

# PhD Qualifying Exam Guide

## **A. Goal of the Exam**

The goal of the exam is to ensure the student is well positioned to be successful in their PhD program. Specifically the committee will ask the following three sets of questions to assess the chance of success:

1. Does the student have the capacity, within an appropriate period of time, to advance knowledge – that is answer a deep question or solve an important problem that has not been answered/solved?
2. Is the proposed research project at the appropriate level of depth for a PhD with clearly-articulated objectives or hypotheses?
3. Does the supervisor(s) have the capacity to provide appropriate guidance to the student and resources for the project? Are there gaps that could be filled by another faculty member?

## **B. Timing of the Exam**

All PhD students, except those who have bypassed their MASc program, will take the qualifying exam within the first thirteen months of their PhD studies. A by-pass exam, which is described in a separate document, is similar to a qualifying exam in terms its goal. Students who start in September, will take their exam in the week before or after Labour Day of the following year. Students who start in January, will take their exam in the first two weeks of January of the following year. Students who start in May will take their exam in the first two weeks in May of the following year. The exam will typically take 1.5 hours, but may take longer as required. A professor will participate in up to three exams on a given day.

## **C. Exam Committee Membership**

The exam committee consists of at least four members or five members if there is co-supervision. The committee is comprised of the supervisor(s), 2 faculty members with knowledge in the research field and the exam Chair. Of the four members, three members must be from the CHE department. It is expected that each supervisor will chair at least one exam during the qualifying exam week (QEW). Committee members may participate in the exam remotely.

## **D. Prior to the exam**

The Graduate Office (GO) will inform all first-year PhD students of the timing of the QEW at the beginning of their program. The GO will determine and assign the Chair for each exam and provide the exam schedule to candidates normally four months prior to the QEW. Students are required to submit the qualifying exam proposal and abstracts to their committee at least two weeks before the exam.

### **E. During the Exam**

The committee will review the academic records of the candidate in the absence of the student. The Chair will then invite the candidate to re-enter the room and give a 20-minute oral presentation outlining the proposal. The chair will invite committee members to ask the candidate questions. The questions should include ones that probe the fundamentals related to the proposed PhD project. The committee will assess the readiness of the student to carry out the proposed research project based on both the written proposal and the oral examination.

### **F. After the Exam**

The qualifying exam is a pass/fail exam. Students will continue their PhD program after passing the exam. Students who fail the exam may choose to repeat the exam within 3 months after the first attempt, normally with the same exam committee. For students who do not attempt or do not pass the exam for a second time, the following may occur:

- The graduate unit may recommend to the School of Graduate Studies that the student's registration be terminated.
- The student may be given the option to voluntarily withdraw from the program
- The graduate unit may recommend to the School of Graduate Studies that the student be permitted to transfer to the MSc or MEng program, upon the recommendation of the committee, in the event that the research performed meets the MSc degree requirements, and that the student does not have a MSc/MEng degree from CHE at U of T.

Missing the scheduled exam is considered a "fail" unless there are extenuating conditions, such as health-related matters.

### **G. Recommended Format of the Qualifying Exam Proposal**

As part of the qualifying exam the student must submit a written proposal two weeks prior to the scheduled exam. This proposal helps the committee answer the three key questions listed above. The main body of the proposal should be within 25 typed pages including figures and tables (1.5-line spacing). It may be supplemented with appendices if appropriate. A typical proposal has following components:

1. Title
2. Abstract
3. Introduction (the big-picture motivation and significance of proposed work)
4. Objective and research questions/hypotheses.
5. Literature review (the current state of the art in the proposed research area, identification of knowledge gaps)

6. Research methods (experimental design/strategy, justification and limitations of equipment, tools and facilities to be used)
7. Results and discussion of preliminary findings
8. Status of on-going work and plan for future work (including a rough timeline in the form of a Gantt chart)
9. A list of references.