GRADUATE PROGRAM AND GUIDELINES

(for students who began a program in May 2016 or later)

Department of Mathematics and Statistics
Queen's University

August 2023

1 Degrees Offered

The Department offers degrees from two Councils of the School of Graduate Studies and Postdoctoral Affairs, the Engineering and Applied Science Council (hereafter abbreviated E&AS Council) and the Science Council in the Faculty of Arts and Science. These programs within these two Councils will be referred to as "Engineering and Applied Science" (hereafter abbreviated "E&AS") and "Science", respectively. The choice as to which program a student will enroll in is made largely on the basis of their research interests, although there may be other factors as discussed below. Within each Council, the Department offers Master's and Doctoral degrees.

1.1.2 Degree requirements: Science, Pattern 1 MSc

This degree is designated MSc and has the following requirements:

1. four one term graduate courses (see Section 2.2.1 for details about including graduate courses from previous studies);
2. all courses must be regular lecture courses; no reading/seminar courses or tutorials are allowed;
3. MATH 800 cannot be one of the 4 required courses;
4. at least one course must be taken from the Department's core graduate courses (see Section 2.2.2);
5.

Specialisation in Biostatistics
As with the Science, Pattern I (Mathematics) degree, this degree is designated MSc, and has the same degree name as the Science, Pattern I degree.

The requirements for this degree are:

1. eight one term graduate courses (see Section 2.2.1 for details about including graduate courses from previous studies);
2. of the 8 courses, 6 will be the following: EPID 801, EPID 804, EPID 823, STAT 862, STAT 886, and MATH 896[1]; the remaining two electives should include at least one course from this department. If there is not a suitable elective from the department's offerings, the student and their supervisor may make a formal request to the Graduate Coordinator for permission to take both electives out of the department.
3. only one of the required term lecture courses can be substituted with a reading/seminar course;
4. all required courses must be passed, a pass being at least a B-
5. a practicum which will involve a four month placement working on a project pertaining to some aspect of biostatistics applications or methodological research project affiliated with the work of the supervisor; students must write a report on their practicum and make a presentation to an examining committee.

See Section 1.1.4 for general remarks on suitable selection of courses for this degree.

1.1.4 Course selection for Master's degrees

The selection of courses made by each student is subject to the approval of the student's supervisor and of the Graduate Coordinator. While the Department does not wish to set down hard rules governing the selection of courses, the following are guidelines to aid students in thei(he)-3 (1 (o)-6 (u)2.2(e)0.9 (at)-2.i6 (e)-6 (

1.1.5 The Master's thesis and thesis defence

As part of the degree requirements for the MASc, Pattern I MASc degree and the Science, Pattern I MSc degree, a student must write a thesis.

The thesis. The objective of a Master's thesis is that it demonstrate that the candidate is capable of producing original and independent work. The candidate must also show themselves to be familiar with the literature in the area of their research, and with the techniques and ideas related to this research area. The student must demonstrate excellent scientific writing abilities, both in terms of using commonly accepted formatting for scientific documents and in terms of presenting material in a manner acceptable to the scientific community.

We refer to the section on thesis formatting in the regulations of School of Graduate Studies and Postdoctoral Affairs for information concerning formatting of the thesis.

The Examining Committee. The Examining Committee will be comprised as follows:

1. the supervisor(s);
2. an Internal Examiner who is a member of the Department;
3. an Internal/External Examiner from another department on campus (if a suitable examiner from another department cannot be found then another member of the Department of Mathematics and Statistics may be nominated);
4. a Head's Delegate who is a member of the Department and serves as non-voting Chair for

It is the responsibility of the student to do the following at least 10 working days before the oral examination:

1. provide each examiner with a copy of the thesis;
2. provide the Graduate Assistant with a copy of the thesis;
3. Provide the Graduate Assistant with a copy of the Permission of Co-Authors Form.

It is the responsibility of the Graduate Coordinator (or Graduate Assistant) to do the following at least 10 working days before the oral examination:

1. select the Head's Delegate;
2. provide the School of Graduate Studies and Postdoctoral Affairs with the oral examination particulars by submitting the appropriate thesis scheduling form;
3. provide the Head's Delegate with a copy of thesis and the necessary forms to report the outcome of the examination.

The oral examination. The oral examination will begin with a presentation by the candidate of approximately 20 minutes. There will then follow a period of questions by the Examining Committee. The examination may typically take between 1 5 – 2 hours, although this may well vary significantly.

More details may be found under Thesis in the General Regulations of the School of Graduate Studies and Postdoctoral Affairs

The duties of the Head's delegate. For the oral examination the Head's Delegate serves as a non voting the head r85-1 (s)-7.2 (1C /T (r3t)-3 (-0.007 Tc 0.ID 34 >>BD /T (r t)-3 ((ea)2.8 (d)87.9 ( )]TJ 3.4 (i)2.7 (d7.6 (m)-

The Examining CommitteeThe Examining Committee will be comprised as follows:

1. the supervisor(s);
2.

It is possible that an outcome of "Pass" be delivered with the understanding that minor revisions to the project report will have to be made. These revisions must be of a nature that the responsibility for their being made can be given solely to the supervisor(s). If the revisions are not substantial, then the outcome of the exam must be "Fail."

If the outcome of the exam is "Fail," then the Examining Committee must submit a written report to the Graduate Committee explaining the reasons for the outcome. The report can be written by the Chair alone, but all members of the Examining Committee should contribute to and approve the final report. In their report the Examining Committee can suggest revisions to the project report if they feel that it is feasible to rewrite and re-present the report. The Examining Committee might also recommend that it is infeasible to rewrite and re-present the report. The final decision as to whether the student will (1) be asked to withdraw from the program or (2) be given another chance to write and present their report will be left to the Graduate Committee. Should the presentation take place a second time, the same Examining Committee will evaluate the report and the presentation. The outcome of this second presentation will be final, subject to possible appeal by the student.

It is the responsibility of the student to provide an electronic copy of the project mj -0.8id4.1 -0.002 T-378.03 Tw 0.63

1.2 Doctoral degrees

The Department offers Doctoral degrees from both the AS and Science Councils. The degree requirements are as follows.

1.2.1 Degree requirements: AS, PhD

The requirements are:

1. Nine one term graduate courses (see Section 2.2.1 for details about including graduate courses from previous studies) which achieve the following conditions:
   a) a minimum of 3 one term graduate courses beyond the Master's degree of which at most one may be a combined undergraduate/graduate course;
   b) at least 3 courses must be taken from the Department's core graduate offerings (see Section 2.2.2);
   c) a maximum of 3 courses may be reading/seminar courses but cannot include MATH 800; exceptions may be made for participants in special courses offered off campus (i.e. The Fields, PIMS or CRM)
   d) the student must pass all required courses (pass means achieve grade of at least B-) and attain an average of at least A- in the 9 courses;
2. the qualifying exams (see Section 1.2.5);
3. the thesis prospectus exam (see Section 2.3 gradRgeei r6.6 (f)m-0.6tis5all

1.2.3 Course selection for Doctoral degrees

In order to ensure the integrity of the degree we offer the following guidelines for course selection.

1. No more than one third of courses taken should be combined undergraduate/graduate courses (i.e., courses offered jointly with undergraduate courses).
2. Course selection should be made with the objective of achieving exposure to multiple branches of mathematics and/or statistics.
3. The course selection should represent a depth of knowledge commensurate with a holder of a Doctoral degree in mathematics or statistics. This can be achieved, for example, through specialized seminar courses or reading courses.

The selection of courses made by each student at the beginning of their degree is made using the departmental PhD Course Selection Form found on our website under Departmental Forms and is

1.2.5 TheQualifyingExams

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The Examining Committee. The Examining Committee for the Thesis Prospectus Exam will be comprised as follows:

1. the supervisor(s);
2. two faculty who are members of the Graduate School, and normally members of the Department;
3. the Graduate Coordinator or a representative from the Department who will serve as an impartial (e.g., non-voting) Chair.

At least one member of the Examining Committee must hold a full appointment in the Department of Mathematics and Statistics.

In cases where the student's research is of an interdisciplinary nature, one of the Internal Examiners should be selected on the basis of their ability to evaluate the contribution to the discipline outside the Department's area of ex D

The Exam itself. The Exam will begin at the appointed time with the Chair, after introductions if necessary, asking the candidate to withdraw from the examination room. Upon the candidate leaving the room, the Chair will remind the Examining Committee of the objectives of the Exam. The Examining Committee will then

The final decision regarding the action to be taken will be made by the Graduate Committee. No student shall be given more than two opportunities to pass the Thesis Prospectus Exam, i.e., there shall be at most one opportunity for re-examination of the candidate.

See Section 2.3.5 for a description of the appeal procedure for the Thesis Prospectus Exam.

The duties of the Chair. The Chair is a non-voting member of the Examining Committee, but still plays an important role in the Exam. The Chair may, for example, question the candidate if they wish. As indicated above, the Chair will also guide the questioning of the Exam where this is deemed appropriate. It is also the responsibility of the Chair to ensure that in the period preceding and following the examination of the candidate, the Examining Committee explicitly addresses the Thesis Prospectus Exam objectives. The voting procedure is designed to make this easier. As is clear from the discussion above, it is important that the Chair is [illegible]

2 Schedules, procedures, and policies

For the various degrees offered by the department the major elements and procedures surrounding them are described in Section 1.3. Below we discuss some of the secondary procedural matters that the student and the faculty members involved with the graduate program might have to attend to.

2.1 Timetables for various degrees

We outline the schedules for the various graduate degrees offered by the department. It is not expected that all students will follow these schedules exactly, but the schedules are intended to indicate normal progress. Significant deviation from the normal schedule will be considered cause for concern and can eventually lead to the Graduate Committee making a recommendation for a student's withdrawal on grounds of unsatisfactory academic performance.

2.1.1 Timetable for Pattern I Master's

The Pattern I program is normally completed within 12–24 months of initial registration. Typically a student will register for the degree in September and, during the subsequent Fall and Winter terms, fulfil their course requirements. For the remainder of their degree the student will be engaged in research under the direction of their supervisor.

In order that students complete their degree in a timely manner, careful attention should be paid by both student and supervisor that a tractable research problem be arrived at early on.

Funding will not normally be available for Pattern II students beyond the first year of registration in the program; see Section 2.4.2.

2.1.3 Timetable for Doctoral degrees

The time taken for the completion of a Doctorate can vary cplyee S6 (r)14.62 (e)10.6tet5 (e1 (a)u-3.6 (.3 (l)2e)

the program while students who begin their studies in May must satisfy this degree requirement by the end of their 21st month in the program. The PhD Qualifying Examinations Selection Form is available from our website under Departmental Forms.

The qualifying exams are described in Section 1.2.5.

Thesis Prospectus Exam: At least 15 days in advance of the expected exam date, the student, in consultation with their supervisor or Supervisory Committee, will propose the Thesis Prospectus Examining Committee for approval by the Graduate Coordinator. The Thesis Prospectus Exam is described in detail in Section 1.2.6. This exam should be taken within 24 months of enrolment in the Doctoral program. See Section 2.2.10 for a discussion of the consequences of significant delay in taking the Exam. The PhD Thesis Prospectus Examining Committee Selection and Scheduling Form is available from our website under Departmental Forms. Availabl (r)8 (w(.)]TJ 0 Tc

Doctoral students may have taken equivalents of some core courses during a Master's degree at another university. In such cases the student may request a core course exemption by filling out the PhD Core Course Exemption Request Form which can be found on our website under Departmental Forms. An exemption for a core course must be approved by the student's supervisor and the Graduate Coordinator in consultation with previous and/or current core instructors if necessary.

2.2.3 Reading Courses

Students may, depending on the course requirement for their program as outlined in Sections 1.1 and 1.2, take reading courses to augment the departmental offering of graduate courses. Reading courses are not supposed to replace or duplicate core courses and are normally on more advanced and specialized topics. Reading courses may cover background material needed for a student's thesis research but the material covered in the reading course cannot form part of the thesis. Reading courses are offrial coun Rhurse 2.3 (e)-3 hhadeereduates 26e3 (s)-1.3 (h)2.2.3 (b)rn3 (t)7t6 (p)-0.7 t thrin -3 (e)-3 (o)-61y

1. to cause the student to reflect on what they have done in the past year;
2. to cause the supervisor and supervisory committee, in the case of a PhD student, to consider whether the student's progress has been satisfactory, both with respect to their obligation as supervisors and the student's obligation as a student;
3. to inform the Graduate Coordinator of the outcome of the preceding reflections and considerations.

The annual reports are not onerous for the student; it should be possible for the student to fill one out in at most 15 minutes. These reports are not onerous for the supervisor; the supervisor need only sign their name indicating that the student's stated activities are accurate and provide comments if appropriate on the student's progress. Likewise, the biannual supervisory committee report forms are not onerous for either the student or the supervisory committee members. Thus, the expectation is that these reports will be submitted in a timely manner.

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1. The student be re-examined. This option is only available if the instructor is

1. A written request for a review of the grade should be made to the instructor, with a copy being sent to the Graduate Coordinator. This request

struck to review the exam(s) in question. This committee will consist of the Graduate Coordinator or his/her delegate, and two other members of the department who are not members of the Graduate Committee or the student's supervisory committee. This committee will review the exam(s) and reply to the Graduate Committee with one of the following outcomes:

a) The existing result will stand

b)

In addition to the above there is the expectation that graduate students will contribute to the scholarly environment of the Department. There is no standard plan for carrying out this responsibility, but here are a few things that a graduate student might do:

1. be active in their research group by sharing their activities with other students;
2. be active in the Department by, for example, organizing reading and study groups for research as well as course studies;
3. attend Departmental Colloquia and seminars of interest;
4. participate in the Graduate Student Seminar;
5. serve on Departmental committees as required.
6. discharge teaching assistantship and teaching fellowship duties in a professional manner.

Students will find that their experience as a graduate student is significantly enhanced by being engaged with other graduate students and researchers in the Department.

What to do when problems arise between student and supervisor. It is an inevitable consequence of human nature that there will on occasion be problems that arise in the relationship between a student and their supervisor. Since the nature of these problems can admit no uniform characterisation, a uniform policy for dealing with these cannot be proposed. Instead we suggest the following. If a student or a supervisor is having difficulty in their relationship with the other, these difficulties should

3 Departmental Forms

Listed below is a summary of Departmental Forms.

3.1 Forms for Pattern

3.3.4 PhD Annual Progress Report Form

To be filled out annually by Doctoral students. The request to submit the report will come from the