

Mathematics 0110A – Section 550
Introductory Calculus

September - December 2022

INSTRUCTOR INFORMATION

Section	Instructor	Class Day/Time	Classroom	Email
550	M. Mollahajiaghaei	M 6:30 – 9:30 PM	HC-V207	mmollaha@uwo.ca

OFFICE HOURS: Tuesdays 3:30PM-4:30PM, A15

TEXTBOOK: *Custom Text for Mathematics 0110A/B, 1225A/B and 1230A/B*

OPTION 1: print text with homework solutions book (*any edition, used or new*)

OPTION 2: e-Book with homework solutions e-book (*any edition*)

CLASS FORMAT

- Lectures are in-person
- Quizzes may be conducted online and in-person
- Some materials will be posted to OWL (Western's online learning platform), and you are expected to access these materials in addition to attending class

TECHNOLOGY REQUIREMENTS

- Computer or laptop access
- Paper, pencils, and erasers
- *Recommended but not required:* access to a printer

PREREQUISITES

Acceptable prerequisites include (but are not limited to): Mathematics 0105A/B, Mathematics 0109A/B, Ontario High School MHF4U. If unsure, please contact the course coordinator for clarification.

ANTIREQUISITES

Mathematics 1225A/B, 1230A/B, Calculus 1000A/B, 1500A/B, Applied Mathematics 1413.

COURSE TOPICS:

Limits, continuity, definition of derivative, rules for differentiation, higher-order derivatives, velocity, acceleration, implicit differentiation, related rates, exponential functions, logarithmic functions, differentiation of exponential and logarithmic functions, maxima and minima, concavity, curve sketching, optimization.

A schedule of topics will be on the OWL page and may be slightly different for each instructor.

LEARNING OUTCOMES: students will

- Be able to manipulate functions to accomplish required goals
- Explore limits of functions
- Understand instantaneous rates of change and how they compare with slope and average rates of change
- Be able to calculate and interpret derivatives of single-variable functions
- Learn how to use exponential and log functions
- Solve application problems in a variety of areas
- Use derivatives to infer information about the graphs of functions
- Perform optimization with constraints
- Learn how to properly justify steps in mathematical calculations

INSTRUCTOR CONTACT INSTRUCTIONS:

The best way to contact your instructor is in class or at so-called “office hours”. What are office hours? See this wonderful explanation from Dr. Ishak at Santa Clara University: <https://vimeo.com/270014784>.

- Instructor office hours will be posted to the OWL page, and may be a mix of in-person and virtual/online
- Email is not efficient, and response times vary wildly depending on email volume (instructors may be receiving hundreds of emails per day).
- Any email sent to an instructor **SHOULD say Math 0110A in the subject line**. This helps us categorize your email as “not spam” and give it a higher priority
- Do not trust email “autocomplete” to default to your instructor’s email addresses. Type it in. Autocomplete may automatically input the wrong email address.
- Any changes in office hours locations and timings will be clearly communicated to you via the course OWL page, and announced in class.
- Email should not be your primary means of communication with instructors.

EVALUATION OF STUDENT LEARNING:

Students will be assessed based on:

- Quizzes and Assignments (20%) – dates/times/format will be indicated on OWL
- Test 1 (20%) on Monday, October 17 from 6:30 – 8:00 PM Eastern Time
 - If your test 1 score is lower than your test 2 and/or exam score, your test 1 weight will be reduced to 10%, and your **best** assessment between the final exam and test 2 will have an additional 10% weight applied (so either your test 2 becomes 30% weight or your exam becomes 50% weight)
- Test 2 (20%) on Monday, November 14 from 6:30 – 8:00 PM Eastern Time
- Final Exam (40%) – Scheduled during the exam period (3 hours)

Information about how the Quiz and Assignment component will be assessed, and details of the timing, will be announced by your instructor.

APPROXIMATE SCHEDULE

4

Each instructor will follow a slightly different schedule, so your topic order may not appear exactly as indicated below.

Dates	Topics	Assessments
Week 1	Operations and functions	Test 1
Week 2	Limits and continuity	
Week 3	Lines, average rate of change	
Week 4	Definition of derivative and derivative short-cuts	
Week 5	Chain rule and combination derivatives	
Week 5 and 6	Implicit, higher order derivatives, related rates	Test 2 emphasizes this material
Week 7	Exponential and log functions	
Week 8	Derivatives of exponential and log functions	
October 31 to November 4 FALL READING WEEK		
Week 9	Increasing/decreasing and max/min	Final exam emphasizes this material (but tests entire course)
Week 10	Concavity, inflection, and 2 nd derivative test	
Week 11	Optimization with applications	
Week 12	Asymptotes and curve sketching	

Appropriate Use of Learning Environment

- The course web site is hosted on OWL. It requires login using your UWO credentials.
- Course materials on the OWL page including notes, videos, and related are copyright-protected by the instructor and cannot be distributed
- Uploading of any course materials to websites or social media is strictly forbidden and will result in serious academic sanctions
- Class activities may not be recorded (video or audio) by students. This is to protect the privacy of everyone in attendance.

Academic Integrity

- It is expected that all work you submit will be your own.
- Academic integrity policies at Western require that instructors forward to their department chair or director any evidence of academic offenses
- Cheating is taken seriously to protect the integrity of our measures of your learning
- Students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:
- http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf
- Tests and exams may be subject to similarity review (by hand or by software) to check for unusual coincidences in answer patterns that may indicate cheating.

Notes about assessment format

- This is an introductory course in calculus that primarily prepares students for further study of calculus in math 1225A/B and math 1230A/B. It is also preparatory for calculus 1000A/B and calculus 1500A, though students heading into those higher-level calculus courses will also need to independently review trigonometry.
 - That this course creates a pathway to calculus 1000A/B and 1500A means we must maintain a high standard, which is reflected in the assessment format
- Tests are in-person, proctored, closed book, no calculator.
- Practice tests and exams are available on OWL, and are extremely helpful preparation

Makeup Tests

- Makeup tests will be held for students approved to write a makeup due to academic conflict or confirmed medical issue or on confirmed compassionate grounds
 - Birthdays, social activities, family trips, etc. are not grounds for a makeup

Your mark in the course will be the mark that you earn based on your demonstrated understanding of the course content, assessed using the outlined criteria. Extra credit assignments are not available, and tests and exams cannot be rewritten to obtain a higher mark.

A COMMENT ON LEARNING MATHEMATICS

Here are three reasons why we learn mathematics:

1. It is a language and set of structures that allow us to efficiently discuss, model, and explain reality. So, for some people, learning mathematics is about being able to perform specific operations and procedures for applications. People heading to professional routes that use mathematics (engineering, computer science, economics, finance, physics, actuarial science, etc.) can justify the effort needed in terms of direct utility. This concept of mathematics also aligns with its placement in the sciences, especially as it relates to developments in applied mathematics, theoretical physics, and astrophysics.
2. It provides a form of intellectual exercise that enhances our ability to solve (mathematical *and* non-mathematical) problems, think creatively, argue concisely, and navigate challenges that may not even superficially resemble mathematics. In these ways, mathematics provides an intellectual exercise akin to exercises performed as training for a sport. With physical training, there may be resentment toward running laps or lifting weights because the connection to playing soccer or baseball may be harder to see. It is no different with mathematical training; the frequent laments about inapplicability of mathematics to life or to a particular career are overlooking this aspect of mathematical training.
3. Mathematics pursues truths that are independent of any direct or indirect utility. For example, a formally proven mathematical theorem is a forever-concluded matter (i.e., not subject to scientific revision or sociopolitical reimagination), and few other areas of human inquiry enjoy this feature. The pursuit of truth and even beauty within mathematics is why the discipline can also be thought of as an art, albeit a very precise one.

SUPPORT SERVICES

Student Development Services	http://www.sdc.uwo.ca/
Learning Skills Services	http://www.sdc.uwo.ca/learning
USC	http://westernusc.ca/your-services
Academic Calendar	http://www.westerncalendar.uwo.ca/
WTS	https://wts.uwo.ca/helpdesk/

Students who are in emotional/mental distress should refer to Mental Health @ Western via the link given below for a complete list of the options about how to obtain help:
<http://www.uwo.ca/uwocom/mentalhealth/>



Appendix to Course Outlines: Academic Policies & Regulations Fall/Winter 2022

Pandemic Contingency

Huron will continue to follow the guidance of public health and government officials. It is anticipated that there will be no further disruptions to in-person instruction. This is subject to change.

Student Code of Conduct

Membership in the community of Huron University College and Western University implies acceptance by every student of the principle of respect for the rights, responsibilities, dignity and well-being of others and a readiness to support an environment conducive to the intellectual and personal growth of all who study, work and live within it. Upon registration, students assume the responsibilities that such registration entails. While in the physical or online classroom, students are expected to behave in a manner that supports the learning environment of others. Please review the Student Code of Conduct at: <https://huronatwestern.ca/sites/default/files/Res%20Life/Student%20Code%20of%20Conduct%20-%20Revised%20September%202019.pdf>.

Prerequisite and Antirequisite Information

Students are responsible for ensuring that they have successfully completed all course prerequisites and that they have not completed any course antirequisites. Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Attendance Regulations for Examinations

A student is entitled to be examined in courses in which registration is maintained, subject to the following limitations:

- 1) A student may be debarred from writing the final examination for failure to maintain satisfactory academic standing throughout the year.
- 2) Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course will be reported to the Dean of the Faculty offering the course (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Dean of that Faculty, the student will be debarred from taking the regular examination in the course. The Dean of the Faculty offering the course will communicate that decision to the Dean of the Faculty of registration.

Review the policy on Attendance Regulations for Examinations here: [Academic Calendar - Western University \(uwo.ca\)](#)

Statement on Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: [Academic Calendar - Western University \(uwo.ca\)](http://www.uwo.ca/academic_calendar) . The appeals process is also outlined in this policy as well as more generally at the following website: https://www.uwo.ca/univsec/pdf/academic_policies/ap-peals/appealsundergrad.pdf.

Turnitin.com

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

Statement on Use of Electronic Devices

It is not appropriate to use electronic devices (such as, but not limited to, laptops, tablets, cell phones) in the classroom for non-classroom activities. Such activity is disruptive and distracting to other students and to the instructor, and can inhibit learning. Students are expected to respect the classroom environment and to refrain from inappropriate use of technology and other electronic devices in class.

Statement on Use of Personal Response Systems (“Clickers”)

Personal Response Systems (“clickers”) may be used in some classes. If clickers are to be used in a class, it is the responsibility of the student to ensure that the device is activated and functional. Students must see their instructor if they have any concerns about whether the clicker is malfunctioning. Students must use only their own clicker. If clicker records are used to compute a portion of the course grade:

- the use of somebody else’s clicker in class constitutes a scholastic offence
- the possession of a clicker belonging to another student will be interpreted as an attempt to commit a scholastic offence.

Academic Consideration for Missed Work

All students pursuing academic consideration, regardless of type, must contact their instructors no less than 24 hours following the end of the period of absence to clarify how they will be expected to fulfill the academic responsibilities missed during their absence. **Students are reminded that they should consider carefully the implications of postponing tests or midterm exams or delaying submission of work, and are encouraged to make appropriate decisions based on their specific circumstances.**

Students who have conditions for which academic accommodation is appropriate, such as disabilities or ongoing or chronic health conditions, should work with Accessible Education Services to determine appropriate forms of accommodation. Further details concerning policies and procedures may be found at: <http://academicsupport.uwo.ca/>.

Policy on Academic Consideration for a Medical/ Non-Medical Absence

- (a) Consideration on **Medical Grounds** for assignments worth *less than 10%* of final grade: **Consult Instructor Directly and Contact Academic Advising**

When seeking consideration on **medical grounds** for assignments worth *less than 10%* of the final course grade, the student should contact the instructor directly. The student need only share broad outlines of the medical situation. The instructor **may** require the student to submit documentation to the academic advisors, in which case she or he will advise the student and inform the academic advisors to expect documentation. If documentation is requested, the student will need to complete and submit the [Student Medical Certificate](#). The instructor may **not** collect medical documentation. The advisors will contact the instructor when the medical documentation is received, and will outline the severity and duration of the medical challenge as expressed on the Student Medical Certificate and in any other supporting documentation. The student will be informed that the instructor has been notified of the presence of medical documentation, and will be instructed to work as quickly as possible with the instructor on an agreement for accommodation.

b) Medical Grounds for assignments worth 10% or more of final grade: Go Directly to Academic Advising

University Senate policy, which can be found at [Academic Calendar - Western University \(uwo.ca\)](#) requires that all student requests for accommodation on medical grounds for assignments worth 10% or more of the final grade be made directly to the academic advising office of the home faculty (for Huron students, the “home faculty” is Huron), with supporting documentation in the form (minimally) of the Senate-approved Student Medical Certificate found at: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

The documentation is submitted in confidence and will not be shown to instructors. The advisors will contact the instructor when the medical documentation is received, and will outline the severity and duration of the medical challenge as expressed on the Student Medical Certificate and in any other supporting documentation. The student will be informed that the instructor has been notified of the presence of medical documentation, and will be instructed to work as quickly as possible with the instructor on an agreement for accommodation. The instructor will not normally deny accommodation where appropriate medical documentation is in place and where the duration it describes aligns with the due date(s) of assignment(s). Before denying a request for accommodation on medical grounds, the instructor will consult with the Dean. The instructor’s decision is appealable to the Dean.

c) Consideration on Non-Medical Grounds: Consult Huron Support Services/Academic Advising, or email huronsss@uwo.ca.

Students seeking academic consideration for a **non-medical** absence (e.g. varsity sports, religious, compassionate, or bereavement) will be required to provide appropriate documentation. All consideration requests must include a completed [Consideration Request Form](#). Late penalties may apply at the discretion of the instructor.

Please review the full policy on Academic Consideration for medical and non-medical absence at: [accommodation_medical.pdf \(uwo.ca\)](#). Consult [Huron Academic Advising](#) at huronsss@uwo.ca for any further questions or information.

Support Services

For advice on course selections, degree requirements, and for assistance with requests for medical accommodation, students should email an Academic Advisor in Huron’s Student Support Services at

huronsss@uwo.ca. An outline of the range of services offered is found on the Huron website at: <https://huronatwestern.ca/student-life/student-services/>.

Department Chairs, Program Directors and Coordinators are also able to answer questions about individual programs. Contact information can be found on the Huron website at: <https://huronatwestern.ca/contact/faculty-staff-directory/>.

If you think that you are too far behind to catch up or that your workload is not manageable, you should consult your Academic Advisor. If you are considering reducing your workload by dropping one or more courses, this must be done by the appropriate deadlines. Please refer to the Advising website, <https://huronatwestern.ca/student-life/student-services/academic-advising/> or review the list of official Sessional Dates on the Academic Calendar, available here: <http://www.westerncalendar.uwo.ca/SessionalDates.cfm>.

You should consult with the course instructor and the Academic Advisor who can help you consider alternatives to dropping one or more courses. Note that dropping a course may affect OSAP and/or Scholarship/Bursary eligibility.

Huron Student Support Services: <https://huronatwestern.ca/student-life/student-services/> Office of the Registrar: <https://registrar.uwo.ca/>
Student Quick Reference Guide: <https://huronatwestern.ca/student-life/student-services/#1> Academic Support & Engagement: <http://academicsupport.uwo.ca/>
Huron University College Student Council: <https://huronatwestern.ca/student-life/beyond-classroom/hucsc/>
Western USC: <http://westernusc.ca/your-services/#studentservices>

Wellness and Health Supports at Huron and Western

University students may encounter setbacks from time to time that can impact academic performance. Huron offers a variety of services that are here to support your success and wellbeing. All Huron staff and faculty have received training on responding to disclosures of Gender-Based Sexual Violence (GBSV); students should know that the Community Safety Office is a resource for survivors, providing support and, if desired, guidance while referring them to the further supports that they may require. Please visit <https://huronatwestern.ca/student-life-campus/student-services/wellness-safety> for more information or contact staff directly:

Wellness Services: huronwellness@huron.uwo.ca Community Safety Office: safety@huron.uwo.ca

Additional supports for Health and Wellness may be found and accessed at Western through, <https://www.uwo.ca/health/>.

Western Calendar - Policy Pages -

[Academic Calendar - Western University \(uwo.ca\)](#)