Department of Mathematics
Graduate Handbook

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1 Introduction

All graduate students are bound by Academic regulations and University policies, which can be found in the current graduate calendar at http://www.brocku.ca/webcal/current/graduate/acad.html.

Degree requirements for the M.Sc. degree are spelled out in the Mathematics section of the current graduate calendar.

In addition to these, graduate students in Mathematics and Statistics are subject to departmental rules and regulations outlined below.

2 Duration and residency

Full-time candidates must complete all degree requirements within three years from the date of first registration.

Part-time candidates must complete all degree requirements within five years from the date of first registration.

The normal duration of the M.Sc. program is 24 months. However, completion in 12 months is possible in the Statistics concentration.

A part-time graduate student may register for no more than two half-credit courses (1 credit) in each academic term. Permission to change status from full-time to part-time, or vice versa, must be sought from the Department of Mathematics and approved by the Graduate Program Director and the Office of Graduate Studies. Students must complete a Request to Change Status form found at http://www.brocku.ca/graduate-studies/current-students/student-forms.

3 Courses

A list of graduate courses can be found in sec. 10 of the graduate calendar. Currently offered courses can be found in the current graduate timetable. Links to currently offered courses and course descriptions can be found at the web page of the graduate program at http://www.brocku.ca/mathematics/gradprog.

Students are requested to discuss course selection with their advisor prior to registration. Final registration approval will be issued by the Graduate Program Director in consultation with the advisor.
4 Supervisory committees

(a) Upon acceptance to the program, each student will be assigned a Supervisor.

(b) By default, all graduate students are initially admitted to the project stream. Students may switch to the thesis stream at any time, subject to approval of the Supervisor and the Graduate Program Director.

(c) For each student in the project stream, the supervisor in consultation with the student will propose the supervisory committee composition, which must comprise a minimum of two members, the supervisor and another faculty member.

(d) For each student in the thesis stream, the supervisor in consultation with the student will propose the supervisory committee composition, which must comprise a minimum of three members, the supervisor and another two faculty members.

(e) The names of members of the committee must be submitted to the Graduate Program Director for approval at the time of the first student progress report.

(f) If either the graduate student or supervisor wishes to initiate a change in supervisor the request must be presented in writing, with explanation, to the Graduate Program Director, and approved by the Faculty Dean and the Dean of Graduate Studies.

5 Progress reports

The progress of all students will be reviewed at least twice yearly by the Supervisory Committee, normally in September and in January. Additional reviews may be conducted at the request of the student, member(s) of the Committee, or the Graduate Program Director.

The Supervisory Committee shall review:

(i) program course and ancillary requirements

(ii) performance in courses
(ii) progress in research (if applicable)

Recommendations will be made to the Graduate Program Director in writing, using the prescribed form given in the Appendix. Three possible outcomes of the progress review are possible: “satisfactory”, “unsatisfactory” and “needs monitoring”.

If the student’s progress is unsatisfactory, financial support may be reduced or terminated.

If the Supervisory Committee determines that the student needs monitoring, additional progress review(s) shall be conducted at times determined by the Committee.

6 Graduate research proposal

Students in both project and thesis streams must submit and have approved by their supervisory committee a proposal of research at the time when they register for the first time for MATH 5P99 (project students) or MATH 5F90 (thesis students). The proposal must be submitted in writing to the supervisor and signed by all members of the supervisory committee before the start of the term.

7 Project reports submission procedure

Once the project is completed, all graduate students in the project stream are required to submit a written report and deliver a formal public presentation summarizing the project. The report and the presentation will be reviewed by the supervisory committee which will determine the final mark for Math 5P99.

Two copies of the final version of the project report must be submitted to the math office together with the Graduate Record Form at least one week before the date listed on the web page of the Graduate Studies under Schedule of Important Dates (this date is identified as “Last day for submission of Graduate Record Form”, and normally occurs in early September for Fall Convocation graduation and in late April for Spring Convocation graduation).

One copy of the report stays with the advisor, while the second copy will be placed on display in the Department of Mathematics. Both copies must
satisfy the following requirements:

1. The student must obtain a report number from the math office. Reports will be numbered using YYMMDD-NN format, where YY=year, MM=month, DD=day, NN=consecutive number (in the case if more than one report is submitted on a given day).

2. The front page must be printed (preferably using a colour printer) using the template available in electronic form from the math office.

3. It is strongly recommended that students use the binding service offered by the Brock print shop. Students should order bind cover with red spine and transparent front cover. The cost of this service for a typical project will be from $4 to $6, depending on the number of pages.

All printing and binding costs are the responsibility of the student.

8 Thesis submission procedure

Students in the thesis stream must follow the procedure outlined below.

8.1 Permission to write the thesis

Once the student and the supervisor determine that the research project has met its goals to complete a thesis, a meeting of the Supervisory Committee is called. The committee will decide if the student can spend his/her remaining research time writing the thesis. The decision will be indicated on the Graduate Student Progress Form and forwarded to the Graduate Program Director.

8.2 Thesis format

A current description of the thesis format can be found at [http://www.brocku.ca/graduate-studies/current-students/thesis-procedures](http://www.brocku.ca/graduate-studies/current-students/thesis-procedures). The Department of Mathematics has no additional regulations regarding thesis format.
8.3 External thesis review and defence date

Once the supervisor (in consultation with other members of the supervisory committee) agrees that the thesis is ready for external review, five copies of the thesis are handed in to the Graduate Program Director. The supervisor must also complete a list of three potential external examiners, ranked in order of preference. Note that an external examiner may be external to the graduate program but internal to Brock University. In such case, approval must be obtained from the Dean of Graduate Studies.

Two copies of the thesis along with the list of potential external examiners are then forwarded to the Office of the Dean of Mathematics and Science. The Dean (or Associate Dean) will appoint the external examiner and forward a copy of the thesis along with the program’s policies for thesis examinations to the external examiner.

Once the Graduate Program Director and the departmental graduate administrative assistant receive notification of who the external examiner will be, a defence date will be set. The date will normally be 4-6 weeks from the external examiner notification date. The remaining examination committee members will then receive a copy of the thesis for the final defence.

The external examiner will be expected to submit a written evaluation at least one week prior to the defence. The external examiner’s report will be shared with other members of the Examination Committee and the student. If the external examiner reports that the thesis is not ready for defence, the student must revise the thesis within a reasonable period of time. The revised thesis must be approved by the Supervisory Committee and then resubmitted to the external examiner. If the external examiner’s evaluation is so unfavorable as to jeopardize the approval of the thesis, the defence should be postponed and the Graduate Program Director, in consultation with the Supervisory Committee, will recommend a subsequent course of action.

All typing and other costs of preparing the thesis are the responsibility of the student.
9 Thesis defence

9.1 Examination Committee composition

The Examination Committee will consist of the Dean of the Faculty of Mathematics and Science or the Dean’s delegate, who will serve as the non-voting chair of the Examination Committee, the external examiner, the supervisor, and two faculty representatives from the Department of Mathematics appointed by the Graduate Program Director (normally the other two members of the Supervisory Committee).

9.2 Format of the defence

The defence will consist of three parts, the first two of which are open to the public: (1) a research presentation by the candidate (2) an oral examination session, and (3) an in camera meeting of the Examination Committee. The total duration of the oral examination is not to exceed two hours. The defence proceeds as follows.

- The examination chair introduces the Committee members and the candidate, and explains the format of the defence.
- The candidate gives a presentation, normally 15-20 minutes in length.
- The floor is open to questions from the audience; members of the the Examination Committee will normally not ask questions at this time.
- This is followed by a short (about 10-15 minutes) break.
- The Examination Committee meets with the candidate for a further period of questioning. During this examination session, all questions and comments will be related to the scientific contents of the thesis.
- The order of questioning is usually the external examiner, the first member of the Supervisory Committee (the Supervisory Committee chair), the second member of the Supervisory Committee, and the supervisor. The chair of the Examination Committee is not required to ask questions.
• When the committee is satisfied with the questioning, the chair thanks the candidate, who then leaves the room so that the Committee may deliberate in camera.

• The candidate is invited back into the room to be informed of the committee’s decision.

9.3 Possible outcomes of the defence

All members of the Examination Committee, except the Committee chair, will vote on the outcome of the exam. All aspects of the written work as well as the student’s performance during the defence must be taken into consideration when determining the grade.

A Fail grade will be awarded if two or more members of the Committee vote to fail or if the external examiner deems the thesis to have failed. If a member votes against the candidate’s defense, he/she must provide a written explanation.

A Pass grade will be awarded if the majority of members of the Committee, including the external examiner, vote to pass. Theses grades shall be reported to the Faculty of Graduate Studies as either Pass or Fail. A pass grade must be further differentiated as one of: Acceptable as is, Acceptable with minor revisions, Acceptable with major revisions.

If major revisions are necessary, the Examination Committee will specify the areas for revision and the date by which the revised thesis is to be returned to the Graduate Program Director. The date will normally be within three months of the defence.

In the instance of a failed defence, the candidate will be withdrawn from the program.

9.4 Submission and deposit of the thesis

When the thesis is in its final form after the successful defence, the student will submit, in unbound form, four copies of the thesis, to the Faculty of Graduate Studies, following the procedure outlined in section XV of Academic Regulations and University Policies at http://www.brocku.ca/webcal/current/graduate/acad.html.
10 Other regulations

10.1 First draft submission for tuition fee reduction

Once the student has completed a first draft of the thesis or the project paper, and it has been reviewed by the supervisor, the student can hand in this first draft to the Graduate Program Director along with the First Draft Form from the Graduate Studies Office (http://www.brocku.ca/graduate-studies/current-students/student-forms) to apply for the first draft tuition fee reduction. A first draft is considered to be a complete draft when it requires no further research or additional chapters/sections.

10.2 Acting supervisor

If the supervisor of a graduate student takes sabbatical leave or is traveling for an extended period, he or she should designate another member of the supervisory committee to serve as an acting supervisor. Acting supervisor will sign forms for the student. If reasonable communication between the supervisor and the student can be maintained during the leave, supervisor will continue to advise and direct the student on matters related to the project or thesis as well as on course selection. If such communication is not possible, the acting supervisor will assume this role. Detailed arrangements on the above matters should be made prior the leave.