

## **Dept. of Computer Science and Software Engineering Guidelines for Ph.D. Students**

The objective of the Ph.D. program in the CSE department is to educate highly qualified researchers required for the expansion of fundamental knowledge, for technological innovation and for addressing the needs of institutions of advanced learning. For details of the program we refer you to the Graduate Calendar from the School of Graduate Studies. Below, we provide a brief description of the critical stages/milestones of the program within our department.

### **CRITICAL MILESTONES**

#### **1. Advisory Committee**

This committee should be formed for each Ph.D. student during the first term of study. The committee should consist of the supervisor(s), two faculty members in the department, and one faculty member from outside the department. The committee is to be approved by the Graduate Program Director (GPD) on behalf of the Graduate Advisory Committee.

#### **2. Coursework**

The coursework required of a Ph.D. student (normally 3 graduate courses, without undergraduate equivalent, for a minimum of 12 credits) should be completed within the first year. The courses are taken with approval of the supervisor(s).

#### **3. Comprehensive Examination (ENCS 8501)**

Every Ph.D. student must take a *Comprehensive Examination*, ENCS 8501, within the first 12 months (for full-time students, and 24 months for part-time students) in the program. This is a written examination normally taken after completing the course requirements. For convenience, the examination is given three times a year: in February, May, and October. A student who has started the program in September can take the examination in May or October of the following year. A student starting in January can take the examination in October of the same year or in February of the following year. The examination consists of two components: core areas and advanced area. For the core areas, a student has to choose *two* subjects from the following six: (1) Data Structures and Algorithms, (2) Files and Databases, (3) Operating Systems, (4) Software Engineering, (5) Computer Architecture, and (6) Theoretical Computer Science. For the two core areas, the student has a total of 3 hours to write the examination: 90 minutes for each one. The advanced area, given two days after the core area, is a 3 hour examination

which tests the student on the concepts and techniques related to his/her Ph.D. research. The grade for each area is Pass/Fail. A clear pass grade for a core area would be above 60%, and 75% for the advanced area. To pass the comprehensive examination, the student has to pass the two core areas and the advanced area. The supervisor (and the advisory committee) may review the examination papers with the student and discuss strengths and weaknesses. The committee will then recommend the grade (Pass/Fail) for ENCS 8501 by email to the GPD. A student who fails in one or more areas may be given at most one more chance to repeat the examination(s) in the next round of the comprehensive examination. A second failure will normally result in withdrawal from the program. Students will be provided the syllabus for the core areas they choose to write in. For the advanced area, the syllabus would be provided by student's supervisor(s). For more information, please contact the Graduate Advisor in the CSE department (halina@cse.concordia.ca).

#### **4. Doctoral Research Proposal (ENCS 8511)**

After successful completion of the comprehensive examination, students must pass the doctoral research proposal, ENCS 8511 (6 Credits) within 18 (36) months after the first registration as a full-time (part-time) student. For this, a student has to prepare a written document describing his/her research proposal and defend it in the presence of the members of his/her Advisory Committee. The proposal should give clear evidence of knowledge of the research topic, motivation and importance, and understanding of the research problem and related work. It should also include indication of the research methodology, expected results, and a (timeline) schedule up to completion of thesis writing and doctoral defense. Upon successfully passing ENCS 8511, the student is officially admitted into (Ph.D.) *candidacy*.

#### **5. Ph.D. Seminar (ENCS 8011)**

Normally after 9 months of their admission to candidacy, Ph.D. students are required to register in this course and report their research progress in a seminar scheduled by the GPD and attended by the student's advisory committee and all other Ph.D. candidates enrolled in ENCS 8011. The seminar requirement includes (i) presenting a seminar on research progress since approval of the proposal and (ii) attending other Ph.D. seminars held during the course period; this is a two semester Fall+Winter course (indicated by /3 in ENCS 8011/3 when registering). The seminar is a good opportunity for the student to get critical feedback from the committee members and fellow students. After a student's seminar, the supervisor(s) will discuss and evaluates his/her work with the members of the advisory committee and inform the GPD of their decision about the student's grade (Pass/Fail) in this course.

**6. Annual Review and Progress Reports**

A student is evaluated every year by his/her supervisor(s), usually in May. Unsatisfactory progress in coursework or research may result in an unsatisfactory report. A student with unsatisfactory progress for two consecutive years may be withdrawn from the program, upon the recommendation by the GPD.

**7. Doctoral Research and Thesis (COMP 8901)**

Students are required to plan and carry out a suitable research, development, or design project, which leads to clear advancement in knowledge. The student must submit a written dissertation (thesis) based upon this work and defend it in an oral examination. For purpose of registration, this work will be designated COMP8901 (Doctoral Research and Thesis, 70 Credits). The thesis will be examined by a committee consisting of the student's Advisory Committee, an external examiner, and other examiners as endorsed by the GPD and approved by the Faculty Graduate Studies Committee and the Dean of Graduate Studies. Adequate time must be given for appointment of the external examiner and evaluation of the thesis, including the written reports from all examiners before the thesis defense (oral examination) can be held. It is necessary to allow a minimum of 6 weeks from the time of submission to the time of defense.

**Note:** References of time duration in the above are mainly for full-time students. Refer to the Graduate Calendar for other details.