



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF MATHEMATICS & STATISTICS
COURSE OUTLINE

1. **Course:** MATH 367, University Calculus III -- Fall 2018

Instructor Name	Email	Phone	Office	Hours
<i>L01:</i> (MWF 14:00 - 14:50 in ENA 103)				
Micheal Pawliuk	mpawliuk@ucalgary.ca	403-220-3943	MS 354	M 1pm-2pm, Thurs 11am-noon

Course Site:

D2L: MATH 367 L01-(Fall 2018)-University Calculus III

Department of Mathematics & Statistics:

Office: MS 476
Phone: 403 220-5210
Email: math@ucalgary.ca

Note:

Students must use their U of C account for all course correspondence.

2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

Prerequisite(s): Mathematics 267 or 277; Mathematics 211 or 213.

Antirequisite(s): Credit for Mathematics 367 and either 331 or 377 will not be allowed.

3. **Grading:**

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %	Date
Individual Quizzes (4)	20% Total (5% each)	Weeks 2,5,8, and 11
Group Quizzes (4)	20% Total (5% each)	Weeks 3,6,9, and 12
Online discussion participation OR Lyryx assignments	20% Total (See below)	Ongoing
Final Exam	40%	TBA

Individual Quizzes will be written in the student's registered tutorial section. Those quizzes in weeks 2,5,8, and 11 will be written by students on their own.

Group Quizzes will be written in the student's registered tutorial section. Those quizzes in weeks 3,6,9, and 12 will be written by students in randomly selected groups of 2-4 students. These group selections will be announced at least one week before the corresponding quiz. Each student in the group will receive the same grade for the quiz.

Online discussion participation OR Lyryx assignments. Each student is responsible for contributing to the online discussion boards on D2L. Every comment or post a student makes on the D2L discussion boards, before the regularly scheduled final exam, contributes 0.2% (out of 20%) for this grade component. Every Lyryx assignment that is completed with a perfect score, before the regularly scheduled final exam, contributes 2% (out of 20%) for this grade component. In other words, 100 comments or 10 completed assignments will give the full 20% for this grading component. You may mix the two by making some comment and completing some assignments. For example, making 30 comments and completing 7 assignments would result in the maximum 20% for this component. **NOTE:** The instructor has the discretion to not count comments that he deems to be made to game this system (such as 100 comments that all say the same thing).

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	97 %	92 %	87 %	82%	78%	74 %	70 %	66%	61%	60 %	53 %

The various components above will be assigned a percentage score and will be combined with the indicated weights to produce an overall percentage in the course. The conversion of the percentage grade to a letter grade is done according to the table below. A grade of 50% or higher in the final examination is essential for an overall grade of **C-**, or better. If the student's score in the final exam is less than 50%, a **D** grade or lower will result. This is to ensure that those students who receive a **C-** or better have a reasonable chance to succeed in courses that require this course as a prerequisite.

This course has a registrar scheduled final exam.

A passing grade in the final exam is essential if the student is to pass the course as a whole (grade of C- or better).

4. Missed Components of Term Work:

The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself/themself with these regulations. See also [Section E.3](#) of the University Calendar.

5. Scheduled out-of-class activities:

There are no scheduled out of class activities for this course.

6. Course Materials:

Required Textbook(s):

Joel FELDMAN and Andrew RECHNITZER, *CLP-IV VECTOR CALCULUS*: None .
D. Guichard, *CALCULUS Early Transcendentals: an Open Text*: Lyryx Learning .

Both textbooks are available for free download on the course D2L page. Both texts are freely available under the Creative Commons AttributionNonCommercial-ShareAlike 4.0 International License.

We will be using the Lyryx system for homework purposes, offering formative online assessment in an effort to support student learning. The student license is normally \$39.95+GST payable upon registration on the Lyryx system. Lyryx is offering students access to their Lyryx online homework at no cost when using University computers, including in MS317, 515, 521, & 571, AFC, TFDL and ES160 computers labs. The normal license fee will continue to be charged only to students who chose to be able to access their Lyryx account from off campus or other locations.

7. Examination Policy:

No aids are allowed on tests or examinations.

Students should also read the Calendar, [Section G](#), on Examinations.

8. Approved Mandatory and Optional Course Supplemental Fees:

There are no mandatory or optional course supplemental fees for this course.

9. Writing across the Curriculum Statement:

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section [E.2](#) of the University Calendar.

10. Human studies statement:

Students will not participate as subjects or researchers in human studies.

See also [Section E.5](#) of the University Calendar.

11. Reappraisal of Grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

1. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **15 days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall immediately submit the Reappraisal of Graded Term work form to the department in which the course is offered. The department will arrange for a re-assessment of the work if, and only if, the student has sufficient academic grounds. See sections [I.1](#) and [I.2](#) of the University Calendar
2. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

12. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).
- b. **SU Wellness Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see www.ucalgary.ca/wellnesscentre or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The University of Calgary is committed to fostering a safe, productive learning environment. The Sexual Violence Policy (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>) is a fundamental element in creating and sustaining a safer campus environment for all community members. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to talk to someone about their experience, so they can get the support they need. The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at [403-220-2208](tel:403-220-2208).
- d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. **These are only examples.**
- e. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- f. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#).

Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head of the Department of Mathematics & Statistics, Jim Stallard by email jbstall@ucalgary.ca or phone 403-220-3953. Religious accommodation requests relating to class, test or exam scheduling or

absences must be submitted no later than **14 days** prior to the date in question. See [Section E.4](#) of the University Calendar.

- g. **Safewalk:** Campus Security will escort individuals day or night (See the [Campus Safewalk](#) website). Call [403-220-5333](#) for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- h. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see [Legal Services](#) website.
- i. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](#) Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: [403-220-3913](#) Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: suvpaca@ucalgary.ca.
- j. **Internet and Electronic Device Information:** Unless instructed otherwise, cell phones should be turned off during class. All communication with other individuals via laptop, tablet, smart phone or other device is prohibited during class unless specifically permitted by the instructor. Students that violate this policy may be asked to leave the classroom. Repeated violations may result in a charge of misconduct.
- k. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

13. Extra information

13.1 Your expectations for me

Above all, you can expect I will be professional and respectful in every aspect of the course. You can expect that I will provide you with clear goals, clear guidance for the quizzes and provide you with the tools to succeed in the course. You can expect that the quizzes and final exam will accurately reflect material, techniques and ideas covered in class. Quizzes and the final exam will be marked fairly and will be returned within a week, barring exceptional circumstances. I will be receptive to your questions, comments and concerns and I will be accessible, both in my office hours and by email. You can expect that most emails will be responded to in a day or less.

13.2 My expectations for you

Above all, I expect you to engage the course material personally, intimately, honestly and thoughtfully. I expect you to develop an understanding of the basic notions, definitions and techniques in vector calculus through extensive problem solving, engaging in the lectures and discussion boards, and by asking a lot of questions. I expect you to seek out help when you need it. I expect you to be comfortable with routine, but possibly lengthy, calculations. By the end of the course you should know all of the standard ideas in vector calculus, know some of the history of the area, and develop your problem solving abilities.

13.3 Your expectations for the quizzes and the final exam

You should expect the quizzes and final exam to be fair, accurate reflections of the course material as presented in lectures, tutorials and Lyrx assignments. Every week that there is a quiz I will give you a sample quiz that will be very similar to the quiz you write that week. This is to avoid benefiting students in later tutorial sections.

When designing exams for my courses I typically do not look at previous year's exams. Do not expect the tests in this course to have a similar structure or contain similar styles of questions to tests from previous years. I am interested in assessing how well you know the course material; I am not interested in how well you know previous years' exams. I will provide you with an extensive study guide for the final exam with sample questions and the structure of the exam.

13.4 Equity and fairness in the course

This course will emphasize cooperation and consensus-building over competition. You are encouraged to make space for all students, in particular those whose voices are not typically heard, which includes listening to, respecting, encouraging, asking for input from, and promoting others.

Course Outcomes

- Work with both geometric and algebraic aspects of vector geometry and apply it in extending the analytic exploration of functions. This includes interpreting the gradient vector field of (scalar) functions and finding and using tangent and normal vector fields for curves and surfaces determined in diverse ways.
- Describe, recognize, and use basic topological and geometric properties of sets, and know how they play a role in the properties and behaviour of functions.
- Recognize how functions arise in diverse geometric and algebraic contexts and then apply analytic concepts. This involves the ability to apply appropriate approaches to locate extreme values of (scalar valued) functions, and to explicitly compute partial derivatives, Jacobian matrices and determinants of functions without a given explicit description
- Describe, define, and be able to apply concepts and methods involving integration of functions. This culminates in the ability to move between and have facility with several types of notations involving integration of vector valued functions (vector fields) over oriented curves and surfaces, and to state, calculate and explore the interrelationships of types of integrals via: the fundamental theorem for line integrals, Green's theorem, Gauss' divergence theorem, and Stokes' Theorem.
- Appreciate and recognize the use and application of these mathematical developments in diverse fields.