Requirements**

There are three required safety training sessions for all CBE students: WHMIS, Employee Health and Safety Orientation, and General Laboratory Safety and Hazardous Waste Management. Registration for in-person and online courses are at the Human Resources website:

<http://www.uwo.ca/hr/learning/required/> .

WHMIS is a set of government regulations concerning the labeling, storage, handling and disposal of hazardous chemicals. There are two types: Basic and Comprehensive. Everyone in CBE completes the Comprehensive session online through WebCT. Once you have successfully finished and passed the WHMIS examination, you will be able to print and/or save your certificate. The CBE Graduate Office needs a copy for your file.

Employee Health & Safety Orientation and the General Laboratory Safety and Hazardous Waste Management trainings require class attendance. After you have registered for the training sessions, provide a copy of your registration to the CBE Graduate Office. After the Employee Health & Safety Training, provide your signed enrolment confirmation to the CBE Graduate Office. When you have attended the General Laboratory Safety and Hazardous Waste Management course, the online exam information will be shared with you. Once you have finished and passed the exam, you will be able to print and/or save your certificate. The CBE Graduate Office needs a copy for your file.

Certification for WHMIS and Lab/ Environmental Waste Safety must be renewed every three years. You will be notified by the CBE Graduate Office to take the training and exam at that time.

### **Funding**

Funding is provided for full-time research graduate students for the first two (2) years of the MEd program and the first four (4) years of the PhD program. Each student will receive a letter of offer from the Chief Advisor agreeing to supervise the research project and provide financial support prior to commencing studies. This letter states the total annual funding to be provided by UWO to the particular student. Continued funding beyond the two or four year periods is conditional on satisfactory performance in research and availability of funds. There is no guarantee of funding beyond the period stated in the letter of offer.

UWO funding guidelines for MEd and PhD students require a minimum funding package of tuition plus \$12,000 per year. Students may receive support in the form of teaching assistantships (TA) and

Graduate Fellowship from their research supervisors. These may not represent additional funding for the student. Individual funding packages (amounts and details) are provided in each student's offer letter from their research supervisor.

### **Leave of Absence**

The student may apply for a Leave of Absence on medical or compassionate grounds using the online form available in the Graduate Student Web Services Portal (<https://grad.uwo.ca/student/index.cfm>). Once a decision has been made, students will be notified via their Western e-mail address. A student will be granted no more than three terms Leave of Absence during a degree program, and, during the Leave of Absence, must interrupt his/her program and make no use of any University facilities.

### **Holiday/Vacation Leave**

If you will be away at any time, you are required to submit a Student Holiday form to the CBE Graduate Office. The form is available online and requires the approval signature of your advisor and, if applicable, the instructor for the course you are assigned to TA. Forms are due one week prior to your leave. Failure to submit this form without prior approval will result in disciplinary action, up to and including removal from your program of study, through the Dean's Office.

### **Tax Slips from Revenue Canada**

Students are required to provide their forwarding address on their 'Student Center' record as well as their 'my HR', in order for Payroll to forward tuition and RA tax slips provided by Revenue Canada. Tax slips are forwarded in February of the following year to the address on file.

### **Students of Advisors on Sabbatical or Other Leave**

Chief Advisors that have been granted Sabbatical or other Leave shall complete documentation outlining the arrangements made for the supervision of graduate students and submit this documentation to the CBE Graduate Office. A copy of the documentation shall be forwarded to all graduate students involved for their information.

### **Procedure for Changing Chief Advisor**

Occasionally, a student may feel that it is in his/her best interest to change their Chief Research Advisor. The agreement of the current Chief Advisor should first be sought; in the event that it is withheld, the student must notify the CBE Graduate Chair, who will attempt to resolve the impasse. In these situations, the SGPS Principles and Guidelines Regarding Graduate Student Supervision shall be followed ([http://grad.uwo.ca/current\\_students/supervising\\_guidelines.htm](http://grad.uwo.ca/current_students/supervising_guidelines.htm)).

### **Scholastic Offences**

Members of the University Community accept a commitment to maintain and uphold the purposes of the University, and in particular, its standards of scholarship. It follows, therefore, that acts of a nature

that prejudice the academic standards of the University are offences subject to discipline. Any form of scholastic dishonesty, including plagiarism, that undermines the evaluation process, also undermines the integrity of the University's degrees. The University will take all appropriate measures to promote academic integrity and deal appropriately with scholastic offences.

### **Appeals**

A graduate student is entitled to appeal in any situation in which he/she feels that s/he was not treated fairly. It is incumbent on the student to first attempt to resolve the matter informally with the person in authority who is most immediately involved, e.g., Chief Advisor or course instructor. In the event that a satisfactory resolution is not obtained, the student may then lodge a written appeal with the CBE Graduate Chair. This must be done within six (6) weeks of the occurrence of the matter under appeal. All appeals proceedings must be confidential, and the Department must provide a ruling within six (6) weeks of submission of the written appeal.

The CBE Graduate Chair will attempt to mediate the dispute; if this is not successful, the CBE Graduate Chair will either (a) rule on the matter, or (b) refer the matter to the CBE Graduate Committee for a ruling. If the matter is referred to the CBE Graduate Committee, then any member of that Committee who is directly involved with the matter being appealed will withdraw from the Committee during the hearing. Immediately prior to the final ruling the student is entitled to make a verbal presentation to the person or body making the decision, upon which occasion s/he may elect to be accompanied by a colleague who is a graduate student in Engineering.

If at this stage the appeal is not successful the student may appeal to SGPS. For more information regarding the appeals policies, please see the SGPS regulations (<http://grad.uwo.ca/calendar.htm>).

### **Clearance Form**

All students must complete a Graduate Student Clearance Form before departing from the Faculty of Engineering. This form is online at the CBE website and must be submitted to the CBE Graduate Assistant before a Change of Status form will be forwarded to SGPS to permit the student to graduate.

### **Graduation Completion and Convocation**

Completion occurs after SGPS sends email notification to the CBE Graduate Office. There are three Convocation dates: June (spring), October (fall), and February (in absentia). Students receive information from SGPS via UWO email, along with notification of their completed thesis.

If you are in the final term of your program, you are required to apply to graduate via the Student Center. A student's application for graduation may only occur during the term in which they intend to complete the requirements of their degree. Applications must be submitted prior to the end of that term to ensure eligibility. To apply, log in to the Student Center and choose the "Apply for Graduation" link from the left hand menu. Follow the instructions to complete the process. This is the last step in

securing completion of your graduate degree; without this you will not receive a diploma, nor will your transcripts show that your degree has been completed or awarded.

Students may check the Convocation website (<http://www.convocation.uwo.ca/>) for details of their particular convocation date and time, to check how their names and program details will appear on their diploma or to order additional tickets. If students will not be attending convocation, they must make arrangements with the Registrar's Office to receive their diploma (<http://www.registrar.uwo.ca/index.cfm/student-records/diplomas/>).

### **Iron Ring**

Each January, Undergraduate Services sends information regarding Iron Ring information sessions. The criteria to qualify for an iron ring, graduate students require one of the following:

- a. an engineering undergraduate degree from an accredited university in Canada
- b. be a member of PEO
- c. be eligible to be a member of PEO (if not currently a member, a student needs to apply for evaluation of credentials).

### **Teaching Assistantships (TA)**

TA appointments are made by the Chair of CBE. Appointments of up to 10 hours per week are made in the Fall and Winter terms according to undergraduate teaching needs and available funding. Students must maintain at least a 70% average to be eligible for a TA. Students are not obligated to accept teaching assignments. However, any decision made by a student not to undertake assigned duties may result in a reduction in total annual support.

TA assignments are valuable opportunities for graduate students to strengthen their understanding of undergraduate engineering material. Common engineering courses such as engineering communication, introductory engineering design, and other core courses are important components of undergraduate teaching and represent a large proportion of the Teaching Assistantships available. Many graduate students are given teaching assignments in these areas and so should not expect assignments in their specialized area of research.

The rules governing the assignment of hours worked in any given week are defined in the Collective Agreement between the Graduate Teaching Assistant (GTA) Union and the UWO. Procedures for dealing with unsatisfactory teaching performance are set out in that Agreement as well. More information regarding responsibilities may be found at [http://www.grad.uwo.ca/teaching\\_assistantships.htm](http://www.grad.uwo.ca/teaching_assistantships.htm).

### **Accessibility for Ontarians with Disabilities Act (AODA) Training**

AODA training is required for all who interact with UWO's "public" which has been defined as our undergraduate student population. If you accept a TA position, you will be required to complete AODA training via WebCT before your employment begins. Training is only required one time.

### **Participation in Tutorials and Laboratories**

A TA is expected to be completely familiar with the problem sets and experiments, and to have studied each beforehand. All students' questions, no matter how trivial, are asked in good faith and should be respected.

### **Marking of Assignments, Mid-Terms and Reports**

All marking should be performed in a thorough, consistent manner. The reasons for all marks deductions should be indicated in clear, unambiguous terms. Grading should be done in the context of a scheme, which has been approved by the course instructor. The grading scheme should be made available to undergraduate students in cases of dispute of the mark assigned. Normally, marking should be done within one week or as arranged with the course instructor. The TA is responsible for delivering copies of marks sheets to the course instructor on a regular basis.

### **Proctoring Duties**

TAs can be asked to proctor quizzes, mid-term and final exams. TAs will be required to assist with the Proctoring duties during the final examination period. TAs are expected to arrive at the exam room 30 minutes in advance of the scheduled exam to help with arrangements in the examination room, and remain up to 10 minutes after the examination is completed.

### **TATP (Teaching Assistant Training Program)**

SGPS sponsors and supports programs and resources designed to assist all TAs in developing their University-level teaching skills. All graduate students are strongly encouraged to register and participate in the on-campus program.

### **PROGRAM OF STUDY: MASTER OF ENGINEERING (MENG) PROGRAM**

Students in the MEng program are not provided with financial support of any kind by the Faculty Advisor, CBE, Faculty of Engineering or SGPS.

### **Course Requirements**

The professional Master of Engineering (MEng) degree program is offered in (a) Chemical Engineering, (b) Environmental and Green Engineering, (c) Biomaterials and Biochemical Engineering, and (d) Process Controls and Safety. Graduate level training is offered with main emphasis on the application of engineering in different fields. A minimum 10 courses is required for graduation. A project (self study or short term investigation) may replace two courses. Students may be enrolled full time or part time, and may select courses offered by other departments upon consultation with and approval of the MEng Program Advisor.

### **Engineering Project**

Should the student choose to complete an Engineering Project, the topic will be selected in consultation with a CBE faculty member. A detailed engineering report is required and each candidate will present this material at a public lecture. Report guidelines are found in the Program Forms section of the CBE website.

### **Transfer from MEng to MEng Program**

If a student wishes to transfer from the MEng to the MEng program, they must have completed at least two terms and four courses, while maintaining an 80% or higher grade average. All courses for credit from the MEng program at UWO will be counted toward the course requirements for the MEng program.

### **Application and Admission to MEng**

Upon completion of the MEng program, students may wish to continue their studies and ultimately complete a MEng at Western. Students must complete an application and supply the required documentation, except for transcripts, diplomas or English Proficiency exam (if required for their initial admission) adhering to the application deadlines listed above.

### **PROGRAM OF STUDY: MASTER OF ENGINEERING SCIENCE (MEng) PROGRAM**

The MEng program is a research degree that requires a thesis and a minimum of 4 courses. In consultation with the Chief Advisor, each student shall select a set of courses required for the MEng program.

A maximum of two (2) graduate Engineering courses taken previously at another institution can be transferred to fulfill the requirement if the grade is equivalent to an "A" based on the UWO scale. At least half of the courses taken at Western must be stand-alone graduate courses to fulfill course requirements. Students may claim credit for these graduate-level courses in accordance with the requirements as stated on the Proposed Program of Study form, including an official course outline and other documentation.

### **Annual Progress Reports**

SGPS requires that student's progress be evaluated annually by the student's advisory committee. The MEng Committee must have 2 members including the supervisor(s). Each member must have at least non-core SGPS membership status. The Progress Report with committee review needs to be submitted by the end of each academic year of registration (i.e. the 3<sup>rd</sup>, 6<sup>th</sup>, and 9<sup>th</sup> terms as applicable).

A Progress Report should normally be submitted following a Face-to-Face Advisory Committee meeting. However, the meeting may be substituted by a Review-via-Report format, if the supervisor(s) proposes, and the student and Advisory Committee agree to, in the following cases:

- The 1<sup>st</sup> year MEdSc student report.
- If the thesis defense is scheduled during the same term when a Progress Report is due.

Face-to-Face meetings must be held under the following conditions:

- If the student, supervisor and/or a member of the Advisory Committee, or the Graduate Chair requests a Face-to-Face meeting
- When student cannot complete their thesis requirements within the normal 6 term period, each and every Progress Report, starting from the 6<sup>th</sup> term, must be done through a Face-to-Face meeting, so that the Committee can closely monitor the progress.
- If any significant issue has been raised in the last Progress Report which imposed a condition, the following Progress Report must be done by a Face-to-Face meeting.

At any time and under any condition, if the student, supervisor and/or a member of the Advisory Committee, requests a review meeting, the supervisor must arrange such a meeting within 3 weeks of the request. Such a meeting must be a Face-to-Face meeting and a Progress Report must be completed.

For Face-to-Face Advisory Committee meetings, the candidate is required to fill in and distribute a copy of the progress report (with the supervisor's comments already filled in) to each committee member and then make a 10 minute presentation, followed by questioning and answering period. The progress report form is online at <http://www.eng.uwo.ca/chemical/program-forms.htm>. The student should also bring at least one copy of all publications generated at UWO.

For Review-via-Report, the supervisor (not the student) must first inform the Advisory Committee Members that s/he intends to follow this route for the current Progress Report. If there is no objection by the advisory committee, the student must complete and send the committee members a copy of this form (with the supervisor's comments already filled in), plus any other materials deemed necessary such as publications, at least 5 working days before the report due date. Any Member may contact the student for a short questioning/answering period and request additional information. If there is no concern, the Members will sign the form. However, if any Member has any concern during the process, a Face-to-Face meeting of the Advisory Committee must be held.

At the end of each review, via Face-to-Face meeting or Review-via-Report, a scanned version of the fully signed Progress Report Form must be submitted to GC via email, within one week of the Date of Review, either directly by the supervisor or by the student but copied to the supervisor on the same email. The supervisor is responsible for sending the e-file and for keeping the originally signed form on file until one year after the student's graduation or withdrawal.

A mark or pass/fail is not given as an outcome of such review, the Advisory Committee, however, may make a number of requests/recommendations. For example, they may request/recommend the student to take some extra courses, to gain more background knowledge through reading or literature survey, to submit a report, etc. Committee may, however, also request the student to withdraw from

the program. Failure to complete the Progress Report or submit the Progress Report Form on time will be considered have not completed the program requirements, which may lead to the withdrawal or dismissal from the program.

### **Thesis**

Evaluation of a MEd thesis takes place in two stages: a written evaluation of content and form and an oral examination at which the candidate defends his/her thesis. A Board of Examiners shall be appointed for this purpose; the Chief Supervisor is to arrange the date and time for the four examiners to meet. It is a conflict of interest for students to contact examiners in any regard to their own defense. The Thesis Examination Board form is submitted five (5) weeks prior to the defense date.

The Chief Supervisor shall also propose members of a Student Thesis Advisory Committee and approved by the CBE Graduate Chair. The student advisory committee should consist of 2 SGPS members: Supervisor and one other SGPS member or 2 Joint Supervisors. However, both members of the advisory committee cannot be Emeritus, Adjunct or Limited Duties professors.

Before starting to write a thesis, the student must obtain a current copy of the Guide for the Preparation of Theses from SGPS ([http://grad.uwo.ca/current\\_students/thesis\\_regulations/index.htm](http://grad.uwo.ca/current_students/thesis_regulations/index.htm)). All theses must satisfy the requirements of this guide. The entire process, from the CBE Graduate Chair's request for a thesis examination to the actual date of defense, requires approximately five (5) weeks. Any delay to submission of your thesis or thesis forms will result in the delay of your defense.

### **Submission and Reading of Thesis**

A Submission of Thesis form must be completed and returned, along with four (4) copies of the thesis, to the CBE Graduate Assistant, at least three (3) weeks before the date of the oral examination for reading by the student's Board of Examiners. No revised versions may be submitted after the thesis has been read and evaluated by the examiners.

Prior to the public lecture and oral examination, each examiner shall be given a copy of the thesis together with an evaluation form on which to record his/her evaluation of the thesis, and, if applicable, a thesis confidentiality agreement. The candidate cannot contact the examiners regarding the evaluation. An evaluation guideline is provided to each examiner with the thesis. The completed form must be returned to the CBE Graduate Office at least three business days before the scheduled date of the oral defense. The Thesis Examination and Public Lecture may be postponed or cancelled if any step in the examination process is not completed on schedule (e.g. the candidate fails to submit the Thesis for Examination on schedule, the Examiners fail to submit evaluations on time, etc.). It is the responsibility of the student's supervisor to reschedule the defense if it is postponed or cancelled.

The thesis content must be judged "acceptable to proceed" by a majority of all the examiners before the oral examination can take place. The final decision as to the acceptability of the thesis content will be

judged following the oral examination. Complete guidelines for submission, reading, content and form of the thesis are found online.

### **Public Lecture and Oral Examination**

The candidate shall be required to present a lecture on his/her thesis research, open to all members of the university to be followed by the Oral Examination. The Supervisor arranges the date and time of the public lecture and examination.

### **Decision**

The acceptability of the thesis shall be determined by a majority of the examiners. If a majority finds that each of the thesis content, thesis form, and the oral defense are acceptable, the candidate passes the Thesis Examination. The Examiners' approval may be conditional on the candidate successfully completing minor revisions to the thesis content or thesis form. If the candidate has been unsuccessful, SGPS appoints a Re-Submission or Re-Examination hearing Committee to determine the course of action to be taken ([http://grad.uwo.ca/current\\_students/thesis\\_regulations/section\\_5.htm](http://grad.uwo.ca/current_students/thesis_regulations/section_5.htm)).

### **Final Submission of Thesis**

Once the graduate candidate defends and passes his/her defense, s/he should book an online appointment for SGPS approval; appointments cannot be made for same day service. An email confirmation will be sent to the student of the booking and/or cancellation.

### **Transfer from MEd to PhD Program**

From time to time a student in the MEd program will demonstrate excellent potential for doctoral studies, the student and the Chief Supervisor both agree that rather than complete the MEd, the student should expand the research into a doctoral thesis. Requests for such transfer must be submitted on an "Application for Transfer" form (available online at the CBE website). CBE requires this must be requested by the end of the third term of registration. An oral comprehensive examination will then be scheduled during the fourth term, and the transfer will occur at the beginning of the fifth term.

The minimum criteria regarding transfers to the PhD program are as follows:

- (a) Students are allowed to transfer if they maintain a minimum cumulative average of 85% in all graduate courses (at least two) in the first year of their graduate studies with a minimum of 80% in each course;
- (b) Students demonstrate excellent capabilities of pursuing a PhD, e.g. initiative, ideas, and focused research project;
- (c) The Chief Supervisor and Advisory Committee very strongly recommend the suitability of the candidate for PhD studies;
- (d) The CBE Graduate Committee reviews the recommendation, the candidate's background and research, and makes the final decision.

If the CBE Graduate Committee approves the transfer, the student must subsequently take and pass the comprehensive examination. Once the transfer occurs, the student shall be subject to all regulations and procedures applicable to PhD students.

### **PROGRAM OF STUDY: DOCTOR OF PHILOSOPHY (PHD) PROGRAM**

The PhD program is a research degree that requires a thesis and a minimum of 8 courses. In consultation with the Chief Advisor, each student shall select a set of courses required for the PhD program.

A maximum of four (4) graduate Engineering courses taken previously at another institution can be transferred to fulfill the requirement if the grade is equivalent to an "A" based on the UWO scale. At least half of the courses taken at Western must be stand-alone graduate courses to fulfill course requirements. Students must claim credit for these graduate-level courses in accordance with the requirements stated on the Proposed Program of Study form, including an official course outline and other documentation.

Of the required 8 courses, each student is required to take at least 3 stand-alone graduate core courses. A maximum of one (1) graduate Engineering courses taken previously at another institution can be transferred to fulfill the core course requirement if the grade is equivalent to an "A" based on the UWO scale. There is no limit to the number of core graduate courses taken at Western in CBE with an "A" grade (or equivalent) that may be taken into account when counting the core course requirements. Core courses are not required to be taken before the Comprehensive Examination.

#### **Comprehensive Examination**

The purpose of the Comprehensive Examination is to assess the suitability of the candidate for graduate work at the doctoral level and to identify any areas of weakness of the candidate in his/her discipline and field of specialization. The exam will focus primarily on the research topic and related background knowledge. The comprehensive exam should be completed before the end of the third term of registration, but may be delayed another term with a formal request from the research supervisor to the CBE Graduate Chair at least one month before the end of the third term of registration.

The Examination Committee should consist of 3-5 members, including 1 supervisor who chairs the exam and 2 non-supervisory SGPS members (at least 1 of whom should not be from the advisory committee and at least 1 who should be a regular CBE member). The examination committee should be formed at least 3 weeks before the proposed examination date and approved by the CBE Graduate Chair, who will ensure that each committee has sufficient members who are knowledgeable of the subject area of the student's research project.

The candidate is required to prepare a research proposal of 15 pages (minimum) not including figures, tables, or appendices with a maximum of 40 total pages. The report should be formatted with 1.5 line

spacing and a 12 pt font. A report should be submitted electronically to each examiner and the CBE Graduate Assistant for the student's file at least 10 business days (two weeks) before the exam.

The written research proposal prepared by the student must include the following sections:

- Description of research thesis problem (including motivation, objectives) with appropriate literature survey.
- Description of proposed experimental and/or theoretical approach, literature studies, and/or results (including tables and graphs) based on research completed to date to clearly show competence in carrying out research.
- Discussion of directions along which the research project is likely to evolve and the techniques to be developed, i.e., future proposed work to show that scope of the work is sufficient for PhD. This section must be at least 3 pages, plus a time table for the proposed thesis project.

The candidate is also required to provide personal and educational background, professional experiences (if any), areas of specialization or competence, all graduate courses taken and grades (Western or elsewhere), a list of any further evidence of the student's ability to perform original research such as special studies, reports, publications, manuscripts prepared conference presentations, etc. In case of publications and other written materials, the candidate is required to bring one hard copy to the examination.

The comprehensive exam will be scheduled for a maximum of 2 hours. The candidate will make a 15-20 minute presentation, followed by a question and answer period. The examiners should take turns asking questions, leaving 10 minutes at the end for discussion. The PhD comprehensive exam will be open to other faculty members, research staff, and other graduate students. In the case of a project that contains confidential information, a 15-20 minute closed session will be organized near the end of the examination period (without exceeding the two hour limit) with all visitors requested to leave, when the examiners shall ask questions relating to such confidential information. The candidate is not required to include any confidential information in the presentation but the confidential information must be included in the proposal. The examiners will also not ask related questions during the open portion of the exam, and they will limit their questions on matters that are confidential to the last 15-20 minutes of the closed session.

The exam may have 3 outcomes: (a) pass without condition, (b) pass with conditions, and (c) fail. The repeat exam must be taken within one term. In the case that a student is required to re-take the exam but does not pass without condition, the student cannot be given another opportunity to re-take again.

### **Annual Progress Reviews**

SGPS requires that student's progress be evaluated annually by the student's advisory committee. PhD Committee should have minimum of 3 members including the supervisor(s). Each member must have at least non-core SGPS membership status. For PhD students, the Progress Report with committee review needs to be submitted by the end of each academic year of registration (i.e. the 3<sup>rd</sup>, 6<sup>th</sup>, 9<sup>th</sup>, 12<sup>th</sup> and 15<sup>th</sup>

terms as applicable). However, PhD student may skip the 1<sup>st</sup> year (3<sup>rd</sup> term) report should their Comprehensive Exams take place in 3<sup>rd</sup> term.

A Progress Report should normally be submitted following a Face-to-Face Advisory Committee meeting. However, the meeting may be substituted by a Review-via-Report format, if the supervisor(s) proposes, and the student and Advisory Committee agree to, in the following cases:

- If the thesis defense is scheduled during the same term when a Progress Report is due.
- One of the 2<sup>nd</sup> or 3<sup>rd</sup> year PhD student reports.

Face-to-Face meetings must be held under the following conditions:

- If the student, supervisor and/or a member of the Advisory Committee, or the Graduate Chair requests a Face-to-Face meeting
- When student cannot complete their thesis requirements within the normal 12 term period, each and every Progress Report, starting from the 12<sup>th</sup> term, must be done through a Face-to-Face meeting, so that the Committee can closely monitor the progress.
- If there is a condition on the PhD Comprehensive Exam, the Progress Report immediately following the Comprehensive Exam must be done via a Face-to-Face meeting.
- If any significant issue has been raised in the last Progress Report which imposed a condition, the following Progress Report must be done by a Face-to-Face meeting.

At any time and under any condition, if the student, supervisor and/or a member of the Advisory Committee, requests a review meeting, the supervisor must arrange such a meeting within 3 weeks of the request. Such a meeting must be a Face-to-Face meeting and a Progress Report must be completed.

For Face-to-Face Advisory Committee meetings, the candidate is required to fill in and distribute a copy of the progress report (with the supervisor's comments already filled in) to each committee member and then make a 10 minute presentation, followed by questioning and answering period. The progress report form is online at <http://www.eng.uwo.ca/chemical/program-forms.htm>. The student should also bring at least one copy of all publications generated at UWO.

For Review-via-Report, the supervisor (not the student) must first inform the Advisory Committee Members that s/he intends to follow this route for the current Progress Report. If there is no objection by the advisory committee, the student must complete and send the committee members a copy of this form (with the supervisor's comments already filled in), plus any other materials deemed necessary such as publications, at least 5 working days before the report due date. Any Member may contact the student for a short questioning/answering period and request additional information. If there is no concern, the Members will sign the form. However, if any Member has any concern during the process, a Face-to-Face meeting of the Advisory Committee must be held.

At the end of each review, via Face-to-Face meeting or Review-via-Report, a scanned version of the fully signed Progress Report Form must be submitted to the Graduate Assistant via email, within one week of

the Date of Review, either directly by the supervisor or by the student but copied to the supervisor on the same email. The supervisor is responsible for sending the e-file and for keeping the originally signed form on file until one year after the student's graduation or withdrawal.

A mark or pass/fail is not given as an outcome of such review, the Advisory Committee, however, may make a number of requests/recommendations. For example, they may request/recommend the student to take some extra courses, to gain more background knowledge through reading or literature survey, to submit a report, etc. Committee may, however, also request the student to withdraw from the program. Failure to complete the Progress Report or submit the Progress Report Form on time will be considered have not completed the program requirements, which may lead to the withdrawal or dismissal from the program.

### **Transfer from PhD to MEd Program**

SGPS strongly discourages permitting students who have been admitted to a PhD program to transfer to the MEd program. To initiate this procedure, the student must complete the PhD to MEd transfer form, which will be forwarded to SGPS for final approval.

### **Thesis**

Evaluation of a PhD thesis shall take place in two stages: a written evaluation of content and form and an oral examination at which the candidate defends his or her thesis. The entire process, from the CBE Graduate Chair's request for a thesis examination to the actual date of defense, requires approximately eight (8) weeks. Any delay to submission of your thesis or thesis forms will result in the delay of your defense. The SGPS thesis regulations website provides thesis submission deadlines for doctoral theses (use Thesis Examination Timelines → Doctoral Candidate links). It is the responsibility of the student's supervisor to reschedule the exam if it is postponed or cancelled.

The Chief Supervisor shall propose the date, time and members of a Student Thesis Advisory Committee to be approved by the CBE Graduate Chair. The student advisory committee should consist of at least 3 SGPS members consisting of their Supervisor(s) and at least two other SGPS members who are not officially student's thesis supervisor. A student advisory committee can have more than two other SGPS members. However, all members of the advisory committee cannot be Emeritus, Adjunct Appointments, or Limited Duties instructors.

Before starting to write a thesis, the student MUST obtain a current copy of the SGPS guideline titled "Thesis Regulation Guide" ([http://grad.uwo.ca/current\\_students/thesis\\_regulations/index.htm](http://grad.uwo.ca/current_students/thesis_regulations/index.htm)), which provides detailed instructions concerning thesis preparation and format, and the procedures to be followed for scheduling and conducting a PhD Thesis Examination. All theses must satisfy the requirements of these guidelines.

A Board of Examiners shall be appointed for the written evaluation of content and form and an oral examination and **defense**; the Chief Supervisor is to arrange for four examiners. The Board of Examiners form is due eight (8) weeks prior to the defense date. It is a conflict of interest for students to contact examiners in any regard to their own defense.

### **Submission and Reading of Thesis**

A Submission of Thesis form must be completed and returned to the CBE Graduate Assistant, at least six (6) weeks before the date of the oral examination for reading by the student's Board of Examiners.

Once the Submission of Thesis form is submitted, the remainder of the process is electronic.

Prior to the public lecture and oral examination, each examiner shall be given a copy of the thesis together with an evaluation form on which to record his/her evaluation of the thesis, and, if applicable, a thesis confidentiality agreement. No revised versions may be submitted after the thesis has been read and evaluated by the examiners. The candidate cannot contact the examiners regarding the evaluation. An evaluation guideline is provided to each examiner with the thesis.

The thesis content must be judged "acceptable to proceed" by a majority of all the examiners before the oral examination can take place. The final decision as to the acceptability of the thesis content will be judged following the oral examination.

### **Public Lecture and Oral Examination**

The candidate shall be required to present a lecture on his/her thesis research, open to all members of the university to be followed by the Oral Examination. The CBE Graduate Assistant will make arrangements for the lecture. The Oral Examination arrangements are handled entirely by SGPS.

### **Decision**

The acceptability of the thesis shall be determined by a majority of the examiners. If a majority finds that each of the thesis content, thesis form, and the oral defense are acceptable, the candidate passes the Thesis Examination. The Examiners' approval may be conditional on the candidate successfully completing minor revisions to the thesis content or thesis form. If the candidate has been unsuccessful, SGPS appoints a Re-Submission or Re-Examination hearing Committee to determine the course of action to be taken.

### **Final Submission of Thesis**

Once the graduate candidate defends and passes his/her defense, s/he should make arrangements to submit the final thesis electronically. See procedures for submission of final thesis at

[http://grad.uwo.ca/current\\_students/thesis/submission.htm](http://grad.uwo.ca/current_students/thesis/submission.htm).