

Department of Civil Engineering

Ph.D. Comprehensive Examination Procedures

1. **Objectives.** To establish to the satisfaction of the Department that the student has a sound proposal for Ph.D. research, an effective grasp of his/her main and related areas of study and the ability to handle facts, new ideas, and concepts at the Ph.D. level.

Students should be:

- familiar with experimental and analytical procedures used or proposed.
- prepared to discuss and defend all proposed approaches to the problem, alternative approaches, their rationale, the procedures, the objectives and the hypothesis.
- prepared to evaluate the potential significance of the results they may obtain and their relationship to further experimental work.
- aware of other relevant information and have a working knowledge of the area of study.

2. **Timing.** Ph.D. students must complete the comprehensive examination within four to eighteen months of registering in the Ph.D. program. It is anticipated that the majority of students will complete this requirement within the first 12 months of their studies. Exceptions to the 18-month time limit will be considered only in certain circumstances (e.g. part-time students) and must be approved by the Graduate Studies Coordinator.

3. **Research Proposal.** The qualifying exam is an oral examination based on a written thesis research proposal prepared in the general format of a NSERC Discovery Grant proposal. The research proposal should discuss the merits of the proposed research and will be evaluated in the following areas:

- originality and innovation;
- significance and expected contributions to research;
- clarity and scope of objectives;
- clarity and appropriateness of methodology;
- feasibility

The proposal should single spaced, written in a 12 pt font and must contain a maximum of 4000 words (not including figures and tables) to describe the proposed research. Details must be provided on:

- the student's recent progress in research activities related to the proposal;
- the objectives: both short and long term;
- literature pertinent to the proposal;
- methods and proposed approach;
- anticipated significance of the work; and
- proposed timeline of research activities

This thesis research proposal must be made available to the members of the examining committee at least two weeks prior to the examination. At the beginning of the examination, the student will give a 20 minute seminar highlighting the research proposal. The questions asked by the examiners will be based primarily on the thesis proposal but will also involve related areas of civil engineering and other scientific disciplines relevant to the proposal.

4. **Examining Committee.** A separate committee will be struck for each student. It will consist of the student's supervisor, two "research experts" described below, and the Graduate Studies Coordinator, who will act as chair of the examination. A research expert is an individual who is well versed in the research area of the thesis proposal. (Ordinarily, a research expert would be a member of this department; however, the supervisor, in consultation with the Graduate Studies Coordinator, may decide that someone from another department in the university or from industry is more appropriate.)

Students will be informed of the composition of their Examination Committee at least one month before the examination, and will have the right to request to the Head of Department that any voting member of the Committee be replaced if, in the student's view, instances of prior personal conflict might compromise the examiners objectivity.

5. **Arrangements.** The student's supervisor is ultimately responsible for the arrangements for this examination. **Copies of both the Comprehensive Examination Request Form (Appendix A) and the proposal itself must be given to the Graduate Studies Coordinator and each of the examining committee members.** The Graduate Studies Coordinator must be notified of the date of examination at least two weeks before it is held.
6. **Results.** The examining committee should judge the candidate's performance as one of the categories listed below based on whether the candidate has an effective grasp of his/her main and related areas of study, and the ability to handle facts, new ideas, and concepts at the Ph.D. level. The two examiners and the supervisor will each have one vote. (In the case of co-supervision of the candidate, only one vote will be recorded for the supervision team.)

Decisions are announced by the Chairperson shortly after completion of the comprehensive examination process. The Chairperson will present the report of the Examining Committee to the candidate and discuss any written comments with the candidate.

The categories will be used to describe the outcome of the examination:

- (a) **Pass.**
- (b) **Referred.** This category will be used when the committee has identified one or more deficiencies in the student's proposal or background preparation. The committee will prescribe a set of conditions for correcting the noted deficiencies. The supervisor must notify the Graduate Studies Coordinator, in writing, when all such stipulated conditions have been fulfilled.
- (c) **Fail.** A written report by the Chair is required in the event of a failure. The examiners may recommend either that the student retake the examination within six months or withdraw from the program.

Note: for the special case of a re-examination, either as a result of the recommendation of the examining committee, described above in (c), or as a consequence of the result of an appeal described in section 7, the outcome of the re-examination will be final (i.e. no additional re-examination will be allowed)

7. **Appeal Procedures:** The procedure for the Ph.D. candidate to appeal the composition or the decision of the examining committee is presented below.
- a. If a student wishes to appeal the outcome of the comprehensive examination on procedural and/or academic grounds, the appeal must be lodged formally with the Graduate Studies Coordinator, setting forth in writing the reasons why the student believes the academic decision is unjust. This should be done as early as possible after the decision is announced and, normally not more than ten working days thereafter.
 - b. If the matter has not been resolved by the Graduate Studies Coordinator, and the student continues to believe that the academic decision is unjust, a formal request may be lodged for a review of the formal appeal by an Appeals Committee established by the Graduate Studies Coordinator. The Appeal Committee should exclude the initial examiners on the student's comprehensive examination committee.
 - c. After reviewing the appeal, including interviewing the student and the members of the examination committee, the Appeals Committee may find that:

- (i) The decision is academically and procedurally sound.
 - (ii) An error in procedure or academic judgment has been made. In this case the Appeals Committee will proceed to rectify the error. This may include passing the student or allowing the student to repeat all or part of the Comprehensive examination.

- d. If the Head and Appeals Committee find that the decision of the Comprehensive Examination Committee was academically and procedurally sound, and recommend to the appropriate Division of the School of Graduate Studies and Research that the student be required to withdraw, the student may appeal the recommendation for withdrawal by following the procedures outlined in Section 8.9(c) of the Graduate School Calendar.

- e. Should the student not agree with the decisions rendered in sections 7 (a) to (d), the student may formally appeal outside the departmental framework based on established University Grievance and Appeal Procedures and the Senate Statement on Grievance, Discipline and Related Matters.

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