

Calculus 1301B – Calculus II

Fall/Winter 2022-2023

Course Outline

1. Course Information

Course Name: Calculus II
Course Number: CALC 1301B
Academic Term: FW22

Prerequisites: A minimum mark of 55% in one of [Calculus 1000A/B](#), [Calculus 1500A/B](#), [Numerical and Mathematical Methods 1412A/B](#), the former Applied Mathematics 1412A/B.

Antirequisites: [Calculus 1501A/B](#), [Numerical and Mathematical Methods 1414A/B](#), the former Applied Mathematics 1414A/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. Your Instructors

Students must use their Western (@uwo.ca) email addresses when contacting their instructors and put "CALC 1301B" in the subject line in addition to other identifiers. Feedback on calculus should be sought through office hours, in tutorial, or via the math help centre. Remember to check announcements on our OWL page before contacting your instructor. Instructors will endeavour to reply to student queries within five business days, although response times may be longer depending on the volume of emails received. It is your responsibility to ensure you raise your concerns in a timely manner. Please contact the course coordinator for administrative questions related to the course.

Course Staff:

Dr. Janusz Adamus
Professor
Dept. of Mathematics
Email: jadamus@uwo.ca

Dr. Tatyana Barron
Professor
Dept. of Mathematics
Email:
tatyana.barron@uwo.ca

Dr. Zinovi Krougly
Assistant Professor
Dept. of Mathematics
Email: zkrougly@uwo.ca

Dr. Khoa Nguyen
Assistant Professor
Dept. of Mathematics
Email: knguyen@uwo.ca

Dr. James Uren (course
coordinator)
Program Coordinator
Dept. of Mathematics
Email: juren2@uwo.ca

Office hours: Each instructor will offer weekly consultation time and the details can be located on our OWL page. It is important that you check OWL regularly for updates/changes to the scheduling of these times.

Section	Dates	Time	Room	Professor
LEC 001	M/Tu/W/F	1:30pm – 2:30pm	B&GS-0165	T. Barron
LEC 002	M/Tu/W/Th	8:30am – 9:30am	UCC-146	J. Adamus
LEC 003	M/W	7:00pm – 9:00pm	TC-141	K. Nguyen
LEC 004	M/W/Th/F	8:30am – 9:30am	SH-3345	Z. Krougly

Extra Help: The Mathematics Department runs free in-person and virtual help centres each week day during the semester, starting during the second week of each semester. Our 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 our help centre and other departmental supports for students can be found at:

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

3. Course Description

This course continues from Calculus 1000A/B and 1100A/B. We will cover selected topics from chapters 3-7 of Calculus Volume 2: arc length, techniques of integration (integration by parts, partial fractions, special substitutions, etc.); series, Taylor series, parametric curves, arc length, first order differential equations with applications. See the list of suggested Exercises on our OWL page for more details.

Learning Outcomes

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

1. Integrate functions using several techniques such as integration by parts, partial fractions, inverse trig substitution, etc.
2. Sketch parametric or polar curves.
3. Compute area of a region formed by parametric or polar curves.
4. Determine the convergence or divergence of a given series.
5. Write a Taylor series or a McLaurin series of a differentiable function.
6. Formulate a problem in terms of a differential equation and solve it.

Tentative Course Content Schedule

	week	textbook sections	notes
1	Jan. 9 - 13	3.1 and 3.2	
2	Jan. 16 - 20	3.3 and 3.4	
3	Jan. 23 - 27	3.5.1 and 3.7	Omit 3.5.2 and 3.6.
4	Jan. 30 - Feb. 3	5.1, 5.2 and 5.3.1	
5	Feb. 6 - 10	5.3.2, 5.4, 5.5 and 5.6	Omit 5.3.3
6	Feb. 13 - 17	6.1 and 6.2	
7	Feb. 18 - 26	Reading Week	No classes
8	Feb. 27 - Mar. 3	Catch-up/review and/or start 6.3	Midterm Exam on Thursday Mar. 2, 7:00-9:00pm, covering up to and including 6.2.
9	Mar. 6 - 10	6.3, 6.4.1, 6.4.2 and 6.4.3	Omit 6.4.4 and 6.4.5.
10	Mar. 13 - 17	7.1, 7.2.1, 2.4.1 and 2.4.2	In 7.2, <i>areas</i> and <i>surface areas</i> are not covered.
11	Mar. 20 - 24	7.3 and 7.4	
12	Mar. 27 - 31	4.1 and 4.3	
13	Apr. 3 - 10	4.5 and review	Apr. 10: last day of classes

Minor adjustments to the above plan may be made as the course progresses.

Other Important Dates

Classes begin: January 9, 2023.

Reading Week: February 18–26, 2023.

Last day to drop this course without penalty: March 7, 2023.

Classes end: April 10, 2023.

Exam Period: April 13-30 2023.

COVID Contingency plan

In the event of a COVID-19 resurgence during the course that necessitates another delay to in-person classes, we will continue to deliver LEC sessions online via Zoom. The times for these synchronous meetings will coincide with those listed in the timetable. The nature of the homework assignments will remain the same. The grading scheme will **not** change. Any remaining term tests will also be conducted online as determined by the course staff.

4. Course Materials

Required Text:

Calculus: Volume 2, by Gilbert Strang and Edwin “Jed” Herman (OpenStax, 2016) – Access for free at <https://openstax.org/details/books/calculus-volume-2>

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.

Any additional or supplementary course material will be posted to OWL: <http://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

Gradescope (<https://www.gradescope.ca/>) may be used as a grading platform for some written work (including the midterm) in the course. A free account will be created on your behalf, although you will be required to verify the account and change the password during the first weeks of class. Details regarding the set-up of your account and the submission requirements for your written work will be posted on OWL. It is the responsibility of the student to ensure their homework assignments are submitted in the correct format (PDF or PNG.) Submitting work in an improper format may result in your work not being graded, and this cannot form the basis of a regrade request.

Additionally, students will need:

- a laptop or computer;
- a stable internet connection;
- a working microphone and webcam;
- to have installed recent versions of Chrome AND Firefox browsers, a pdf reader, and Zoom on their computer;

- a device for scanning (either a scanner or an app that can be used in conjunction with your device's camera).

5. Methods of Evaluation

A list of suggested exercises from the text will be provided in OWL to supplement the weekly lectures.

The overall course grade will be calculated as listed below:

Assessment	Format	Weighting	Date
Homework Assignments	Online	Assessments totaling 15% of final grade	Schedule of assignment deadlines will be available on our OWL site.
Midterm	In-person	35%	Tentatively scheduled for March 2, 7:00pm-9:00pm
Final Exam	In-person	50%	TBA (3 Hours)

- The midterm is 120 minutes in duration and will consist of a mixture of short answer and multiple-choice-style questions. *This is a closed book test. No notes, calculators, or other aids will be permitted.*
- The make-up midterm is tentatively scheduled for March 9th, 7-9pm.
- The final exam will be cumulative, 180 minutes in duration, and will consist of a mixture of short answer and multiple-choice-style questions. *This will be a closed book exam. No notes, calculators, or other aids will be permitted.*

6. 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:

- (i) For work worth less than 10% of the total course grade (a homework assignment, for example) your LEC instructor is empowered to grant academic considerations without the

- need to contact counselling. To seek accommodations for work totaling less than 10% of your course grade please send an email to your LEC instructor in a timely manner.
- (ii) 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.
 - (iii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.
 - (iv) 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.

Missed assessments can only be excused through one of the mechanisms above. In all cases, students are required to contact their instructors 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.**

Accommodated Evaluations

Missing a test or the due date of a submitted homework assessment will result in a grade of zero unless appropriate permission is sought and granted. In the case of homework assignments your mark will be re-weighted to exclude the missed assessment. In the case of a missed midterm, a common makeup test will be arranged. If a student misses a term test and the corresponding makeup test and has appropriate permission for both, then the final exam will be re-weighted to include the weight of the missed term test.

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

The use of calculators and other electronic devices during the 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.

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 your 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/>.