

Advanced Calculus I: MATH*2200

Course Outline

Fall 2023

General Information about the Course

Course Title: Advanced Calculus I: MATH*2200

Course Description: The topics covered in this course include infinite sequences and series, power series, tests for convergence, Taylor's theorem and Taylor series for functions of one variable, planes and quadratic surfaces, limits, and continuity, differentiability of functions of two or more variables, partial differentiation, directional derivatives and gradients, tangent planes, linear approximation, Taylor's theorem for functions of two variables, critical points, extreme value problems, implicit function theorem, Jacobians, multiple integrals, and change of variables.

Academic Department (or campus): Mathematics and Statistics

Prerequisite(s): One of IPS*1510, MATH*1090, MATH*1210, or MATH*2080.

Campus: Guelph.

Credit Weight: 0.5

Semester Offering: Fall 2023

Class Schedule and Location:



Instructor Information

Instructor Name:

Instructor Email:

Office location:



Teaching Assistants



Course Content

General Learning Outcomes:

More Calculus skills. Enhancing 3D imagination. In-depth understanding of convergence and infiniteness.

Lecture Content:

The instructor will present lectures on the topics listed in the calendar course description below. On occasion, the instructor may decide that handouts and/or computer demonstrations are appropriate.

Week	Lecture Dates	Topic	Reference in the Textbook
1	Sep 7	Sequences and Series	Ch. 2, Ch. 11
2	Sep 12, 14	Convergence	Ch. 11
3	Sep 19, 21	Convergence Tests	Ch. 11
4	Sep 26, 28	Power Series	Ch. 11
5	Oct 3, 5	Multivariable Calculus	Ch. 6
6	Oct 12		
7	Oct 17, 19	Differentiability and Tangent Planes	Ch. 6, Ch. 7
8	Oct 24, 26	Directional Derivatives	Ch. 8
9	Oct 31, Nov 2	Maxima and Minima	Ch. 8
10	Nov 7, 9	Lagrange Multipliers	Ch. 8
11	Nov 14	Multivariable Integrals	Ch. 9
12	Nov 21, 23	Multivariable Integrals	Ch. 9
13	Nov 28, 30	Multivariable Integrals	Ch. 9

Course Resources

- **Recommended Text:** *Schaum's Outline of Advanced Calculus, Third Edition*, by Robert Wrede and Murray R. Spiegel.
- The lectures are the **primary source** of course material.

Course Assessments:

- We will have **Assignments**, two **Midterms**, and a **Final**. In addition, some **Selected Problems** will be uploaded weekly.
- **Midterm 1 exam date and time:** [REDACTED]
- **Midterm 2 exam date and time:** [REDACTED]
- **Final exam date and time:** [REDACTED]

Assessment	Value	Release	Due
HW1	10%	Sept 14	Sept 19, 11:59 pm
HW2	10%	Sept 28	Oct 3, 11:59 pm
Midterm 1	15%	Oct 12	2:30 – 3:50 pm
HW3	10%	Nov 2	Nov 7, 11:59 pm
Midterm 2	15%	Nov 16	2:30 – 3:50 pm
Final Exam	40%	Dec 11	8:30 – 10:30 am

Important Dates

First day of classes: Thursday, Sept 7th, 2023.

Fall break: Friday, Oct 6th (end of day) - Wednesday, Oct 11th (classes resume on that day).

Last day of classes: Wednesday, Nov 29th, 2023. Missed classes on Oct 10th can be rescheduled for Thursday Nov 30th.

Drop Date: Dec 1st is the last day to drop F23 one-semester courses and S23/F23 two-semester courses.

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

Grading Policies

The assessments you hand in are expected to contain solely your own work. There will be **no** tolerance for plagiarism.

University Policies and Standards

Email 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 Undergraduate 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

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

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