

MATH 1000

Differential and Integral Calculus I, May, 2019

Instructor: Alan Surovell

Chase 201

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Lectures: Mondays & Wednesdays, 9:05 – 11:55

Course Description:

This course offers a self-contained introduction to differential and integral calculus. The topics include functions, limits, differentiation of polynomial, trigonometric, exponential, and logarithmic functions, product, quotient, and chain rules, applications of differentiation, antiderivatives and definite integrals, and integration by substitution. Math 1010 is a sequel to this course.

Course Prerequisites

Nova Scotia Mathematics advanced 11 and 12 or pre-calculus. Pre-calculus is highly recommended.

Course Objectives/Learning Outcomes

Understand the significance of limits, differentiability, and integrability of functions.

Understand the connection between differentiation and integration given by the Fundamental Theorem of Calculus.

Understand the significance of the Intermediate Value Theorem as well as the Mean Value/Rolle's Theorems.

Be able to sketch a reasonably accurate graph of a given function by hand, using calculus.

Be able to use calculus to solve optimization and related rates problems.

Be able to compute derivatives as well as basic integrals.

Course Materials

Text: Single Variable Calculus (Early Transcendentals), Eighth Edition, by James Stewart. This textbook will also be used in Math 1010.

Brightspace: All information about the course can be found on Brightspace, including announcements and grades.

Information about the course may be given in class. It is the responsibility of students to insure they are made aware of what occurs in class.

Course Content

The material to be covered in the course consists of most of the sections of chapters 2 through 5 in the text. I will try to follow the class schedule below as closely as possible.

Accommodation Policy for Students

Students may request accommodation as a result of barriers due to disability, religious obligation, or any other characteristic protected under Canadian human rights legislation. The full text of Dalhousie's student accommodation policy can be accessed here: www.dal.ca/dept/university_secretariat/student-accommodation-policy-wef-sep—1—2014.html.

Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the Advising and Access Services Centre (AASC) prior to or on the first day of the course. More information and the Request for Accommodation form are available at www.dal.ca/access.

Academic Integrity

Academic integrity, with its embedded values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviors and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty. The Academic Integrity website (academicintegrity.dal.ca) provides students and faculty with information on plagiarism and other forms of academic dishonesty, and has resources to help students succeed honestly. The full text of Dalhousie's Policy on Intellectual Honesty and Faculty Discipline Procedures is available here:

www.dal.ca/dept/university_secretariat/academic-integrity/academic-policies.html.

Student Code of Conduct

Dalhousie University has a student code of conduct and it is expected that students will adhere to the code during their participation in lectures and other activities associated with the course. In general,

“The University treats students as adults free to organize their own personal lives, behavior, and associations subject only to the law, and to University regulations that are necessary to protect the integrity and proper functioning of the academic and non-academic programs and activities of the University or its faculties, schools, or departments; the peaceful and safe enjoyment of University facilities by other members of the University and public; the freedom of members of the University to participate reasonably in the programs of the University and in activities on its premises; the property of the University or its members.” The full text of the code can be found here:

www.dal.ca/dept/university_secretariat/policies/student-life/code-of-conduct.html.

You will need at various times to gain information from different areas of Brightspace. Most importantly:

1. The course outline as well as a link to the online assignments can be found in Content.
2. Your marks, as well as a link to the homework assignments, can be found by clicking on Progress.

WeBWorK: Your online assignments will appear in WeBWorK, accessed through a link appearing under Content in Brightspace.

Student Resource Centre

The Math & Stats Student Resource Centre is located in Room 119 of the Chase Building. A calculus tutor will be available on weekdays and evenings on a first-come, first-served basis, free of charge. There are large tables where you can work together (on Math & Stats only, please). To see the summer schedule, please visit the Resource Centre's webpage at <https://www.dal.ca/faculty/science/math-stats/about/learning-centre.html>.

Course Assessment

The final grade will be computed by the following scheme;

Component	Weight (%)	Date
Online Assignments	15	Daily
Midterm Exam	35	See class schedule
Final Exam	50	See class schedule

Conversion of numerical grades to final letter grades follows the Dalhousie common grade scale:

A+ (≥ 90)	A (≥ 85 but < 90)	A- (≥ 80 but < 85)
B+ (≥ 77 but < 80)	B (≥ 73 but < 77)	B- (≥ 70 but < 73)
C+ (≥ 65 but < 70)	C (≥ 60 but < 65)	C- (≥ 55 but < 60)
D (≥ 50 but < 55)	F (< 50)	

Course Policies

A missed midterm exam can be excused due to documented illness or upon receipt of proof of equivalent inability to write at the scheduled time. However, should you miss the midterm exam for those legitimate reasons, there will be no makeup exam. Instead, the marking scheme will be changed to 85% final exam and 15% homework.

On exams, we recommend answers be left in unsimplified form.

Use of calculators is not permitted on exams.

CLASS SCHEDULE

<u>Date</u>	<u>Material Covered</u>
May 6	2.1, 2.2, 2.3
8	2.5, 2.6, 2.7
13	2.8, 3.1, 3.2
15	3.3, 3.4, 3.5
20	NO CLASS
22	3.6, 3.8
27	3.9, 3.10

29	MIDTERM EXAM (In classroom, 9 a.m. - 11 a.m., covers 2.1 – 3.10)
June 3	4.1, 4.2, 4.3
5	4.5, 4.7
10	4.8, 4.9
12	5.1, 5.2
17	5.3, 5.4
19	5.5
24	FINAL EXAM (In classroom, 9 a.m. - noon, covers all course material)