

# MATH 4600 — Advanced Research Project in Mathematics Fall 2022

Department of Mathematics and Statistics, University of Guelph

**Coordinator:** [A.R. Willms](#), MACN 512, ext. 52736

## 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 a public presentation of the project will be required.

**Prerequisite(s):** 1.00 credits in Mathematics at the 3000 level or above.

**Restriction(s):** Approval of a supervisor and the course coordinator.

## Time

This course is worth a full credit; you should therefore plan to spend about 18 hours a week on this course. Students always find that the semester goes really fast and often find there is insufficient time to complete everything they set out to do. It is important that you begin diligent work immediately at the start of the semester. You should speak with your supervisor as soon as possible once the semester starts to establish your research project, and to begin to write your research proposal, which is due at the end of September. You should also arrange to meet with your supervisor at least weekly for guidance and feedback.

## Initial Student Meeting

There will be a short initial meeting of all students involved in the course with the course co-ordinator on Wednesday, Sept. 21 at 4:00 p.m. via Zoom (link to be sent out). This will just be an informal meeting where each student should be prepared to briefly (less than 5 minutes) discuss the research project they will be undertaking.

## Assessment

1. A research proposal, 2-3 pages in length (12 point font, 1 inch margins, single spaced). This proposal should describe the research that will be conducted and the methods or techniques that will be used. A time-line for the remainder of the semester must be included that specifies tasks to be completed and dates at which various milestones are expected to be reached. This time-line must be signed by the supervisor.

**NOTE:** If the student and project supervisor have had previous research collaborations in the past, such as a summer research semester, both student and supervisor are required to disclose this information and clearly describe how the current research is different from, or a significant extension to, the work previously done (additional one page maximum).

Due date: **Friday, September 30.**

Assessed by supervisor. Weight: **15%**.

2. Supervisor's mark. The supervisor will establish a regular set of meetings with the student (typically weekly). These meetings may be either face to face or online. Through these meetings the supervisor will assess the student's participation and engagement, effort extended, work progress, and adherence to the project time-line.

Weight: **15%**.

3. A final oral presentation, about 20 minutes in length using computer-generated slides. All members of the class are expected to be present for all talks. The intended audience is the other class members, that is, an audience that is mathematically and statistically literate, but not necessarily experts in the specific research area. Students are expected to ask questions of the presenter after the presentation.

Date: To be scheduled during the final week of classes.  
Assessed by both supervisor and course coordinator. Weight: **20%**

4. A typeset final report, 15-20 pages in length (12 point font, 1 inch margins, single spaced, appendices and references not included in page count). The language of this report should be formal and professional, as if it were being submitted to a journal. The use of Latex is encouraged but not mandatory. The report should provide a thorough discourse of the project, including pertinent background, a summary of at least **two** relevant papers from the literature and how they relate to the project, the methods employed in the project, results obtained, and a discussion of those results. The audience for the report is someone with at least as much understanding of the material as the student, that is, the student writer is not trying to convey information to other members of the class, who may not have much knowledge of the area, but rather to someone familiar with the field, like the supervisor.

Due date: **Friday, December 9**  
Assessed by both supervisor and coordinator (or one other unrelated supervisor). Weight: **50%**.

For items 3 and 4, the course coordinator's and supervisor's marks will be weighted 1/4 and 3/4, respectively.

## **University Policies**

### **E-mail Communication**

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.

### **When You Cannot Meet a Course Requirement**

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the Undergraduate Calendar for information on regulations and procedures for [Academic Consideration](#).

### **Drop Date**

Courses that are one semester long must be dropped by the end of the last day of classes; two-semester courses must be dropped by the last day of classes in the second semester. The regulations and procedures for [Dropping Courses](#). are available in the Graduate Calendar.

### **Copies of Out-Of-Class Assignments**

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

### **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 make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

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

## **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 or faculty advisor.

The [Academic Misconduct Policy](#) is outlined in the Graduate Calendar:

## **Recording of Materials**

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

## **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.

## **Disclaimer**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website ( <https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## **Illness**

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

## **COVID-19 Safety Protocols**

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, that these guidelines may be updated as required in response to evolving University, Public Health or government directives.