

CALC 1501B - Calculus II for Mathematical and Physical Sciences Winter 2022-2023 Course Outline

1. Course Information

Section	Dates	Time	Room	Professor
LEC 001	M/Tu/W/F	8:30am – 9:30am	3M-3250	M. Pinsonnault
LEC 002	M/Tu/W/Th	12:30pm – 1:30pm	SH-3345	R. Shafikov

There are 4 lectures per week. These lectures may take the form of a supplementary lesson, problem session, or a discussion, depending on the week. A list of suggested exercises from the textbook will be provided in OWL to supplement the weekly lectures.

OWL Website: Both sections (001 and 002) share the same OWL website: **CALC 1501B 001 FW22.**

Prerequisites: A minimum mark of 60% in one of Calculus 1000A/B (or 1100A/B), Calculus 1500A/B, Numerical and Mathematical Methods 1412A/B, the former Applied Mathematics 1412A/B.

Antirequisites: Calculus 1301A/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. Email Communication with Instructors

If you have questions you can email your instructor. **Your email must comply with the following rules:**

- You must use your **UWO email address**.
- You must include "**CALC 1501B**" in your title.
- You must include your **full name** as it appears on your UWO id in the body of the message.
- You must include your **student number** in the body of the message.

- **Never reply directly to an announcement email** sent from the OWL website.

Not following any these rules may create confusion and may result in unexpected delays.

Feedback on calculus should be sought through office hours, in class, 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 enquiries 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.

3. Instructor Information

Course Staff:

Dr. Martin Pinsonnault
[Section 001]
Associate Professor
Dept. of Mathematics
Office: MC 132
Email: mpinson@uwo.ca

Dr. Rasul Shafikov
[Section 002]
Professor
Dept. of Mathematics
Office: MC 271
Email:
shafikov@uwo.ca

Dr. James Uren
[Coordinator]
Program Coordinator
Dept. of Mathematics
Office: MC 125
Email: juren2@uwo.ca

Office hours: Each instructor will offer weekly consultation times and the details can be located on the OWL page associated to the course.

4. Course Description and Learning outcomes:

Students who intend to pursue a degree in Mathematics, Applied Mathematics, Statistics, Actuarial Sciences, Physics or Astronomy should take this course.

- Review of integration and continuity.
- The Intermediate Value Theorem, the Extreme Value Theorem, the Mean Value Theorem and their consequences.
- Mathematical induction.
- Techniques of integration (substitution, integration by parts, trigonometric integral, trigonometric substitutions, partial fractions).
- Constructing new functions using integration.
- Improper integrals, the Gamma function.
- Sequences, convergence, the Monotone Convergence Theorem.
- Series, Taylor series with applications.
- Parametric curves with applications.
- Polar coordinates.
- First order linear and separable differential equations with applications.

Differences between CALC 1501B and CALC 1301B:

CALC 1301B and CALC 1501B introduce students to elementary integration techniques, sequences, and series. However, CALC 1501B also covers **topics** that are not discussed in CALC 1301. Examples include rigorous definition of limits, mathematical induction, the gamma function, and rigorous constructions of functions using integrals. More importantly, students in CALC 1501B are required to learn some important **definitions** and **theorems**, to learn how to use them to solve various problems, and to learn how to assemble them logically in order to prove some elementary mathematical statements.

5. Course Materials

Required Text:

- *Calculus: From The Mean Value Theorem To Polar Coordinates*, by R. Shafikov, Available at the UWO Bookstore.
- *CLP Calculus 1 and 2*, by Joel Feldman, Andrew Rechnitzer, and Elyse Yaeger (UBC 2018) – Access for free at <https://secure.math.ubc.ca/~CLP/>

Optional Additions:

Single Variable Calculus: Early Transcendentals (9th edition), by James Stewart (Cengage/Brooks Cole). This is another text sometimes used for first year calculus. While it is not required that you have access to this text, some students may benefit from an additional resource. The text is currently in its 9th edition.

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: <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.

Gradescope (<https://www.gradescope.ca/>) will be used as a grading platform for written work 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 PDF format. 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, the two term tests may be scanned by the course staff and uploaded to Gradescope for grading and viewing.

WebWork will be used for weekly quizzes. These assignments are individualized and should be submitted online. The deadline for the assignments is strictly enforced. You can login to WebWork on: <https://webwork.math.uwo.ca/webwork2/Calc1501-Winter2023/>

WebWork is a free open-source platform. For more information on WebWork see https://webwork.maa.org/wiki/Student_Information

6. Methods of Evaluation

The overall course grade will be calculated as listed below:

Assessment	Weighting	Date
Webwork Quizzes	3%	Weekly, starting in the 2 nd week
1st Assignment	6%	Released January 26 th , due February 9 th , 11:59pm
Midterm 1	23%	Tentatively scheduled for February 16 th , 7pm - 9pm
2nd Assignment	6%	Released February 17 th , due March 10 th , 11:59pm
Midterm 2	23%	Tentatively scheduled for March 17 th , 7pm - 9pm
3rd Assignment	6%	Released March 17 th , due March 31 th , 11:59pm
Final Exam	33%	Scheduled by the Registrar Office (3 Hours)

- The assignments are designed to prepare students for the exams.
- Midterm 1 and Midterm 2 will be 120 minutes in duration and will consist of a mixture of short answer and multiple-choice-style questions. *These will be closed book tests.*
- Makeup midterms will be held **one week after** the scheduled midterms (+/- one day if necessary to avoid conflicts with other exams).
- 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.*

Accommodated Evaluations

Missing an evaluation component will result in a grade of zero unless appropriate permission is sought and granted (see section 7 below).

Late Assignments: Unless an academic consideration is granted, 10% will be taken off for each day after the due date. No assignment will be accepted more than 3 days after the due date.

Missed Assignments: Students who are granted an academic consideration for a missed assignment will get their the other components of their evaluation reweighted.

Missed Midterm: Students who are granted an academic consideration **no later than 5 days after the midterm** will get an a make-up exam. Students who are granted an academic consideration and who are not able to complete the evaluation component **within 7 days** after the sheduled date will get their evaluation reweighted.

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).

7. 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 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.
- (ii) 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 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.**

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>

8. Accommodation and Accessibility

Accommodation Policies

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:

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

9. Online Learning Contingency plan

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). In the case the courses moves online, each student will need:

- Laptop or desktop computer
- A browser meeting the requirements for OWL, Gradescope, and Proctortrack
- Stable internet connection
- Working microphone
- Working webcam
- Device for scanning (either a scanner or an app that can be used with your phone's camera)

The grading scheme will not change. Tests and examinations 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. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at <https://remoteproctoring.uwo.ca> . Assessments will also be conducted online as determined by the course instructor.

If students need assistance with any of the above items, they can seek support on the OWL Help page [\url{https://owlhelp.uwo.ca/students/index.html}](https://owlhelp.uwo.ca/students/index.html). Alternatively, they can contact the Western Technology Services Helpdesk [\url{https://wts.uwo.ca/helpdesk/}](https://wts.uwo.ca/helpdesk/). Phone: 519-661-3800 or Ext~83800.

10. 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>

10. 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>.