

NMM 1414B Calculus for Engineers II

Course outline for Winter 2024

1. Technical Requirements:



Stable internet connection



Laptop or computer



Working microphone



Working webcam

2. Course Overview and Important Dates:



Classes Start	Reading Week	Classes End	Study day(s)	Exam Period
January 8	February 17 – 25	April 8	April 9 -10	April 11 – 30

* March 8, 2024: Last day to drop B half course without penalty

3. Contact Information

Instructor Information	Contact Information
LEC 001: Prof. Alex Buchel (course coordinator)	abuchel@uwo.ca
LEC 002: Prof. Mahi Singh	msingh@uwo.ca

TA's contact information is available on OWL

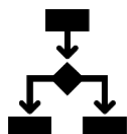
4. Course Description and Design

Topics covered include techniques of integration, areas and volumes, arclength and surfaces of revolution, applications to physics and engineering, first order differential equations, parametric curves, polar coordinates, sequences and series, vectors and geometry, vector functions, partial differentiation with applications.

Antirequisite(s): Calculus 1301A/B, Calculus 1501A/B, the former Applied Mathematics 1413, the former Applied Mathematics 1414A/B

Prerequisites: NMM1412A/B, the former Applied Mathematics 1412A/B, Calculus 1000A/B or Calculus1500A/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 if you are dropped from a course for failing to have the necessary prerequisites.



Mode	Section	Frequency
In-person	LEC 001-002	3 lectures/weekly
In-person	TUT 004-011,013	1-hour weekly for each section

Attendance at lecture/TUT sessions is strongly recommended

All course material will be posted to OWL: <http://owl.uwo.ca>. Any changes will be indicated on the OWL site and discussed with the class.

If students need assistance, 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.

[Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click [here](#).

5. Learning Outcomes and Expectations

-Students are expected to have read the appropriate sections from the textbook and to have completed practice problems recommended in class.

-Students should note that success in university-level mathematics courses requires self-directed exploration of topics.

-Students are expected to use help resources available to them when problems arise. It is often better to tackle difficult material when problems with understanding occur. Putting off questions until exam time is an ill-advised study strategy. Students that work at a consistent

pace throughout the term and make a consistent effort to understand material tend to achieve better results.

The course will cover selected material in **Chapters 6-13 in Calculus by Adams and Essex**. A list of suggested exercises will be provided; it is strongly recommended that you solve as many of them as possible.

Specific learning objectives:



- use different techniques to evaluate integrals
- apply integrals to problems from geometry, physics and engineering
- solve first order differential equations
- work with parametric and polar curves
- determine the convergence of sequences and series
- apply differential methods to vector functions and functions of several variables

6. Course Content and Schedule (tentative)



Week	Dates	Lectures
1	Jan 8 – 12	Intro/logistics/6.1, 6.2
2	Jan 15 – 19	6.3, 6.5, 7.1
3	Jan 22 – 26	7.2, 7.3, 7.4
4	Jan 29 – Feb 2	7.5, 7.6, 7.9
5	Feb 5 – 9	8.2, 8.3, 8.4, 8.5
6	Feb 12 – 16	Review for midterm
7	Feb 19 – 23	Reading week
8	Feb 26 – Mar 1	8.6, 9.1, 9.2
9	Mar 4 – 8	9.3, 9.4, 9.5
10	Mar 11 – 15	9.6, 10.1, 10.2
11	Mar 18 – 22	10.3, 10.4, 12.1
12	Mar 25 – 29	13.1, 13.2, 13.3, 13.4
13	Apr 1– Apr 5; 8	13.5, 13.7; review

7. 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, all remaining 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.

- Lectures are delivered asynchronously, tutorials/tests are in 'live' sessions
- Students are expected to participate and engage with content as much as possible

8. Evaluation

Below is the tentative evaluation breakdown for the course. Any deviations will be communicated.

Assessment	Format	Weighting	Due Date
Midterm	in-person	20%	Thur., Feb.15, 7-10pm
Quizz-1	online	10%	Jan.20-21, 6am-11pm
Quizz-2	online	10%	Feb. 3-4, 6am-11pm
Quizz-3	online	10%	Mar. 9-10, 6am-11pm
Quizz-4	online	10%	Mar. 23-24, 6am-11pm
Final exam	in-person	40%	TBA

Online quizzes will be administered via MyLab, and they will cover material up to the end of the current week. Each quiz starts on Sat 6am and ends the following Sun 11pm. Further details will be coming through the course OWL page.

- Details on the Midterm exam will be provided later (on OWL)
- Details on the Final exam will be provided later (on OWL)

Click [here](#) for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below50	Fail

Information about tests and examinations:

- The online OWL quizzes will be **open book**.
- Midterm examination will be 3h long, **closed book**.
- Final examination will be 3h long, **closed book**.
- Calculators/phones/computers etc. will not be allowed during examinations.
- The use of ANY communication devices is strictly prohibited.
- Missing an exam or quiz will result in a grade of **zero** for that exam. or quiz, unless permission is granted from Engineering Student

Services.

- If permission is granted, the instructor will provide accommodations (re-weighting for non-final assessments).
- 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).

- There will be no accommodations for any tests without permission.**
- Note: missed work can *only* be excused through one of the mechanisms above. Being asked not to attend an in-person course requirement due to potential COVID-19 symptoms is **not** sufficient on its own.**

9. Communication:

- Students should check the OWL site every 24 – 48 hours
- Emails will be monitored daily; students will receive a response in 24 – 48 hours
- Emails outside @uwo domain will be ignored**



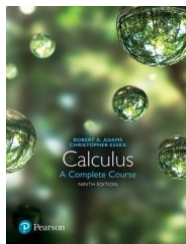
10. Office Hours:

- Office hours will be held in person



11. Required Tests and Resources

- All resources will be posted in OWL
- Calculus – A Complete Course**, 9th/10th edition, R. Adams, C. Essex (Pearson). Available in print or as an e-text.



- Additional resources: Access to Mylab from Pearson; can be bought as a package with either the print or e-version of the text.

12. Professionalism & Privacy:



Western students are expected to follow the [Student Code of Conduct](#). Additionally, the following expectations and professional conduct apply to this course:

- All course materials created by the instructor(s) are copyrighted and cannot be sold/shared
- Students will be expected to take an academic integrity pledge before some assessments

13. How to Be Successful in this Class:

Students enrolled in this class should understand the level of autonomy and self-discipline required to be successful.



1. Invest in a planner or application to keep track of your courses. Populate all your deadlines at the start of the term and schedule time at the start of each week to get organized and manage your time.
2. Make it a daily habit to log onto OWL to ensure you have seen everything posted to help you succeed in this class.
3. Follow weekly checklists created on OWL or create your own to help you stay on track.
4. Take notes as you go through the lesson material. Keeping handwritten notes or even notes on a regular Word document will help you learn more effectively than just reading.
5. Connect with others. Try forming an online study group and try meeting on a weekly basis for study and peer support.
6. **Do not be afraid to ask questions. If you are struggling with a topic, contact your instructor and or teaching assistant.**
7. **Attend lectures/TUT sessions**

14. Western Academic Policies and Statements

Absence from Course Commitments

[Policy on Academic Consideration for Student Absences](#)

Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the term, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (e.g., December and April exams)
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate if the absence is medical or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to

contact their faculty academic counselling office to obtain more information about the relevant documentation.

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 that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

Accommodation for Religious Holidays

The policy on Accommodation for Religious Holidays can be viewed [here](#).

Special Examinations

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents. To provide an opportunity for students to recover from the circumstances resulting in a Special Examination, the University has implemented Special Examinations dates. These dates as well as other important information about examinations and academic standing can be found [here](#).

Academic Offences

Scholastic offences are taken seriously, and students are directed [here](#) to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence.

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Accessible Education (AE) on 661-2111 x 82147 for any specific question regarding accommodation or review [The policy on Accommodation for Students with Disabilities](#).

Correspondence Statement

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. You can read about the privacy and security of the UWO email accounts [here](#).

15. Academic Policies and Statements

Copyright and Audio/Video Recording Statement

Course material produced by faculty is copyrighted and to reproduce this material for any purposes other than your own educational use contravenes Canadian Copyright Laws. You must always ask permission to record another individual and you should never share or distribute recordings.

Class Medium Mark Statement

The Department of Physics and Astronomy may, in exceptional cases, adjust the final course marks in order to conform to Departmental policy:

“Classes with enrolments greater than 25 are required to have a median grade in the range of 65 to 75%”

Rounding of Marks Statement

Across Undergraduate Education programs, we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. **Final grades** on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be bumped to the next grade or GPA, e.g. a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved, and the mark assigned; requests for mark “bumping” will be denied.

Remote Proctoring Software will be used in this course in the event of health lock-down

Tests and examinations in this course are planned in-person. In the event of health lockdown, all the remaining 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. 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>.

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

16. Support Services

The following links provide information about support services at Western University.

[Academic Counselling \(Science and Basic Medical Sciences\)](#)

[Appeal Procedures](#)

[Registrarial Services](#)

[Student Development Services](#)

[Student Health Services](#)

17. Addendum to all Numerical Mathematical Methods Course Outlines

Unless you have either the requisites for this course or written special permission from your dean to enroll in it, you will 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.

For multiple-choice tests and/or exams: Use may be made of software to check for unusual coincidences in answer patterns that may indicate cheating.

18. Breakdown: Engineering Science = 100%