

Department of Chemical Engineering

(effective January 1, 2001)

Revised September, 2006

DOCTOR OF PHILOSOPHY (Ph.D.)

Supervision

Doctoral students at McMaster University are each assigned a supervisory committee as soon as possible (in any case not later than 6 months following their initial registration).

This consists of the research supervisor(s), one other professor from the department, and a professor from outside the department. Supervisory committee meetings will be scheduled by the Departmental Graduate Secretary.

The Supervisory Committee will meet with the candidate at least once a year. The School of Graduate Studies requires students to complete a progress report form, which becomes part of the overall Ph.D. supervisory committee report. This page is initialed by the supervisory committee members. This form must be submitted with the technical report that is circulated to the supervisory committee, **one week in advance** of the supervisory committee meeting.

The duties of the Supervisory Committee will be as follows:

- to assist in planning and to approve the candidate's program of courses and research;
- to approve the thesis research proposal;
- to decide, within departmental regulations, on the timing of the Comprehensive Examination and, where applicable, of the language and other examinations;
- to act as members of the Comprehensive Examining Committee;
- to maintain knowledge of the candidate's research activities and progress;
- to give advice on research;
- to provide the student with regular appraisals of progress or lack thereof;
- to perform such other duties as may be required by the Department and report annually;
- to initiate appropriate action if the candidate's progress is unsatisfactory;
- to decide when the candidate is permitted to write the thesis, its form and provide advice as needed;
- to act as internal examiners for the thesis, and
- to act as members of the examination committee for the final oral defence when appointed

Students should feel free to consult with any of their supervisory committee members at any time and to have a meeting of the committee called if necessary.

Comprehensive Examination Procedure

Purpose

The comprehensive examination will test the breadth of knowledge and the ability to synthesize and integrate ideas from within and peripheral to the candidate's research area. Successful completion of the comprehensive examination is a requirement for the candidate to continue in the Ph.D. program. The candidate's level of achievement in this examination may determine academic background deficiencies that the candidate will have to address through course work or other means as determined by the committee.

Timing

The comprehensive examination will normally take place between 6 and 18 months after the candidate initially registers in the Ph.D. program. If an examination date has not been set within the 18 month period, then the Department Chair will set the date of the examination.

The comprehensive examination will normally be held during periods when graduate courses are not in session, though they may be scheduled at other times depending on the availability of examiners. It is the responsibility of the Supervisory Committee to recommend and notify the department and the candidate in writing, within a period of 4 to 16 months from initial registration in the Ph.D. program, that a candidate will take the examination. **Upon receipt of the recommendation, the Department Chair will appoint a Chair for the Examining Committee who shall determine the examination date.**

The Examining Committee will determine the research proposal topic and the Committee Chair will communicate the examination date, research topic, examination instructions and scope of the general oral questioning, in writing, to the student 28 days before the oral examination date. Five copies of the proposal must be submitted 7 days before the oral examination date.

Structure of the Examining Committee

The Chair of the Examining Committee for the candidate will be appointed by the Department Chair and in no case will be the research supervisor(s). The Chair of the Examining committee has a vote and is normally expected to participate in the examination. The Examining Committee will consist of the members of the Supervisory Committee and at least one additional faculty member, normally the Chair of the Examining Committee. The Committee Chair, in consultation with the Supervisory Committee, may appoint an additional member of the Examining Committee from within the Department.

Format of the Examination

The Comprehensive Examination will consist of a written part and an oral part. It is the responsibility of the Chair of the Examining Committee to call a meeting of the Committee at least five weeks in advance of the examination date to examine the candidate's records and background to determine an appropriate research topic and scope of background examination.

The candidate will be required to submit a proposal, **up to 25 pages in length**, on a research topic related to, but not the same as, the Ph.D. research topic. The candidate will be required to prepare this report, within 21 days of receiving the proposal topic, ***without aid from any other individual.***

The written report must include:

- 1) a critical survey of the directly related literature in the field,
- 2) an explanation of the relevant background in terms of chemical engineering principles, and
- 3) a research proposal related to the topic.

Five copies of the report must be submitted to the Department at least one week prior to the date of the oral examination. ***Late submissions without an explanation acceptable to the Examining Committee, will be deemed to be a failure and the candidate will be asked to withdraw from the program.***

The oral examination will be conducted in two parts. In the first part, the candidate will be required to make a brief presentation of the report (no more than 15 minutes), followed by questions directly related to the report. The second part of the oral examination will probe the candidate's general comprehension of the research field and peripheral areas. The oral examination will normally require two hours to complete, but in no case will continue for more than three hours.

If a charge of academic dishonesty is made arising from either the written or oral parts of the examination, then the comprehensive examination will be stopped until the academic dishonesty charge is dealt with.

Comprehensive Examination Result

The candidate's overall performance will be judged as: Pass with Distinction, Pass, or Fail, based on the assessment of the individual written and oral portions of the examination. The Examining Committee report may make recommendations with regard to remedial actions necessary to overcome deficiencies in the candidate's background. A candidate who fails the Comprehensive Examination will be given a second opportunity for a retake on the portions of the comprehensive examination deemed to have been failed. **There is no opportunity for a third attempt.**

The Chair of the Examining Committee will communicate the results of the examination, in writing, to the Department Chair who will communicate the result, in writing, to the candidate.

The Comprehensive Examination may be rescheduled due to documented medical or other emergencies that preclude the originally chosen date. The Examining Committee may recommend a retake of the examination only in unusual situations, which must be documented, and this recommendation communicated in writing to the Department Chair who will take appropriate actions.

Research Proposal to the Supervisory Committee

No later than six months after a successful completion of the Comprehensive Examination, the Ph.D. candidate is **required** to present a detailed research proposal to the supervisory committee. The proposal will document the research objectives, relevant background literature, required experimental, analytical or computational approaches, and projected timetable for completion of the steps necessary in the research. The candidate will be asked to make an oral presentation of the proposal for approximately 30 minutes, and the proposal will normally be about 25 pages in length. The candidate should identify potential problems and approaches that will be undertaken to resolve difficulties in the proposed research program. The Supervisory Committee must consider the research proposal to be satisfactory for the candidate to be permitted to continue in the PhD program.