

Faculty of Science Course Syllabus**Department of Mathematics***MATH 1000**Differential & Integral Calculus I**Summer A 2020 - Distance*

Instructor: Dr. Obaidah Afghani: oafghani@dal.ca

Time: May 11- June 29

Live Lectures: Monday 1:00 - 2:00 PM (ADT)

Virtual Office Hours: Tuesday 1:00 - 2:00 PM (ADT), Wednesday 4:00 - 5:00 PM (ADT),
Thursday 1:00 - 2:00 PM (ADT) and Friday 10:00 - 11:00 AM (ADT).

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, integration by substitution. A sequel to this course is MATH 1010.03

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, continuity, differentiability and integrability of functions.
- Understand the significance of the Intermediate Value Theorem as well as the Mean Value Theorem / Rolle's Theorem.
- 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.
- Understand the connection between differentiation and integration given by the Fundamental Theorem of Calculus.

Course Materials

- Textbook: Single Variable Calculus - Early Transcendentals, Eighth Edition, by James Stewart.
- Website: MATH 1000 Brightspace webpage.
- Webwork: Used for online assignments and quizzes and accessed through Brightspace. Contact ct797606@dal.ca for questions /help regarding assignments.

Resources

- Course Notes (By Dr. Rob Noble): A summary of the textbook sections you are required to study. The notes are available under **Content** on Brightspace,
- Recorded Lessons: Lecture-style presentations of the sections in the textbook and course notes, recorded using Panopto.
- Videos: Short videos highlighting the important concepts.
- TA Online Help: tom.potter@dal.ca
- Online Learning Centre: <https://ca.bbcollab.com/guest/731016f8a1e14aed8c0cfab881c427a5>
- Discussion Board: Accessed through Brightspace.

Course Assessment

Component	Weight (% of final grade)	Date
Six Weekly Quizzes	13% for the quiz1 to quiz 5 & 14% for quiz 6	May 20, 27 and June 3, 10, 17 and 29
Seven Online Assignments	3% each	Due each Friday

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

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

Course Content and Assessment Timeline

(Refer to course calendar for a more detailed layout of topics)

Date	Content	Assessment
May 11 - 15	Limits & Continuity	Assignment 1 (May 15)
May 18 - 22	Differentiation (Part I): Definition and Basic Rules	Quiz 1 (May 20) Assignment 2 (May 22)
May 25 - 29	Differentiation (Part II) (Implicit & Logarithmic Differentiation)	Quiz 2 (May 27) Assignment 3 (May 29)
May 26	Last Day to Drop without a “W”	
June 1 - 5	Differentiation Applications (Part I) (Exponential Growth & Decay, Related Rates)	Quiz 3 (June 3) Assignment 4 (June 5)
June 8 -12	Differentiation Applications (Part II) (Optimization, Graphing & L'Hospital's Rule)	Quiz 4 (June 10) Assignment 5 (June 12)
June 11	Last Day to Drop with a “W”	
June 15 - 19	Integration (Part I) (Riemann Sums & Fundamental Theorem of Calculus)	Quiz 5 (June 17) Assignment 6 (June 19)
June 22 - 29	Integration (Part II) (Indefinite Integrals & Integration by Substitution)	Assignment 7 (June 26) Quiz 6 (June 29)

Course Policies

1. Students are expected to take responsibility for progressing through the online course material (reading assignments, lecture recordings, videos, etc.) in a timely fashion. They should follow the posted schedule/timeline.
2. Students need to complete each assignment and quiz on time to insure they build up the necessary skills for the upcoming tasks.
3. Attendance of weekly live lectures is highly recommended to ensure students stay on track.
4. Students are expected to only submit their own work reflecting their personal and individual effort. Any violation may result in disciplinary measures initiated by the instructor.

5. Assignments are in webwork and can be accessed through the course webpage in Brightspace. If students need help/tips with assignments, they should use the “**Email Instructor**” link that appears with every problem rather than email the instructor directly.
 6. One assignment is posted every week on Friday and students have a week to finish it, upon which time the next assignment is posted.
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University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of 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.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.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.

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

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

Statement: <http://www.dal.ca/cultureofrespect.html>)

Recognition of Mi'kmaq Territory

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 (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)

https://www.dal.ca/academics/important_dates.html

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Student Resources and Support

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: <https://libraries.dal.ca/>

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>

Fair Dealing Guidelines <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

Other supports and services

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html

Student Advocacy: <https://dsu.ca/dsas>

Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html