

# MATH 2001 Syllabus

## Department of Mathematics and Statistics

### Intermediate Calculus Fall 2023

#### Course Instructor(s)

Name	Email	Office Hours
Robert Milson	<a href="mailto:rmilson@dal.ca">rmilson@dal.ca</a>	203 Chase & online by appt

#### Course Description

Topics include review of parametric equations, polar coordinates, conic sections, coordinate systems and vectors, dot product and cross product, vector functions, derivatives and integrals of vector functions, arc length and curvature, functions of several variables and partial derivatives, directional derivatives and double and triple integrals.

*Course Prerequisites:* Math 1010

#### Student Resources

The MATH/STAT Learning Centre is located in Chase 119 and will be operating in-person and remotely. It opens on Sept. 5 and support is available Monday through Friday from 11:30am - 4:30pm and Monday through Friday evenings from 6:30-7:30pm, until Dec. 19. Register for the Brightspace "course" at <https://www.dal.ca/faculty/science/math-stats/about/learning-centre.html> to access the online support and see the latest schedule.

#### Course Delivery

In-person (TR) and synchronous online (F) (lectures will be recorded)

Lectures: TR LSC-PSYCHOLOGY P4260 16:35-17:25

#### Course Materials

[OpenStax Calculus 2&3](#), [Course Brightspace page](#)

## Assessment

<b>Assignments<sup>1</sup></b>	10x online assignment (20%)
<b>Tests/quizzes<sup>2</sup></b>	3xchapter tests: End of September, October, November (30%)
<b>Final exam<sup>3</sup></b>	(3 hours) Scheduled by registrar (50%)

- 1 *Assignments: webwork course system. Weekly (w some exceptions) due end of day on Sunday*
- 2 *Chapter tests: held in lieu of lectures. Dates TBA*
- 3 *Final exam: a set of practice exam problems will be provided*

Conversion of numerical grades to final letter grades follows the

[Dalhousie Grade Scale](#)

A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (0-49)
A- (80-84)	B- (70-72)	C- (55-59)	

## Course Policies

- *Be sure to plan your term to include the dates and times of the tests and the examination. Conflicts with travel arrangements, jobs, etc. cannot be accommodated.*
- *Calculators, textbooks, and notes are not allowed in final exam*
- *Chapter tests are open book/open notes*
- *Accommodation for late and missed assignments require contact before posted due date*
- *The Student of Absence form for late or missed requirements during the term may be used once during the term. More extensive accommodations have to be arranged through the Student Accessibility Centre.*

## Course Policies related to Academic Integrity

All webwork assignments and quizzes must be a strictly individual effort. Violations will be reported to the faculty integrity officer.

## Learning Objectives

Parametric curves and polar coordinates: 1.1-1.3 (numbers indicate sections in the text)

Three-dimensional vectors and analytic geometry: 2.1-2.6

Vector functions and space curves: 3.1-3.2

Derivatives and integrals of vector functions -- arclength, curvature, velocity, acceleration: 3.3-3.4

Functions of several variables: 4.1-4.2

Partial derivatives – linear approximation and the chain rule: 4.3-4.5

Directional derivatives and the gradient vector: 4.6

Max and min values, Lagrange multipliers: 4.7-4.8

Double integrals: 5.1-15.3

Applications of double integrals: 5.6

## **Course Content**

September: Chapter 1 (Review) and Chapter 2

October: Chapters 3 and 4

November: Chapters 4 and 5

## University Policies and Statements

### **Recognition of Mi'kmaq Territory**

*Dalhousie University acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledges held by the Mi'kmaq People, and to the wisdom of their Elders past and present. The Mi'kmaq People signed Peace and Friendship Treaties with the Crown, and section 35 of the Constitution Act, 1982 recognizes and affirms Aboriginal and Treaty rights. We are all Treaty people.*

*Dalhousie University also acknowledges the histories, contributions, and legacies of African Nova Scotians, who have been here for over 400 years.*

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit or e-mail the Indigenous Student Centre at 1321 Edward St or [elders@dal.ca](mailto:elders@dal.ca). Additional information regarding the Indigenous Student Centre can be found at:

[https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

### **Internationalization**

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." Additional internationalization information can be found at: <https://www.dal.ca/about-dal/internationalization.html>

### **Academic Integrity**

At Dalhousie University, we are guided in all our work by the values of academic integrity: honesty, trust, fairness, responsibility, and respect. As a student, you are required to demonstrate these values in all the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. Additional academic integrity information can be found at:

[https://www.dal.ca/dept/university\\_secretariat/academic-integrity.html](https://www.dal.ca/dept/university_secretariat/academic-integrity.html)

## **Accessibility**

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion, please contact the Student Accessibility Centre ([https://www.dal.ca/campus\\_life/academic-support/accessibility.html](https://www.dal.ca/campus_life/academic-support/accessibility.html)) for all courses offered by Dalhousie with the exception of Truro. For courses offered by the Faculty of Agriculture, please contact the Student Success Centre in Truro (<https://www.dal.ca/about-dal/agricultural-campus/student-success-centre.html>)

## **Conduct in the Classroom - Culture of Respect**

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

## **Diversity and Inclusion - Culture of Respect**

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). Additional diversity and inclusion information can be found at: <http://www.dal.ca/cultureofrespect.html>

## **Student Code of Conduct**

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner - perhaps through a restorative justice process. If an informal resolution can't

be reached, or would be inappropriate, procedures exist for formal dispute resolution. The full Code of Student Conduct can be found at:  
[https://www.dal.ca/dept/university\\_secretariat/policies/student-life/code-of-student-conduct.html](https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html)

## **Fair Dealing Policy**

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. Additional information regarding the Fair Dealing Policy can be found at:

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/fair-dealing-policy-.html](https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html)

## **Originality Checking Software**

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. Additional information regarding Originality Checking Software can be found at: [https://www.dal.ca/dept/university\\_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.html](https://www.dal.ca/dept/university_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.html)

## **Student Use of Course Materials**

Course materials are designed for use as part of this course at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading to a commercial third-party website) may lead to a violation of Copyright law.