**Environmental Science PhD Program - Department of Physical and Environmental Science UTSC**

# PhD Proposal Appraisal

All PhD candidates are examined on the progress of their PhD program at a Proposal Appraisal ideally held **12 to 16 months** after registration. The purpose of this evaluation is to:

- ensure that the research proposal is sound;
- determine if the study can be completed within a normal PhD program;
- determine if the student has sufficient knowledge in the field to pursue the proposed research;
- to ascertain any knowledge gaps and
- suggest remedial action if necessary.

The examination consists of a **20 minute** presentation given by the student on the proposed thesis work followed by a question period of approximately one and a half to two hours. This oral examination will allow the student to demonstrate advanced expertise in their chosen area of research specialization, as well as their undergraduate level mastery of the disciplines related to their research topics, and the ability to defend a strong research proposal. Questioning by the appraisal committee will explore the candidate's grasp of principles and concepts underlying the study, ensure that methods are appropriate, and make suggestions for improvement of the research program. The questions should be challenging and in depth.

The emphasis will be on the theory and proposed approach, rather than on progress to date. At the end of the appraisal the student will be asked to leave the room while the committee discusses the student's performance. A positive vote of at least four members of the committee confirms that the student has passed. A negative outcome requires that the student retake the exam within **four months** by considering suggestions offered by the committee for improving the thesis research proposal. The outcome of the second exam will be either pass or withdraw from the program. **The Chair of the exam committee is responsible for returning appropriate documents (including the completed PhD Proposal Examination Report) and a copy of the research proposal to the graduate office after the exam.**

## PhD Proposal Appraisal Committee

The Appraisal Committee consists of the supervisor (and co-supervisor if relevant), the two members of the supervisory committee and **two other faculty appointed to the program or drawn from cognate departments,** one of whom will act as the examination chair.

Two weeks before the Proposal Exam the student must provide committee members with a PhD Proposal, a written report of 5,000-7,000 words exclusive of figures, tables and references outlining the conceptual framework of the study, objectives, methods intended and preliminary data if available. The outline for this document is given below.

## Suggested Outline - PhD Proposal

1. Background/Context

What were the observations, problems, research needs etc that lead to an interest in this topic? What is the rationale for looking at the problem?

2. Literature Review

   What studies have already been done on this or related questions or similar systems?

   What hypothesis, predictions, explanations or questions derive from the scientific literature? What are the gaps in knowledge?

3. Hypotheses/Research Objectives

   a. State what hypotheses you are proposing to test, and/or

   b. Clearly state the research objectives.

4. Significance/Relevance

   a. What is the point of doing this work in an applied, environmental or societal context

5. Methods

   a. Clearly state what methods you will use to obtain and analyze your data

   b. Associate the methods with your research hypotheses or objectives

   c. Provide an idea of how to restructure work if certain portions do not yield results

6. Preliminary Results (if available)

   a. Summarize any results already obtained

   b. Organize by hypotheses or objectives

   c. Interpret the results, don’t merely show the data

   d. What data still need to be collected

7. Discussion and Next Steps

8. Timelines

   a. Lay out tasks by months and terms

   b. Link to specific objectives such as publications, conferences, defence dates etc

   c. List proposed publications

9. Resources

   a. Cost of reagents, materials, software, outside analyses

b. Cost of technical help

c. Any equipment that may be specifically required

It is important that the student demonstrate to the committee that he or she can a) clearly state the problem and the rationale and methods to study it, b) logically design the study and alter the design as circumstances require, c) have sufficient grasp of the background to be able to interpret the data, d) have the organizational and intellectual skills to complete the work.