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## LAKEHEAD UNIVERSITY DEPARTMENT OF BIOLOGY

### *STEP-BY-STEP GUIDE THROUGH THE BIOLOGY GRADUATE PROGRAM FOR POTENTIAL/CURRENT GRADUATE STUDENTS AND SUPERVISORS*

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**Note:** *This documents deals primarily with the responsibilities of the student. The ultimate completion of the degree is the student's responsibility. The Faculty of Graduate Studies reflects this by listing the various forms on the "Student" website. However, in some instances (e.g. final examination process), it is more appropriate that the supervisor completes the process with its attendant forms. As the one who has to graduate, ensure that all the required steps have been taken.*

#### **Application Process**

1. The applicant goes to the [Faculty of Graduate Studies](#) website and reviews the links under "Apply Now to Graduate Studies".
2. The applicant submits an electronic [Application Form](#) (*Graduate Studies Biology website "How to Apply"*) and arranges to have an **official transcript**, and **three letters of reference** sent to the Faculty of Graduate Studies office.
3. The applicant names potential supervisor(s) within the Department with whom they would like to study. Admission depends to a large degree on the suitability of the student for the project and the funding available to complete the project. It may be helpful to contact the potential supervisor and work with her/him towards admission.

**NOTE:** *This process is normally completed by the official university deadline of February 1<sup>st</sup> of each year for admission in May or September of that year. Late applications will be considered for admission in September or January, but may not be considered for university funding and scholarships.*

4. The COMPLETED applicant's file is supplemented by the tentative supervisor with a brief description of the project, starting date and sources of funding ([Graduate Form A – Motion to Admit](#)) and reviewed by core program members within seven (7) working days.
5. The Graduate Co-ordinator informs the Faculty of Graduate Studies office (by signed memo) of the Graduate Studies Advisory Committee's recommendation. The supervisor fills out a financial support form, based on which successful applicants are sent an official *Offer of Admission* by the Faculty of Graduate Studies office. The offer to enter into a specific term includes a commitment to provide a certain level of funding (i.e. whether a Graduate Teaching Assistantship is awarded by the university and what funding can be expected from other sources).
6. On receipt of an *Offer of Admission*, the student signs the offer and returns it to the Faculty of Graduate Studies office **by a specific deadline**. If the student is unable to register into

the specified term, he/she must contact the Faculty of Graduate Studies office to arrange for an *alternate Offer of Admission*.

7. The student registers on-line through the Office of the Registrar before the deadline dates for registration in any semester (IT IS YOUR RESPONSIBILITY TO CHECK SPECIFIC TIMES FOR REGISTRATION – between when the schedule is published on the internet and a specific date within each semester). Each student must maintain continuous registration in thesis placeholder Biology Master's Thesis Research/Writing 9901 (FA Fall semester in September, WA Winter semester in January and GA Spring/Summer semester in May). We are trying to simplify registration procedures, but it remains YOUR responsibility to be correctly registered.

**NOTE:** *If registration deadline is missed, then the student registers by hard copy and requires signatures from both the Instructor of the course and the Biology Graduate Studies Coordinator.*

- a) Courses to be taken will include: (1) Biology Master's Thesis Research/Writing 9901; (2) the required Biology Graduate Seminar 5010 (FA); and, (3) a minimum of two other one-semester graduate level courses recommended by the supervisor (and later approved by the Supervisory Committee), so that studies may begin immediately following registration. Courses can be added after a Supervisory Committee has been established. You may be required to register manually in cases of tutorial/seminar courses developed by your supervisor/committee, and may have to ensure (through your supervisor and the Biology Administrative Assistant) that the appropriate courses were established in the Registrar's official course timetable.
- b) The student picks up the **original, signed** *Financial Support Form* from the Faculty of Graduate Studies office and brings it to the Accounts office.
- c) The student sees appropriate personnel in the Accounts office. Their staff will arrange a method of fee and salary payment.
- d) The student goes to the Human Resources office to get "signed on" as an employee, i.e., to receive their Graduate Teaching Assistantship and to sign tax forms.
- e) The student makes arrangements with the Laboratory and Biosafety Specialist in the Human Resources Office (Tiffany Moore, 343-8806, tiffany.moore@lakeheadu.ca), to receive New Hire Orientation. Specific safety training requirements will be discussed at that time - WHMIS is mandatory, but other training modules may be required. During the New Hire Orientation, the student will receive a New Employee Orientation Checklist that is to be filled out in consultation with their supervisor.

**NOTE:** *Regular full-time registration is in September and is usually for the period of two semesters. If registering for the first time at the beginning of any other term (e.g. May or January), the student should enquire at the Office of the Registrar about the possible need to re-register in September.*

### **Administrative Steps for Admitted and Registered Students**

8. During the first semester of study, the supervisor and student establish a Supervisory Committee consisting of three members (including the supervisor, at least one member must be a full-time member of the Biology Department) and call the first meeting, at which appropriate courses are confirmed/selected and thesis project is discussed.
9. The student prepares and presents a 45 minute public thesis proposal seminar on their research topic including: historical background/previous data, societal context of the project, hypotheses to be tested, how data will be collected and analysed, models to be developed, and any progress to date (at a time agreed upon by the Supervisory Committee, but not later than six (6) months into the program). The seminar is followed by a Supervisory Committee meeting. At this meeting the Supervisory Committee is formally confirmed ([Graduate Form C – Graduate Student Supervisory Committee](#)), and proposed course selections approved ([Graduate Form D – Courses Taken in Partial Fulfillment](#)), project expectations and timeline are confirmed or adjusted.

**NOTE:** Each student is expected to communicate regularly about program progress with the supervisor. Ideally, this should be in person, or at least by e-mail or telephone. The advisory committee members, or ultimately the graduate coordinator may be approached in cases of difficulties of any kind. Failure to communicate or resolve problems in a timely fashion may result in time extension not being awarded (see Additional Forms and Procedures at the end of this document).

10. Research and thesis preparation continues. A second Supervisory Committee meeting takes place before the end of the third semester of study, during which progress on the following is reviewed and documented by the supervisor: (1) quality of the proposal, (2) is there ongoing progress in writing the thesis Introduction, (3) is the project being given full time attention, (4) is there adequate communication with the supervisor, data summaries submitted, etc., (5) ongoing literature searching and awareness, (6) positive interaction with research group and meeting attendance, (7) attendance at departmental seminars. The Supervisory Committee may elect to assign an actual grade to each of the categories (70-100% good progress, 50-69% inadequate - warning, <50% fail. At the discretion of the Graduate Studies Advisory Committee, the student may be asked to withdraw from the program if failing grades are received in the thesis preparation course (Biology 9901).
11. The student registers on-line for **second year** in the M.Sc. program (normally due in mid-September).
12. Approximately 6 months before the anticipated graduation date, the Faculty of Graduate Studies office sends a reminder with a timeline to the department. This timeline is distributed to all graduate students and their supervisors by the Graduate Co-ordinator.
13. The student submits an [Application to Graduate](#) form (Enrolment Services website), no later than three (3) months prior to the anticipated graduation date.
14. The External Examiner is contacted informally by the supervisor (not your responsibility as a student, but consult with your supervisor on this issue) 2-3 months prior to the end of the fifth semester of study. The External Examiner's curriculum vitae is made available for

evaluation and departmental approval (within 7 working days). The External Examiner should have an academic standing at PhD level, preferably with thesis review experience. Optionally, the External Examiner may be selected from among LOCAL (Lakehead University) candidates, but NOT from among core Biology M.Sc. graduate program faculty. Although the Graduate Studies Faculty website states that a [Proposed Examiner](#) form is submitted by the student, this is more appropriately done by the supervisor.

15. In close consultation with the supervisor, student completes writing of the thesis (including thorough editing by the supervisor), SIX WEEKS before the end of the sixth semester of study. Student submits (1) “examination-ready” hard copy or electronic pdf file (check with External Examiner for their preference) of the thesis to the Graduate Co-ordinator and (2) signed [Thesis Ready for Review by Examiner](#) form approving the thesis for distribution to examiners.

The Graduate Co-ordinator submits the thesis, requisite forms and instructions to the External Examiner. At this point communication ceases between the External Examiner and the student or supervisor. The student also gives the thesis to internal examiners (in hard copy or electronically – inquire early regarding examiners’ preference).

**Note:** Give yourself enough time if hard copies need to be sent to the External Examiner! The confidential [Examiner's Report on Thesis](#) form must be on hand during the oral defense (see #16 below).

16. During the last two weeks of the sixth semester of study, the student performs a second public seminar (Thesis Defense) on the results of the Master’s research work (normally of about 45 minutes duration, followed by questions from the audience).
17. The Thesis Defense is chaired by the supervisor and constitutes the final examination. Comments of the External and Internal Examiners are taken into consideration at this time (NOT PRIOR TO THE DEFENSE!) and a category (Pass, Pass with minor revisions, Pass with major revisions or Fail) is assigned to the thesis on a form provided by the supervisor. (Where LOCAL External Examiners are used, they are to be PRESENT at the final defense). If the External Examiner’s report is not received three working days before the scheduled defense date, thesis examination has to be postponed to a later time. Following the examination, appropriate actions are taken by the student to prepare the FINAL version of the thesis for submission to the Faculty of Graduate Studies office, or further review by the committee. Departmental Administrative Assistant adds the Biology Department Top Sheet. The Biology top sheet should provide either printed names or printed names and signatures of all the examining committee members – not a mix of both!)
18. Working with the Supervisor, final thesis submission (4 printed copies, as well as an exact electronic copy of the final thesis in pdf format) is made to the Faculty of Graduate Studies office, accompanied by appropriate Faculty of Graduate Studies forms ([Thesis Ready for Final Submission, Recommendation of Thesis, Master’s Thesis Top Sheet, Binding of Thesis](#); Graduate Programs website) and the signed Biology Department Top Sheet. This step must be completed before the registration deadline for the seventh semester of study (see Item 24 below).

19. The student signs two (s) Library Authorization forms ([License to the University and Non-Exclusive License to Reproduce Thesis](#); Graduate Programs website) and submits them to the Faculty of Graduate Studies office.
20. The student obtains a Purchase Requisition via Administrative Assistant.  
**Note:** The Department pays for binding of 2 copies only (Library and Department). Binding of any extra copies is paid for by the student or supervisor.
21. Electronic copies of the thesis are sent to the supervisor and Graduate Co-ordinator. The Graduate Co-ordinator will forward it to the Faculty of Graduate Studies office.
22. The student completes an [Exit Survey](#) and submits it to the Faculty of Graduate Studies office. The Faculty of Graduate Studies office sends a copy to the Department.
23. The Graduate Studies Faculty brings the student's name forward to Senate for approval of graduation. The student's degree is conferred by Senate.

#### **Administrative Steps for Students Exceeding the Six (6) Semester Registration Limit**

**NOTE: You will be personally responsible for tuition fees for each term exceeding the 6 semester limit.**

24. In the case that final thesis is NOT LIKELY to be submitted to Graduate Studies Faculty by the 7<sup>th</sup> semester registration deadline, the student MUST:
  - A) Request a time extension,
  - B) Register for the additional semester, and
  - C) Pay the required one semester fees (if applicable).

Failure to communicate or resolve problems in a timely fashion may result in students being unable to complete their program requirements within the program time limits (6 semesters), after which the Department may be unwilling to award a time extension. The Department grants the first time extension, but the Faculty of Graduate Studies Council grants the second and final extensions, upon the recommendation of the Department.

[Time Extension Request Form](#) and [Leave of Absence Request Form](#) are downloaded from the Graduate Studies website. Prior to the end of the sixth semester of study (the end of 2<sup>nd</sup> year), the student requests supervisor to complete form and submit the required form to Graduate Studies Coordinator for forwarding to the Faculty of Graduate Studies office. Once the Graduate Studies Coordinator signs the form, it is forwarded to the Faculty of Graduate Studies office.

**General points regarding thesis preparation:**

1. The thesis audience is your examiners and scientific community, write in a style as close to a scientific paper as possible. There is no need to explain what DNA is or a mammal.
2. Use short sentences and declarative style - the thesis should be about 60-80 pages long (100 pages maximum for multi-section theses).
3. In the Introduction, explain early on what your goals are (i.e. why you are introducing this particular information).
4. Organize your results logically, and present Tables and Figures in the order in which they
5. are brought up in the text (either within the body or at the end of the thesis).
6. In the discussion, synthesize common points with reference to YOUR Figures and Tables, and information you gleaned from published literature.
7. Use consistent reference format and adhere to normal conventions used in scientific writing.

**Table 1. M.Sc. thesis progress and performance evaluation.**

	70-100%	50-70%	<50%	Minimal Expectations
	Pass	Warning	Fail	
Proposal presentation quality				Thorough literature review and research plan, able to answer questions; 45 min
Full time attention to project				Minimum 8 hours/day, full time effort
Notebook and periodic summaries of acquired data				Legible, numbered pages, indexed summaries
Communication with supervisor				Self-initiated as frequently as agreed
Ongoing literature searching and awareness				Monthly, formatted bibliography, brought up in discussions
Attendance and contribution to group meetings				Nearly all meetings, speaking up, asking questions
Attendance at departmental seminars				Nearly all, asking questions
Interaction with colleagues				Positive, respectful, communicative
Draft thesis preparation				Work on Introduction, Materials and Methods
Overall performance grade				