



Department of Electrical and Computer Engineering

Graduate Student Handbook

Prepared by

Research Committee
Department of Electrical and Computer Engineering
University of Saskatchewan
Saskatoon, Saskatchewan, S7N 5A9

Updated June, 2011



Department of Electrical and Computer Engineering

Graduate Student Handbook

1. Introduction

The purpose of this manual is to inform graduate students our policies and regulations, those that are unique to the Electrical and Computer Engineering (ECE) Department as well as those of the College of Graduate Studies and Research (CGSR). This manual is intended to be an easy reference for graduate students as they pass through their graduate program from registration to graduation.

2. Other Sources of Information

Each year, the University of Saskatchewan publishes its online calendar, which describes all the Colleges and Departments. The Graduate Studies and Research section provides information on important dates, requirements for admission, health benefits, registration and fees, scholarships, as well as all the graduate courses that are offered. The CGSR also produces its own calendar detailing all of the information relevant to the graduate studies and research. Further information for current students can be found from its website (www.usask.ca/cgsr).

Graduate students should also be aware of the following resources on campus: Graduate Student Association (Phone: 966-8471), The International Student Advisor (966-4923); Student Counselling Service (966-4920); Student Health Centre (966-5768) and Student Help Centre (966-6982). These organizations render assistance in health insurance plans, health care, counselling, etc.

3. Registration & Other Administration Procedures

Student registration can happen in September, January and May of each year. It is however preferred that students start their graduate programs in September. This has a great advantage in terms of course selection. Given that no courses are offered in May term, students are generally not recommended to start in May. This, however, can be allowed under special circumstances and arrangements between students and their supervisors.

3.1 Department Registration: Students registering for the first time should report to the Graduate Secretary of the ECE Department and pick up a registration form. If a supervisor has been chosen, the student should consult with the supervisor as to the courses that should be taken. Otherwise the student must consult the Graduate Chair. The form must be signed by the student's supervisor and each course should be initialled by the instructor of that course. The Department's Graduate Secretary will make arrangements to assign a desk, if space is available. The form for key requests must be signed by the student's supervisor and submitted to the Dean's Office in the College of Engineering.

- 3.2 CGSR Registration:** For students coming from countries where English is not the regular language of instruction and if not already provided, the CGSR will require official transcripts and certificates from previous university programs as well as an official proof of English proficiency (English tests and scores accepted by CGSR are listed at www.usask.ca/cgsr/prospective_students/requirements/english.php). Registration is done online through PAWS (www.paws.usask.ca). The Graduate Secretary will help the student with his/her **first time** registration on PAWS. Classes normally begin following the first week of September and the first week of January. Students are expected to register their classes one week prior to the start of classes. Students also have the option to make changes to their registration for up to two weeks after classes begin. After the deadline students will have to pay a late fee should they wish to change, add or drop any classes.
- 3.3 Registration with Registrar:** Students may pay their tuition fees at the Cashiers Office located in the Administration Building. Students now have an option through PAWS to pay their tuition fees online. Students can pay the full amount or by sequential deductions from University scholarships, research and teaching assistantships, etc. Arrangement for the latter option must be made through Student Accounts located in the Administration Building. The fee structure is given in the University Calendar.
- 3.4 Choosing a Supervisor:** Students who have not chosen a supervisor prior to arrival can first select an advisor and then interview with prospective supervisors based on their research interests. The selection of a supervisor must involve a mutual agreement between the student and supervisor. Once agreed, the student or supervisor should inform the Graduate Chair.

4. Course Work

For the ECE Department, students are required to complete a minimum of 30 credit units for the Master of Engineering (M. Eng.) degree (without a thesis) and Postgraduate Diploma (P.G.D.), 12 credit units for the Master of Science (M.Sc.) degree (with a thesis) and 6 credit units for the Ph.D. degree. The 6 credit units of the M. Eng. project are counted toward to the 30-credit requirement of the M. Eng. degree. A student may choose relevant courses from within the Department, or after consultation with the supervisor, from other Departments and Colleges. Under some circumstances, these requirements for the M. Eng. and P. G. D. degrees may include, respectively, up to 6 and 12 credit units at the 400-level.

The student must consult with the supervisor and the instructor of the class before enrolling in undergraduate classes. If a supervisor requests a student to take an undergraduate class as part of his/her program, the student must inform the Graduate Secretary to avoid paying extra fee for the class. If a student wishes to take an undergraduate class for personal interest, the student will be charged the cost of the class (*note*: there is a differential fee that applies to international students).

Each student must register in a Seminar course, EE990, as well as a Research course, EE992 (M.Eng.), or EE994 (M.Sc.), or EE996 (Ph.D.). This has to be done for each term, regardless of how long the student has been registered.

Within the student's first year of study, a program (including a class list) needs to be approved and submitted to the CGSR. If a student wishes, at a later date, to take classes other than those on the approved list, the student must consult with the supervisor and submit a "Special Change of Class" form (available from the Graduate Secretary).

The passing grades depend on the programs and are as follows:

Ph.D. – students must obtain a 70% in each class.

M.Sc. – passing grade per class is 60% with a minimum cumulative average of 70%.

M.Eng. – passing grade per class is 70% for 400-level classes and 60% for graduate classes with a minimum cumulative average of 70%.

P.G.D. – passing grade per class is 60% with a minimum cumulative average of 65%.

5. Advisory Committees

5.1 Ph.D. Committee: Each Ph.D. student shall have an advisory committee which oversees the student's program. The committee for a Ph.D. student will consist of the Graduate Chair, the supervisor, and at least three other members of the Graduate Faculty, one of whom must be from another Department (the cognate member).

Advisory Committee Meeting: The advisory committee shall meet at least once a year. The student is required to submit a written progress report to the committee members at least one week before each meeting. This report should include the following: (i) course work taken to date with marks included if available; (ii) the research objectives; (iii) a summary of work completed since the last meeting; (iv) research methodology and plan for the next twelve months. In each meeting, the student shall give a 25-minute oral presentation to summarize the research progress to date and future plans. A question period will follow student's presentation. At the end of the meeting the student will be dismissed and the Committee will discuss the merits of the presentation and the student's progress. The course work and other requirements of the student shall also be reviewed by the Committee. The Graduate Chair informs the student of decisions and recommendations made by the Committee with a copy of the meeting's minute. The last meeting of the Committee shall be to approve the writing of the thesis and the student should provide a Table of Contents of the thesis for this meeting. In this last meeting the Committee also reviews and recommends to the CGSR a prioritized list of potential external examiners.

5.2 M.Sc. Committee: A M.Sc. student shall work closely with his/her supervisor during the duration of the program. During the first year, a Program of Studies (POS) shall be provided to the CGSR stipulating what classes the student is expected to complete. The supervisor will also provide a Progress Report about the student's program at the end of the first year and each year thereafter. This shall typically be provided in September. An examining committee shall be chosen for the student when the supervisor feels that the student's thesis is ready for defence. The committee shall consist of 2 internal members from the ECE Department, the supervisor(s), as well as an external examiner from another Department. It is preferred to have the internal members from the same research field as that of the supervisor while still having diversity in examining committees to maintain

uniformity of thesis standard and format within the Department. One of the internal members shall also be appointed as the Chair of the examining committee. The appointment of an external examiner needs to be approved by the CGSR. It is the joint responsibility of the student and supervisor to ensure the quality of the thesis (including organization, English writing and formatting) before releasing it to the examining committee.

6. Ph.D. Comprehensive Exam

6.1 Purpose: The Ph.D. comprehensive exam is used as a means of judging whether or not the candidate has a mature and substantive grasp of the research discipline as a whole. A comprehensive knowledge of the subject will not only help to validate the Ph.D. student as an expert in the general field of his/her choice, but will also complement research activity in the specific area under investigation. This exam will also allow the student to organize his/her ideas into a comprehensive written document and give him/her experience in presenting his/her ideas orally and to be prepared to answer questions on his/her feet.

6.2 Timeline: The exam shall be held within the first two years of the Ph.D. program and after the student has completed all the required course work.

6.3 Format: The exam shall consist of three parts: (i) a written research proposal; (ii) an oral presentation by the student and (iii) an oral examination.

Written Research Proposal: The content of the document should include at least an up-to-date literature review and applicable research plan. This document should not exceed 20 pages. Use 12-pt font size, one-and-one-half or double-spacing and set margin at 1" all around. The proposal must be provided to the advisory committee at least 2 weeks prior to the exam.

Oral Presentation: The maximum allowable time for the oral presentation of the research report is 30 minutes. A general audience is encouraged to attend this portion of the exam.

Oral Examination: This portion of the exam, not open to the general audience, involves questions related specifically to the research proposal as well as topics of more general nature but cognate to the candidate's field of research.

At the end of the oral exam, the advisory committee shall discuss both the suitability of the written research proposal and the student's performance during the oral exam. A pass/fail decision and other recommendations shall then be made by the committee.

7. Transfers

7.1 Transfer from M.Sc. to Ph.D.: It is possible for an excellent M.Sc. student to transfer to the Ph.D. program on the recommendation (in writing) of the supervisor. This should normally take place within the first 18 months of the M.Sc. program. The student must have excellent marks (average of 85% or greater). An average of 80% might be accepted if the student already has a M.Sc. from another university.

Upon receiving the student's request and supervisor's recommendation and with the positive support of the Graduate Chair, the student shall be asked to undergo a qualifying exam. The purpose of a qualifying exam is to judge whether the student has the potential to obtain sufficient knowledge in the field of Electrical and Computer Engineering to proceed toward candidacy for the Ph.D. degree.

For the qualifying exam, the student must give a presentation (about 30 minutes in length) on his/her M.Sc. progress to date to the advisory committee. After the presentation, the student will be orally examined by the committee. If recommended by the advisory committee, the student can then be transferred. Note that a transfer student shall have to complete 18 credit units of courses (12 required for M.Sc. and 6 required for Ph.D.). Also the transfer student is still required to take a comprehensive exam in a later date.

7.2 *Transfer Between M.Eng. and M.Sc. or From Ph.D. to M.Sc./M.Eng.:* For a possible transfer from M.Eng. to M.Sc., the student must have completed at least 6 credit units with an average of at least 75%. With the permission of the supervisor the student may submit a request in writing to the Graduate Chair requesting a transfer. The Graduate Chair shall make the final recommendation to the CGSR after considering the student's request, academic performance and other supporting evidences.

The request for a transfer from M.Sc. to M.Eng., or from Ph.D. to M.Sc./M.Eng. must also be made to the Graduate Chair by the student in writing.

7.3 *Transfer From or Into P.G.D.:* A P.G.D. student, who was fully qualified as a Master candidate at the time of admission, may request to transfer into the M.Eng. program any time.

A P.G.D. student who was not fully qualified as a Master candidate at the time of admission may, at the invitation of the supervisor and approval of the Graduate Chair, transfer to the M.Eng. or M. Sc. program upon completion of 15 credit units of 800-level coursework with an average of 80% and no grade below 75%.

A M.Sc./M.Eng. student may request a transfer into the P.G.D. program at any time during his/her program.

7.4 *Transfer of Graduate Courses from Other Universities:* If a student has taken graduate courses at another institution and they have not been used towards a degree, these courses might be transferred for credit to the University of Saskatchewan. The student must submit the transcript showing the courses requested for transfer to his/her supervisor. The supervisor shall determine how these courses compare to courses at the University of Saskatchewan and when applicable submit a request for credit transfer to the Graduate Chair.

8. Graduate Scholarships & Teaching Assistantships

8.1 *Scholarships:* Graduate scholarships are awarded to qualified Ph.D. and M.Sc. students on a biannual basis. Please refer to the Department's latest Scholarship Policy for more detailed information and for the procedures on how to apply.

8.2 *Assistantships:* A limited number of student assistantships are available within the Department, which include marking of undergraduate assignments and demonstrating in undergraduate laboratories. Students should consult with the Department's Head Secretary prior to each term to determine what are available, the hours, and rate of remuneration.

9. Employment During Graduate Program

9.1 *Students Working off Campus:* Canadian and landed immigrant students may gain employment off campus. A student who is not on scholarships may work provided it is discussed with his/her supervisor. There is no limit to the number of hours per week.

9.2 *Visa Students Working Off Campus:* Visa students are allowed to gain employment off campus while in their graduate programs if they have a valid study permit and obtain a work permit. Students must discuss with their supervisors about their desire to work off campus and declare on the amount of hours a week the students will work. Provided that the students are not on any scholarships, visa students may work up to a maximum of 20 hours per week during regular session and up to 40 hours per week during scheduled breaks (such as Christmas break, reading week, etc.).

9.3 *Students on Scholarship:* The above information also applies to all students receiving Department scholarships and NSERC scholarships with the exception that only a maximum of 12 hours per week is allowed.

10. Department's Policies

10.1 *EE990 Seminars:* All graduate students are required to enrol in EE990 regardless of how long they have been in the program. There is no extra registration fee for this class. Students will be expected to make presentation(s) at the seminar at least once (for M.Sc. and M. Eng. students) and twice (for Ph.D. students) during their programs. All graduate students are expected to attend all of the seminars in EE990.

10.2 *Use of Departmental Copying/Fax Machines and Telephones:* To use the Department copying or fax machine or a telephone for long-distance calls, a student must have the permission to use the supervisor's account. Photocopies, faxes, long-distance phone calls are only to be used for purposes authorized by the supervisors.

10.3 *Use of Office Supplies:* The Department does not provide graduate students with office supplies. Students' needs should be discussed with their supervisors.

10.4 *Use of Secretarial Time:* The Department does not provide secretarial support (typing, copying, etc.) for graduate students. However, secretaries will assist graduate students in

administrative questions such as teaching assistant employment, keys, student desk placements, and organization of student advisory committee meetings.

10.5 *Ordering Equipment and Supplies:* Any items that are not available through the Tech Shop may be ordered through the Head Technician. The student should discuss the matter with his/her supervisor. The supervisor should then either email or give a written permission and an account to cover any charges to the Head Technician.

10.6 *Use of Research Equipment and Supplies:* The equipment and supplies in the research and undergraduate laboratories belong to the ECE Department. Before using or borrowing these materials, graduate students must obtain permission directly from the supervisor of the research lab or the technician in charge of the teaching lab.

Some items (mostly consumables) are available from the Tech Shop. The students must get permission from their supervisors for their needs, then email or bring written permission to the Head Technician.

10.7 *Thesis Production and Reproduction:* All Ph.D. and M.Sc. students should consult the CGSR guidelines before beginning to write a thesis (see Section 2 of this Handbook). They should also consult with their supervisors and look over completed theses that have been accepted in the past. Students may sign out past theses from the Department Theses Library located in the Head Technician's office or access electronic copies available at <http://library2.usask.ca/etd/>.

It is the student's responsibility to prepare and assemble all materials for the thesis. The Department shall, however, provide the student with 5 copies to be distributed to the examining committee. The original paper copy of the thesis must be submitted to the Department secretary at least 3 weeks prior to the anticipated defence date.

Once the required corrections have been made after the thesis defence, the student is required to provide 1 bound copy of his/her thesis to the Department and 1 electronic copy to the CGSR. The student may also be required to submit a bound copy to TRILabs if he/she has worked there.

10.8 *Department Requirements to Graduate:* Before a graduate student can obtain a degree, he/she must complete and return the forms given to them by the Graduate Secretary. These forms include the Graduate Student Sign-Out Form, the Department Statistics Form, as well as all the forms that are to be returned to the CGSR. As mentioned before, for Ph.D and M.Sc. students a bound copy of the student's thesis must also be submitted.

11. Travel, Leaves, and Vacation

11.1 *Travel:* There will be times throughout your program when you may plan to attend and present paper(s) at a technical conference. The University has set up travel grants to assist

in the cost incurred by these events. You can find an application form and deadline information for the grants at www.students.usask.ca/moneymatters/funding/. The College of Engineering might also provide travel grants and the information is sent to graduate students by the Dean's Office in March of each year.

11.2 Leaves: Leaves of absence are available to students for compassionate, medical, maternity, adoption, parenting and internship reasons (for a definition of each of these leaves please review the Rules & Regulations document at www.usask.ca/cgsr). Students must obtain an approval from their supervisors and then submit a leave request in writing to the Departmental Secretary. Leaves are granted in 4-month blocks to a maximum of 12 months. While on leave, a student's time in program is suspended, tuition is not charged and any financial support from the University is stopped. Leaves of less than one month should be arranged with the student's supervisor.

A student may, with permission of his/her supervisor, take leave for up to one year for personal reasons without withdrawing from the program. In this case, tuition fees apply and time in program continues for the duration of the leave.

11.3 Vacation: Graduate students are entitled to a maximum of three weeks of vacation per year, in addition to weekends and statutory holidays. Students planning to take a vacation should inform their supervisors and Graduate Chair in writing in advance of the planned absence. Whenever possible, an e-mail address and telephone number where the student can be reached while on vacation should be provided. The student is expected to plan vacations in consultation with the supervisor, and to make appropriate arrangements for care of ongoing research projects if necessary.

12. Safety

Safety is a high priority within the ECE Department. Students must ensure that they carry out their research work with the utmost care to ensure the safety of themselves and others.

12.1 WHMIS Training: The University requires that all employees and graduate students take the Workplace Hazardous Materials Information System (WHMIS) training course. Graduate students shall also be asked to take the Department of Health, Safety and Environment's "Laboratory Safety Course" before beginning work in the laboratory. Graduate students are also expected to sign a "Statement of Acceptance" to declare that they will abide by the safety rules and regulations set forth by the Laboratory Safety course and this handbook.

12.2 Safety Committee: The College has a local safety committee. Any safety concerns should be directed to this committee. Please check with the Departmental Secretary to obtain the names of the committee members.

Acknowledgment

The assistance Ms. Darla Orth in preparing the first version of this handbook is greatly appreciated.