

CALCULUS 2302A - INTERMEDIATE CALCULUS I

COURSE OUTLINE

FALL 2023

1. COURSE INFORMATION

Instructor:	Dr. Janusz Adamus	Delivery Mode:	In person
Email:	jadamus@uwo.ca	Class Day/Time:	M/W/F, 1:30–2:30pm
Office Hours:	TBA	Classroom:	AHB-2B04
Office Location:	MC 122		
Course website:	https://www.math.uwo.ca/faculty/adamus/teaching/2302A2023/		

Prerequisites: A minimum mark of 55% in one of Calculus 1501A/B, Calculus 1301A/B, Numerical and Mathematical Methods 1414A/B, the former Applied Mathematics 1414A/B, the former Applied Mathematics 1413. Integrated Science 1001X with a minimum mark of 60% can be used in place of Calculus 1301A/B.

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.

Antirequisites: Calculus 2502A/B.

Textbook: Calculus Vol. 3, by OpenStax (available online and on the course website).
Alternative reading material: Multivariable Calculus (any edition), by J. Stewart.

2. COURSE DESCRIPTION

Three dimensional analytic geometry: dot and cross product; equations for lines and planes; quadric surfaces; vector functions and space curves; arc length; curvature; velocity; acceleration. Differential calculus of functions of several variables: level curves and surfaces; limits; continuity; partial derivatives; tangent planes; differentials; chain rule; implicit functions; extrema; Lagrange multipliers.

If you are unsure whether you should be taking Calculus 2302A or 2502A, please check the course prerequisites and your module requirements and/or contact an academic counsellor.

Learning Outcomes. Upon successful completion of this course, students will understand how to:

- Represent lines and surfaces in three-dimensional space
- Make calculations involving lines and surfaces
- Extend calculus concepts from one variable to several variables
- Apply knowledge to solve problems in mechanics (velocity and acceleration)
- Define functions implicitly and work with them
- Calculate the extrema of a function and calculate the extrema of a function when it is subject to constraints.

What is expected of the student? Students are expected to attend all class meetings, review all learning materials in timely fashion, follow class announcements, complete all assignments and write all quizzes and examinations.

Students are responsible for checking the course website (above) 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 the course website.

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

In an event during the course that necessitates the course delivery moving away from face-to-face interaction, all course content will be delivered online. Any synchronous content will be delivered on Zoom during the times indicated in the timetable. Any asynchronous content will be posted on the course website. The grading scheme will not change. Any remaining assessments will also be conducted online as determined by the course instructor. For the online mode of course delivery the following technical requirements will be applicable: computer with a microphone and webcam, stable internet connection, a scanner or an alternative. Any remote learning sessions will not be recorded. Any online proctored assessments will not be recorded.

3. EVALUATION OF STUDENT PERFORMANCE

The course mark will be based on 10 weekly *in-class* quizzes (10 min. each), 2 term tests, and the final exam, with the following weights:

- Best 8 out of 10 quizzes*: 24%
- Term tests**: 36% (18% each)
- Final exam***: 40%.

Examination dates:

* The in-class quizzes will be held weekly, beginning Sept.27 and ending Dec.6.

** The midterm tests will be held in-class on Oct.20 (Midterm 1) and on Nov.17 (Midterm 2).

Make-up midterm tests are tentatively scheduled for Oct.27 and Nov.24, respectively.

*** The final exam will be 180 minutes in duration and will consist of a mixture of short answer and multiple-choice-style questions. The final exam will be scheduled by the registrar during the final exam period. It will cover all of the course material.

Problem Sets. The problem sets will be assigned weekly. *These will not be submitted for marking.* However, they are essential to the understanding of the material and preparation for the quizzes and tests.

Accommodated Evaluations. Missing a midterm exam, the final exam, or a quiz will result in a grade of zero unless appropriate permission is sought and granted (see section 4). In the case of quizzes, your mark will be re-weighted to exclude the missed assessment (if you have appropriate accommodation). For example, if you miss one quiz with permission, the best 7 out of 9 quizzes written will count for the 24% of your grade.

In the case of a missed midterm exam, a makeup test will be arranged. If you miss a term test and the corresponding makeup test and have appropriate permission for both, then the final exam will be re-weighted to include the weight of the missed term test.

For work totaling 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. Likewise, for a missed quiz students should seek an accommodation from the Academic Counselling. In any case, do not send any medical or other supporting documentation to your instructor.

For further information, please consult the University's medical illness policy at https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration.pdf.

The Student Medical Certificate is available at

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

4. STUDENT ABSENCES

Academic Consideration for Student Absences. Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

- (1) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.

- (2) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructor within 24 hours of the end of the period covered, unless otherwise instructed in the course outline.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences must be submitted to the Academic Counselling office of a student's Home Faculty.**

For the policy on Academic Consideration for Student Absences – Undergraduate Students in First Entry Programs, see https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf, and for the Student Medical Certificate (SMC), see http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

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>.

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).

5. ACCOMMODATION AND ACCESSIBILITY

Students with disabilities work with Accessible Education (formerly SSD), 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 [Western University Policy on Academic Accommodation for Students with Disabilities](#).

6. 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 his/her official university address is attended to in a timely manner.

The use of calculators and other electronic devices during the quizzes, term tests or final exam is prohibited.

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.

7. 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/>.

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 (519) 661-2147 if you have any questions regarding accommodations.

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/>.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.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.

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

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