

Math 0110A 001 Course Outline

1. Course Information

Course information:

Math 0110A: Introductory Calculus, September-December 2022

Section 001: In-person lectures, Tuesday & Thursday 7:00-9:00 p.m. in 3M Centre 3250

List of Prerequisites:

Acceptable prerequisites include (but are not limited to): Mathematics 0105A/B, Mathematics 0109A/B, Ontario High School MHF4U. If unsure, contact an academic advisor or the main math office.

List of Antirequisites:

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

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.

2. Instructor Information

Instructors	Email	Office	Office Hours
Dr. Michael Francis	mfranc65@uwo.ca	MC 133	See OWL page

Students must use their Western (@uwo.ca) email addresses when contacting their instructor or other course staff and include “Math 0110” in the subject line of their email.

Office hours are held in room 133 of Middlesex College (the photogenic building with the clock tower). One hour of weekly drop-in office hours will be announced on OWL in Week 3. You may attend office hours in-person or via Zoom. You may also contact me to make an appointment outside of regularly scheduled office hours.

The Mathematics Department runs free, in-person and virtual help centres each weekday during the semester, starting Monday September 19th. The in-person help centre is located in the Math-Physics Accelerator in PAB 48/49/26 (on the lower level of the Physics and Astronomy Building). These help centres are staffed by graduate student teaching assistants and all first-year mathematics courses are supported. No appointments are necessary.

Information about the help centre and other departmental supports for students can be found here:

https://www.uwo.ca/math/undergraduate/current_students/Help%20Centre.html

3. Course Syllabus, Schedule, Delivery Mode

Lectures: Lectures are conducted in-person Tuesday & Thursday 7:00-9:00 p.m. in 3M Centre 3250. Typically, class will consist of 50 minutes of instruction, followed by a 10 minutes “recess”, followed by another 50 minutes of more example-heavy class time.

Course description: 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.

Learning outcomes: After taking this passing this course, the student 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

Approximate schedule of Topics:

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	
Week 13	Review	

Key Sessional Dates:

- Classes begin: September 8, 2022
- Fall Reading Week: October 31 – November 6, 2022
- Classes end: December 8, 2022
- Exam period: December 10 – 22, 2022

Contingency plan for an in-person class pivoting to 100% online learning:

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, affected course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

4. Course Materials

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

OPTION 1: print text with homework solutions book (any edition)

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

Any other course materials will be posted to OWL: <http://owl.uwo.ca>. Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL site, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk by phone at 519-661-3800 or ext. 83800.

Technology requirements:

Computer or laptop access and a stable internet connection

Paper, pencils, and erasers

Recommended but not required: access to a printer

5. Methods of Evaluation

The grading scheme for the course is as follows:

Online Quizzes (best 6 of 8)	12%
In-Class Quizzes (2)	8%
Midterm Test 1	20%
Midterm Test 2	20%
Final Exam	40%

Online Quizzes: In 8 of the 13 weeks of the semester, there will be an online quiz to be completed on OWL. Quizzes open at 12:05 a.m. on Monday and close at 11:55 p.m. on Friday. Only your best 6 out of 8 scores on the online quizzes count towards your final grade. These 6 scores are worth 2% each. A student who obtains an academic consideration to miss an online quiz from a faculty counsellor or instructor will be assigned a score equal to the average of their other online quiz scores. No makeup quizzes will be scheduled.

In-Class Quizzes: There will be 2 in-class quizzes, 45 minutes in length, taking place 1 week prior to each midterm exam. The in-class quizzes are worth 4% each. **Use of a calculator or other aids is not permitted.** A student who obtains an academic consideration to miss an in-class quiz from a faculty counsellor or instructor will be assigned a score in such a way that their class rank on the missed quiz matches their class rank on the corresponding midterm test. No makeup quizzes will be scheduled.

Midterms: There will be two in-class midterm tests on October 11 and November 15. Midterms are 90 minutes in length. **Use of a calculator or other aids is not permitted.** A student who obtains an academic consideration to miss a midterm test from their faculty counsellor will be permitted to write a makeup test, scheduled roughly a week after the regular test date. A student who also obtains an academic consideration to miss a makeup test will be assigned a score in such a way that their class rank on the midterm test matches their class rank on the final exam. If your Test 1 score is lower than your Test 2 and/or Final 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 Final Exam becomes 50% weight)

Assessment Schedule:

Week 1 (Sept 8-9)	No assessment
Week 2 (Sept 12-16)	Online Quiz 1 open all week
Week 3 (Sept 19-23)	Online Quiz 2 open all week
Week 4 (Sept 26-30)	Online Quiz 3 open all week
Week 5 (Oct 3-7)	In-Class Quiz 1 on Tuesday, October 4
Week 6 (Oct 10-14)	Midterm Test 1 on Tuesday, October 11, 7:00-8:30 p.m.
Week 7 (Oct 17-21)	Online Quiz 4 open all week
Week 8 (Oct 24-28)	Online Quiz 5 open all week
Fall Reading Week: October 31-November 4	
Week 9 (Nov 7-11)	In-Class Quiz 2 on Tuesday, November 8
Week 10 (Nov 14-18)	Midterm Test 2 on Tuesday, November 15, 7:00-8:30 p.m.
Week 11 (Nov 21-45)	Online Quiz 6 open all week
Week 12 (Nov 28-Dec 2)	Online Quiz 7 open all week
Week 13 (Dec 5-8)	Online Quiz 8 open all week
Exam Period (Dec 10-22)	Final Exam, 3 hours, date/time TBA

6. Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth less than 10% of the overall course grade:

You must contact the Academic Counselling Office of your Faculty of Registration or your instructor to request an academic consideration.

Assessments worth 10% or more of the overall course grade:

Your instructor is not empowered to grant an academic consideration for work totalling 10% or more of the final course grade. You must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

The Student Medical Certificate is available at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

7. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf.

8. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

Calculators and other aids are not permitted during final exams, midterm tests and in-class quizzes.

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 Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

In the event that in-person quizzes and examinations become prohibited (e.g. in the event of a health lock-down), tests and examinations in this course will be conducted using a remote proctoring service. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the session will be **recorded**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at:

<https://remoteproctoring.uwo.ca>.

9. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.