

**MATH\*4600**  
**Advanced Research Project in Mathematics**  
**Fall 2019**



(Revision 0: August 23<sup>rd</sup>, 2019)

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## 1 INSTRUCTIONAL SUPPORT

### 1.1 Coordinator

**Kimberly M. Levere, Ph.D.**

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## 2 LEARNING RESOURCES

### Lecture Information:

While there are no formal lectures for this course, it is expected that you have regular meetings with your supervisor to ensure that you are progressing and accomplishing the tasks of your project.

### 2.1 Communication & Email Policy

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students. Scheduling for many students all with different schedules can be a challenging task. The best way that you can help me with this challenge is prompt reply to email inquiries ☺

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## 3 ASSESSMENT

### 3.1 Dates and Distribution

Your grade will be determined using the following grading scheme:

Grading Scheme
Progress Journal 5%
Depth and Effort 15%
Mid-Semester Progress Presentation 10%
Final Presentation 20%
Mini Poster 5%
Written Report 45%

**Progress Journal:** Students will be required to keep an (at least) weekly journal of their efforts. Entries should detail what work was completed in that time period as well as a rough guideline for work to be attempted/completed in the next week(s). Please ensure that you detail what was specifically done by you, versus what was provided or done by your supervisor. Also indicate roughly how long you worked on your project each week/day (depending on the frequency of your entries). You may be asked to submit your journal periodically throughout the semester, so ensure that you are keeping this up to date regularly.

**Depth and Effort:** As this is a full credit course, it is important that you are putting in an honest effort to earn this credit. Based on your interactions with your supervisor, as well as entries in your progress journal, you will be assigned a grade for the depth of your project (did you go above and beyond, or just attempt the basics?) and the effort that you put in to the project. This doesn't mean that you must get results necessarily, but rather that you have been actively working toward them (even if you run into some challenges along the way).

**Mid-Semester Progress Presentation:** Each student will present a 20-minute presentation regarding their mid-semester progress. This presentation should introduce what you are working on, perhaps some background information, your current progress, and what you are hoping to accomplish in the remainder of the semester.

**Final Presentation:** Each student will present a 30-minute presentation regarding the outcomes of their semester project. This presentation should bring everyone up to speed on what was presented mid-semester, and clearly and concisely present the results and relevant mathematical background theory required to understand the topic.

**Mini Poster:** Each student will produce a mini poster on legal-sized paper that is meant to advertise (for future students) what your project was about. You should include a summary of your work, and some of your results (either in words, or maybe you have graphs, pictures), and a picture of you, the researcher. You should also indicate who your supervisor was, and what semester the work was completed in (for you, Fall 2019). These mini posters will be displayed on a bulletin board on the 5<sup>th</sup> floor to encourage new ideas and connections by future MATH\*4600 students.

**Written Report:** A 15-20 page report (single-spaced) will be submitted to both the supervisor and myself that discusses your project as a whole. This may include background theory, maybe a

literature review, methods, numerical simulations and results, discussion, and future work. This should be written in a concise, professional tone with enough detail that concepts can be easily understood.

Both the supervisor and course coordinator will grade each student on presentation and written components of the course.

### 3.2 Course Grading Policies

**Academic Consideration:** When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, ID number, and e-mail contact. See the academic calendar for information on regulations and procedures for Academic Consideration:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

**Accommodation of Religious Obligations:** If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor at the start of the semester to make alternate arrangements. See the undergraduate calendar for information on regulations and procedures for Academic Accommodation of Religious Obligations:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-accomrelig.shtml>

**Passing grade:** In order to pass the course, you must receive a final grade of at least **50%**.

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## 4 AIMS & OBJECTIVES

### 4.1 Calendar Description

Each student in this course will undertake an individual research project in some area of mathematics, under the supervision of a faculty member. A written report and public presentations of the project will be required.

**Credit Weight:** 1.0 **Department:** Mathematics & Statistics **College:** CEPS **Campus:** Guelph

**Prerequisite:** Approval of a supervisor and the course coordinator.

**Restrictions:** This course can only be taken for credit once.

### 4.2 Course Aims

This course will introduce students to aspects of mathematical research. Students will choose a project topic either on their own, or perhaps together with their supervisor. The idea will be to utilize skills and concepts that the student has learned during their undergraduate career to investigate a mathematical problem, or perhaps a brand-new area of mathematics entirely!

Students will gain experience with the research process (literature reviews, numerical simulation, proof) as well as developing their professional writing and presentation skills.  
Not applicable.

### 4.3 Other Important Dates

**First day of classes:** Thursday, September 5<sup>th</sup>, 2019.

**Thanksgiving:** Monday, October 14<sup>th</sup>, 2019 (no classes)

**Fall Study Day:** Tuesday, October 15<sup>th</sup>, 2019 (no classes)

**Last day of classes:** Friday, November 29<sup>th</sup>, 2019.

**\*\*\*Note:** Thursday, November 28<sup>th</sup> runs as a Tuesday (in lieu of Fall Study Day), Friday, November 29<sup>th</sup> runs as a Monday (in lieu of Thanksgiving).

**Drop Date:** Courses that are one semester long must be dropped by the last class day (**Friday, November 29<sup>th</sup>, 2019**); two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate Calendar.

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

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## 5 ACADEMIC MISCONDUCT

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it.

Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member.

### 5.1 Resources

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

A tutorial on Academic Misconduct produced by the Learning Commons can be found at:  
<http://www.academicintegrity.uoguelph.ca/>

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## 6 ACCESSIBILITY

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: [www.uoguelph.ca/sas](http://www.uoguelph.ca/sas)

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## 7 RECORDING OF MATERIALS

Presentations which are made in relation of course work – including lectures and presentation – cannot be recorded or copied without the permission of the presenter, whether the instructor, classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

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## 8 RESOURCES

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

<http://www.uoguelph.ca/registrar/calendars/index.cfm?index>