

# OTTAWA-CARLETON INSTITUTE OF BIOLOGY GUIDE FOR GRADUATE STUDENTS AT CARLETON UNIVERSITY

Revised August 3, 2010

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This guide is meant to answer the most frequently asked questions about the M.Sc. and Ph.D. Programs within the Ottawa Carleton Institute of Biology (the OCIB).

It is divided into chronological sections from first registration to final submission of the thesis copies to the Faculty of Graduate Studies and Research (FGSR)

## 1. Registration and Funding

Students are admitted to the Institute after:

1. They have met the academic requirements as set out in the [Graduate Calendar](#)
2. A Supervisor has indicated acceptance
3. Funding at the current minimum has been arranged

Note that the academic requirements of the OCIB are slightly higher than those listed in the Calendar as General Requirements for the University. The OCIB requires a B<sup>+</sup> Grade Point Average (GPA) overall. Even with this standing, competition for available funding may mean that a B<sup>+</sup> student is not admitted. Funding is normally made up from three sources: a Full or Half Teaching Assistantship (TA) (paid for demonstrating undergraduate laboratories; a full TA involves 10 hours of work per week in the Fall and Winter terms); a Dean's Scholarship; and a Research Assistantship (RA) paid from the Supervisor's Research Grants. External Scholarship holders (for example NSERC or OGS) will be awarded the Dean's Scholarship and may hold a full TA, but normally do not hold an RA.

Students given TA support are subject to the collective agreement with CUPE 4600 - Unit 1, and as such are given priority for funding as follows:

Ph.D. students	10 terms over 5 consecutive calendar years
M.Sc. students	4 terms over 2 consecutive calendar years

At the time of registration a "Statement of Standing on Admission" is completed by the Associate Chair for Graduate Studies for the Department. This form states the degree requirements. A Ph.D. involves 10 credits (or 15 without an M.Sc.); an M.Sc. involves 5 credits.

**Refer to the Graduate Calendar for information on registration procedures and deadlines.**

## 2. Advisory Committee

As soon as possible and no later than 4 months after registration, an Advisory Committee should be appointed to guide the candidate's research throughout the program and to meet formally with the candidate at least once yearly.

The Advisory Committee consists of at least three members, including the candidate's supervisor (and any co-supervisor) and one or two advisors normally chosen in consultation with the student. Generally one advisor will be from the other campus. Advisory Committee membership must be noted on the "[Advisory Committee Report and Appraisal](#)" form that is filled out by the supervisor at the first and all subsequent committee meetings. The supervisor and student will consult with the Advisory Committee on course selections. The "[Advisory Committee Report and Appraisal](#)" form must be completed at all committee meetings and is placed in the student's file. The "[Advisory Committee Report and Appraisal](#)" is an essential record of your progress throughout your degree, including advice from your committee. It is the student's responsibility to arrange his/her Advisory Committee Meetings.

### **3. Degree Requirements**

#### **3.1. M.Sc. program**

The M.Sc. degree will be conferred upon a candidate who has fulfilled the following requirements:

- 1) Completion of the graduate courses specified by the student's advisory committee: normally 2 half (i.e. one term) courses, but the student's advisory committee may also direct the student to take or to audit additional courses. The passing grade for all required courses is 70% or equivalent and the student is not allowed a supplemental examination.
- 2) Normally completion of at least two terms as a full-time student resident at one of the two universities. Programs for part-time students may be arranged.
- 3) Presentation of one departmental seminar on the candidate's thesis research.
- 4) Completion of a thesis (BIOL 5909 or BIOL 6909) incorporating the results of original research carried out under the direct supervision of an approved Faculty member.
- 5) Successful oral defence of the thesis before an examination board of at least three faculty members, normally drawn from both universities.

#### **3.2. Requirements for the Ph.D. program**

The Ph.D. degree will be conferred upon a candidate who has fulfilled the following requirements:

- 1) Completion of the graduate courses specified by the advisory committee: normally 2 half courses (i.e. one term courses). The passing grade for all required courses is 70% and the student is not allowed a supplemental examination. The student's advisory committee may also direct the student to take or to audit additional courses.
- 2) Scheduling, and passing, of an [oral qualifying examination](#) normally within 12 months of entry into the program with the examination normally taking place within 18 months of entry into the program. This examination will cover the candidate's area of research and related topics. Its format will be established by the departmental graduate committee and approved by the OCIB Committee. The examination committee will generally be composed of faculty members of both universities.
- 3) Presentation of at least one public seminar on the candidate's thesis research.

4) A thesis (BIOL 6909) incorporating the results of original research carried out under the direct supervision of an approved Faculty member.

5) Normally, the completion of at least four terms as a full-time student resident at one of the two universities (or six terms if admitted without an M.Sc.). Under exceptional conditions programs may be arranged for part-time students.

6) Successful oral defense of the thesis before an examination board of at least five faculty members, with representation from both universities, and including an external examiner from outside the two universities who is an authority on the thesis research area.

### **3.3. Transfer from M.Sc. to Ph.D.**

A student already registered in the M.Sc. program may be permitted to transfer to the Ph.D. program following a recommendation by the M.Sc. Advisory Committee and successful completion (grade of "pass with distinction" or "satisfactory") of the [Qualifying Examination](#) required of Ph.D. candidates. A student who fails the Qualifying Examination will be allowed to repeat the exam within six months. Normally such transfers will be initiated by a recommendation from the M.Sc. Advisory Committee within eight to twelve months after first registration for the M.Sc. Students who transfer to the Ph.D. program must complete 4 half (one-term) courses rather than the usual 2 half courses normally required for the Ph.D.

### **3.4. Residency Regulations**

M.Sc. - Normally completion of at least 2 sessions as a full-time student resident at one of the two universities.

Ph.D. - Normally completion of at least 4 sessions as a full-time student resident at one of the two universities. Students involved in lengthy field work may require a letter from the Director confirming that absence from the campus is essential to their thesis.

Note: **Do not let** your registration at the University lapse even for 1 term. Always maintain at least part-time registration! If your registration lapses you will be considered to have withdrawn and you will have to re-apply for admission.

### **3.5. Time Limits for Program Completion**

These limits are published in the General Regulations section of the Graduate Calendar. If you go over these limits you will not be able to register until you have obtained an extension. An extension may be granted provided a letter from the supervisor, outlining the reasons for the program delay and plans for completing the thesis and the defence, is submitted to the Associate Chair for Graduate Studies in your Department. This letter and a recommendation from the Associate Chair are reviewed by FGPA. Extensions are not granted indefinitely.

### **3.6. The Seminar Requirement**

A seminar must be presented before the thesis defence. The seminar should be arranged by the student and supervisor well in advance of the thesis defence, and the date, time and venue should be given to the Graduate Administrator so that he/she can prepare the announcement for the whole department.

## **4. Ph.D. Comprehensive Examination**

All students enrolled in the Ph.D. program are required to complete successfully an [Oral Qualifying Examination](#). Normally the candidate will take the exam within the first 12 months of registration.

Qualifying examination regulations may be obtained from the Graduate Administrator in the Department, or from FGPA.

At the first meeting of the Advisory Committee the student's research project and Qualifying Exam will be discussed. This discussion is intended to help prepare students for the exam. Based on these discussions the student prepares a Ph.D. Research Proposal.

### **4.1. The Research Proposal:**

Approximately 3,000 words long will be typewritten, double-spaced, and include the following sections:

- a) Title page which also gives the composition of the Advisory Committee and the date of submission.
- b) An introduction giving the scientific basis for the study, a review of the current literature, and presenting the hypothesis(es) that form the basis for the research.
- c) A statement of the scientific value of this research and the rationale for performing it.

- d) The specific objective(s) of the study and the underlying logic.
- e) The proposed methodology including a statement of how the data will be analyzed.
- f) A projected timetable for the research.
- g) Research completed to date (this section is optional).
- h) References.

#### **4.2. Purpose:**

The examination has two main goals:

- a) By reference to the thesis proposal, to assess the candidate's abilities to produce new knowledge in the chosen topic of research, and
- b) To assess the candidate's abilities and preparation both in the research specialty and in broader topics which logically support and provide conceptual perspective for the research proposal. The examination is NOT intended to rule on the acceptability of the research project.

#### **4.3. Examining Board:**

Will be composed of 5 members who will be full-time faculty or adjunct professors or members of the candidate's Advisory Committee. In addition to the chair, the Board will normally comprise the supervisor, 1 member of the candidate's Advisory Committee drawn from each campus, and 1 other Member of the Institute.

#### **4.4. Scheduling:**

The student and supervisor(s) consult the Advisory Committee and agree upon a date, time and place suitable to all. The student and supervisor(s) then recruit two additional members of the Institute; one as an examiner and one to chair the exam. **At least four weeks before the scheduled date**, the student notifies the Graduate Administrator of the agreed upon date, time and place, and of the names of the board members. One copy of the Research Proposal for every board member (usually 5) plus one copy for the Faculty of Graduate and Postdoctoral Affairs are submitted to the Graduate Administrator at this time.

## 4.5. Format of Examination

- a) The candidate will introduce the proposed research with a brief presentation (15 minutes) based on the research proposal and focusing on the significance and the logic of the investigation.
- b) The individual examiners will conduct a series of dialogues with the candidate which, taken together, will constitute an organized assessment with equal emphasis on the two main goals of the examination (see **Purpose**, above).

The examination normally will last no more than 3 hours.

## 4.6. The chair's responsibilities include:

- a) Collecting the student's file from the Department office.
- b) Conducting the examination within these guidelines.
- c) Ensuring completion of requirements of the department, the Institute, and FGPA.
- d) Ensuring the thoroughness of the assessment of the candidate according to the **Purpose** of the examination as set out above.
- e) Providing an appropriate written report of the examination for the candidate's file, using the forms provided.

In the best judgement of the chair, these assessments are to be:

- i) Performed in a strictly professional manner.
- ii) Performed at an intellectual level which is appropriate to a Ph.D. program.

The chair may also participate as an examiner.

It is within the mandate of the chair to:

- i) Recess or postpone and reconvene the examination for purposes of attaining an appropriate level of questioning;
- ii) Intervene in the questioning if needed to maintain the appropriate level or conduct of

the examination;

iii) Intervene in the discussion and assessment by examiners if the vote or consensus is not, in the chair's opinion, accurately reflecting the results of the questioning during the examination;

iv) Deny the privilege of voting or forming consensus to any member of the board who was absent from any part of the examination considered significant by the chair;

v) Recess or postpone and reconvene the examination if conditions under which it must be conducted are inappropriate;

vi) Report in writing to the Associate Chair any unusual conditions or actions taken in the conduct of the examination.

## 4.7. Performance

A candidate's performance on the qualifying examination will be placed in one of three categories:

a) Pass with Distinction: the candidate has demonstrated a highly advanced level of understanding of the relevant field of research and has a broad conceptual perspective that would be expected of a professional scientist working in the field.

b) Satisfactory: the candidate has fulfilled the qualifying requirements of the Ph.D. program, as described under **Purpose** above, to the satisfaction of the examining committee. The committee may recommend additional coursework or literature research to improve the candidate's knowledge in specific areas relevant to the research proposal.

c) Unsatisfactory: the candidate's performance was unacceptable and he/she must resign from the Ph.D. program. If the candidate has never had a re-examination (see below), the candidate may request one to be taken within 6 months of the first examination. If no re-examination is requested within 30 days of the first examination or if the re-examination is failed, the candidate must resign from the Ph.D. program.

Under exceptional circumstances the examining committee may specify a **Deferred judgement** with major conditions; this means that the board has identified important flaws in the candidate's qualifications and will recommend corrective measures. Assignments and their time deadlines will be transmitted to the candidate in writing and must be met before the assessments of the qualifying exam can be completed. Normally, the same examining board will judge the candidate's success in meeting these conditions and in order to make that judgement,

may ask for a re-examination within 6 months of the first examination. If the re-examination is failed, the candidate must resign from the Ph.D. program.

## 5. M.Sc. and Ph.D. Thesis Defences

Pay careful attention to the section in the Graduate Calendar entitled "**Thesis Requirements**", especially to the convocation deadlines and the thesis specifications. M.Sc. thesis abstracts are limited to 150 words; Ph.D. abstracts to 350 words. The Institute allows theses to be organized in the form of chapters that represent published or publishable papers; however these chapters should be preceded by an introductory overview and literature review of the topic, and followed by a concluding chapter. An effort should also be made to avoid unnecessary repetition that may result from using the publishable paper format. References should be contained in one section at the end of the thesis. Appendices are acceptable.

**Six** unbound copies of the thesis are required.

Notify the supervisor at least two weeks in advance of the date that you expect to finish writing the last draft of the thesis. At this time the student and supervisor should consult with the advisory committee and agree to a suitable date, time and place for the thesis defence. **Allow at least six weeks preparation time (see the University regulations below).**

For **Ph.D.** defences, a suitable external examiner should be identified early in the preparations for the defence. The external examiner should be contacted informally by the supervisor at this time and asked to participate in the defence. The external examiner is the key person on the defence committee and should be chosen for his/her expertise and impartiality. It is wise to have another examiner in mind as a replacement should this be necessary. The Dean of FGPA has certain budgetary constraints on supporting external examiner's travel and accommodation.

**At least four weeks (for M.Sc. theses), or six weeks (for Ph.D. theses)** before the agreed upon defence date the Supervisor or student must submit the 6 pre-defence thesis copies and a letter to the Graduate Administrator indicating:

- i) the name of the student and the thesis title.
- ii) the proposed date, time and place of the defence.
- iii) the Advisory Committee members, who have agreed to the above.

**and for M.Sc. defences:**

-i) names of 2 additional members of the Institute, one to act as an examiner and one as chair of the defence, who have not been part of the Advisory Committee, and who have agreed to the defence date and time.

**for Ph.D. defences:**

- i) the name of the suggested external examiner, address, TEL number and FAX number. The external examiner should already have been contacted informally and should have agreed to the defence date and time.
- ii) name of a member of the University, outside of the Institute, who has agreed to the defence date and time.

The following is a brief guide to examining committee structures:

	<a href="#">MSc Defence</a>	<a href="#">PhD Defence</a>	<a href="#">Qualifying Exam</a>
Supervisor	X	X	X
Advisor (Carleton)	X	X	X
Advisor (U. of Ottawa)	X	X	X
Member of the Institute	X		x
Member of the University		X	
External Examiner		x	
Chair	x	x	X

**At least four weeks (for M.Sc. theses), or six weeks (for Ph.D. theses),** before the agreed upon defence date the student must submit the [list of committee members, the date, time and location of the defence, and 6 copies of the thesis](#) to the Graduate Administrator. The Graduate Administrator will transmit the information concerning the defence and the thesis copies to each committee member and to FGPA. The defence will be formally announced at least two weeks in advance of the M.Sc. defence, and four weeks in advance of the Ph.D. defence. These times are University regulations, which cannot be waived.

The thesis defence is conducted according to FGPA guidelines and these should be consulted. In brief, the Chair will ask the student to withdraw while the members of the examining committee review the report of the External Examiner (for Ph.D. defences) and discuss the order and the nature of the questioning. The student will then be asked to present a brief (15 minute) overview of the major findings of the research. The chairman will then instruct the committee to proceed with the examination.

## **5.1. Performance**

### **5.1.1.M.Sc. Thesis Defence**

The examining committee assesses both the acceptability of the thesis and the defence.

The categories for the thesis are:

- a) accepted
- b) acceptable after minor revisions
- c) acceptable after major modifications
- d) rejected

If category c) is indicated, the examining committee or a subcommittee as designated by the Chair must assess the modifications made to the thesis before it can be submitted to FGPA.

A thesis grade is assigned one of the following categories:

- a) Pass with Distinction
- b) Satisfactory
- c) Unsatisfactory.

The oral defence is assessed as follows, for categories 3 or 4 only:

- a) Satisfactory
- b) Unsatisfactory.

### **5.1.2.Ph.D. Thesis Defence**

The examining committee assesses both the acceptability of the thesis and the defence.

The categories for the thesis are:

- a) accepted
- b) acceptable after minor revisions
- c) acceptable after major modifications
- d) rejected

If category c) is indicated, the examining committee or a subcommittee as designated by the Chair must assess the modifications made to the thesis before it can be submitted to FGPA.

A thesis grade is assigned under one of the following categories:

- a) Satisfactory
- b) Unsatisfactory

The oral defence is assessed as follows, for categories 3 and 4 only:

- a) Satisfactory
- b) Unsatisfactory

Remember to have the External Examiner sign the original copy of the thesis acceptance page before he/she leaves the University.

Recommendations for Senate and University Medals should be made at the time of the defence, as these recommendations require supporting letters from the Chair of the Examining Board and the Member of the Institute (for M.Sc. defences), or the External Examiner (for Ph.D. defences).

## **5.2. Submission of the Final Thesis Copies**

The External Examiner (for Ph.D. Theses) must sign the original copy of the thesis acceptance page, so make sure this is done before his/her departure.

After corrections and modifications are made, **two unbound copies of the thesis** should be submitted to FGPA for binding. Obtain the required [checklists](#), [National Library](#), [microfilm](#), and [Licence to Carleton](#) forms from the Graduate Administrator so that he/she can sign them. The Graduate Administrator will do a quick check of the thesis copies to ensure that they comply with the FGPA regulations. Once this is complete, the student is to submit the paperwork to FGPA with the thesis copies. Additional copies will be bound at the student's expense and can be done through Graphic Services.

Consult the Academic Schedule section of the Calendar for specific deadlines for submission of the final thesis copies. These deadlines must be met to avoid an additional

term of registration in the program, and they also determine the date of the convocation for your graduation.

This guide is meant to answer the most frequently asked questions about the M.Sc. and Ph.D. Programs within the Institute of Biology. **It is not the final word on program regulations.** Students should consult the Graduate Calendar and FGPA if in doubt about specific program regulations.