

## **Math 1225B Course Outline**

### **1. Course Information**

#### **Course Information**

Prerequisites: Ontario Secondary School MCV4U or Mathematics 0110A/B.

Anti-requisite: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1230A/B, Numerical and Mathematical Methods 1412A/B, the former Applied Mathematics 1412A/B, the former 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**

Instructor	Email	Office	Phone	Office Hours
Dr. Khoa Nguyen	knguyen@uwo.ca	MC 282	519-661-2111 x88799	Friday, 2:00pm-3:00pm in person
TA	TBA			

Students must use their Western (@uwo.ca) email addresses when contacting their instructors and must say Math 1225B in the subject line.

### **3. Course Syllabus, Schedule, Delivery Mode**

Description: Elementary techniques of integration; applications of Calculus such as area, volume, and differential equations; functions of several variables, Lagrange multipliers.

Objectives: At the end of the course, a student should be able to

- Evaluate limits of functions of one variable
- Evaluate derivatives of functions of one variable
- Use the Chain Rule to evaluate derivatives of functions of one variable
- Use derivatives to solve an optimization problem
- Integrate functions by using several techniques such as substitution, integration by parts, partial fractions
- Identify a given definite integral as proper or improper and evaluate it
- Find extreme values of a function of several variables by using Lagrange multiplier
- Evaluate partial derivatives of functions of several variables

**Important Dates:**

Classes begin January 6, 2025

Spring Reading Week: February 15–23, 2025

Family Day: February 17, 2025

Classes end: April 4, 2025

Exam period: April 7 – 30, 2025

**Contingency plan:**

Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will **not** change. Any assessments affected will be conducted online as determined by the course instructor.

## 4. Course Materials

Required Textbook: University of Western Ontario Custom e-book: Text for MATH 1225A/B, 2 nd edition. SKU: CEB\_CODEID=38254. Here is the link of UWO bookstore:

[https://bookstore.uwo.ca/textbook-search?campus=UWO&term=W2024B&courses%5B0%5D=001\\_UW/MAT1225B](https://bookstore.uwo.ca/textbook-search?campus=UWO&term=W2024B&courses%5B0%5D=001_UW/MAT1225B)

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.

All course material will be posted to OWL: <https://owl.uwo.ca>.

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. They can be contacted by phone at 519-661-3800 or ext. 83800.

**Technical Requirements**

To use **WeBWorK**, students will need stable internet connection, a laptop or computer and recent browsers as Firefox or Chrome.

## 5. Methods of Evaluation

The overall course grade will be calculated as listed below:

1. Regular Assigned Problems (not graded) 5%:

Marked on participation only using iClicker. The score you receive is based on the % of questions you answer:

At least 80% = 5; 70-79% = 4; 60-69% = 3; 50-59% = 2; 40-49% = 1; Less than 40% = 0

2. Assignments (6) 15 %

3. Midterm Test 35%, Thursday, February 13, 2025, from 7:00pm-9:00pm (in person)

4. Final Exam 45 % scheduled by the Registrar Office (in person). This is a comprehensive examination; it covers the entire material of the course.

**Remark:** NO calculators or other electronic devices or any other aids are allowed on exams.

**Assignments:** Students do their assignments in **WeBWorK**. There are 6 assignments, and the best five out of six are chosen.

Assignment 1: released January 13, due January 19

Assignment 2: released January 27, due February 2

Assignment 3: released February 10, due February 14 (by 5:30pm)

Assignment 4: released February 24, due March 2

Assignment 5: released March 10, due March 16

Assignment 6: released March 24, due March 30

#### Week Dates Topics by Chapters Comments

1	January 6-10	1.5, 1.6, 2.1, 2.2, 2.4	Limits, continuity, derivatives, product and quotient rules
2	January 13-17	2.5, 2.6, 2.7, 3.1, 3.2,3.3	Chain rule, higher derivatives, implicit differentiation, the 1 <sup>st</sup> and 2 <sup>nd</sup> derivative tests, concavity
3	January 20-24	4.1, 4.2, 4.3, 4.4, 4.5	Exponential, logarithmic functions and their derivatives, logarithmic differentiation
4	January 27- 31	8.2, 8.3, 5.1	Sine and cosine functions, derivatives of sine and cosine, antiderivatives, and indefinite integrals
5	February 3-7	5.2, 5.3, 5.4	Integration by substitution, Integration related to exponential and logarithmic functions, definite integrals, area and the FTC
6	February 10-14	5.5	review Areas between curves, Midterm Exam (Thursday, Feb 13 from 7:00pm-9:00pm)
7	February 17-23	Spring Reading Week	No classes, Family Day (Feb 17, 2025)
8	February 24-28	6.1, 6.4, 8.4	Integration by parts, partial fractions,

			improper integrals, integrals of sine and cosine
9	March 3-7	7.1, 7.2, 7.3	Functions of several variables, partial derivatives, optimizing functions of several variables
10	March 10-14	7.5	Lagrange multipliers and constrained optimization
11	March 17-21	9.1, 9.2	Separable differential equations, applications
12	March 24-March 28	9.3	First order linear differential equations and its applications
13	March 31-April 4		Catchup and review

## Accommodated Evaluations

Students must familiarize themselves with the University Policy on Academic Consideration- Undergraduate Students in First Entry Programs posted on the Academic Calendar:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/academic\\_consideration\\_Sep24.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf)

This policy does not apply to requests for Academic Consideration submitted for **attempted or completed work**, whether online or in person.

The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult [Accessible Education](#).

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage:

[https://registrar.uwo.ca/academics/academic\\_considerations/](https://registrar.uwo.ca/academics/academic_considerations/)

All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline.

All Academic Consideration requests must include supporting documentation; however, recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request **without supporting documentation** in this course. However, the following assessments are excluded from this, and therefore always require formal supporting documentation:

- Examinations scheduled during official examination periods (Defined by policy)
- Midterm Exam

When a student *mistakenly* submits their one allowed Academic Consideration request **without supporting documentation** for the assessments listed above or those in the **Coursework with**

**Assessment Flexibility** section below, the request cannot be recalled and reapplied. This privilege is forfeited.

## Evaluation Scheme for Missed Assessments

- Missed Lectures (iClicker Questions): We understand that you will not be able to attend class from time to time. So, the participation-based iClicker marking scheme was designed to consider occasional missed classes. Therefore, iClicker marks will not be adjusted for the occasional missed classes. However, if you have a long-term absence (three or more consecutive classes) that is supported by academic consideration, your iClicker marks will be adjusted to take your long absence into account.
- If a student missed more than one online assignment, academic consideration may be granted, and these missed assignments will be reweighted to the other assignments.
- If a student misses the midterm exam (with academic consideration), there will be a makeup test on Tuesday, February 25, 2025, from 7:00pm-9:00pm.
  - If a student then missed the makeup for midterm exam (with academic consideration), the weight of the midterm would shift to the final exam.
- For students who miss the final exam with formal academic consideration, they will be allowed to take the Special Examination (the name given by the University to a makeup Final Exam). See the Academic Calendar for details (under Special Examinations), especially for those who miss multiple final exams within one examination period.
- Online makeups are NOT available for any reason.
- **Coursework with Assessment Flexibility**
- By policy, instructors may deny Academic Consideration requests for the following assessments with built-in flexibility:
- **Flexible Completion**
- **Assignments.** This course has 6 assignments, and the 5 ones with the highest marks are counted towards your final grade. Should extenuating circumstances arise, students do not need to request Academic Consideration for the first missed assignment. Academic consideration requests will be denied for the first missed assignment. Academic Consideration requests may be granted when students miss more than one assignment, and these additional (2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>...) missed assignments will be reweighted to the other assignments.
- **Deadline with a No-Late-Penalty Period**
- Students are expected to complete all the assignments by the deadline listed. We will leave the assignments open for 48 hours after the deadline as a no late penalty period. No submission will be accepted after that 48-hour period.

If students need assistance with the course OWL site, they can seek support on the [OWL Brightspace Help](#) page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

## 6. Additional Statements

## **Religious Accommodation**

When conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request an accommodation for their absence in writing to the course instructor and/or the Academic Advising office of their Faculty of Registration. This notice should be made as early as possible but not later than two weeks prior to the writing or the examination (or one week prior to the writing of the test).

Please visit the Diversity Calendars posted on our university's EDID website for the recognized religious holidays:

<https://www.edi.uwo.ca>.

## **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](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf).

## **Academic Policies**

The website for Registrar Services is <https://www.registrar.uwo.ca/>.

In accordance with policy,

[https://www.uwo.ca/univsec/pdf/policies\\_procedures/section1/mapp113.pdf](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.

**Remark:** NO calculators or other electronic devices or any other aids are allowed on tests and exm.

**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:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](https://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.

## **Support Services**

Please visit the Science & Basic Medical Sciences Academic Advising 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](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](mailto: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](http://academicsupport.uwo.ca/accessible_education/index.html)

if you have any questions regarding accommodations.

Learning-skills counsellors at Learning Development and Success (<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/>.