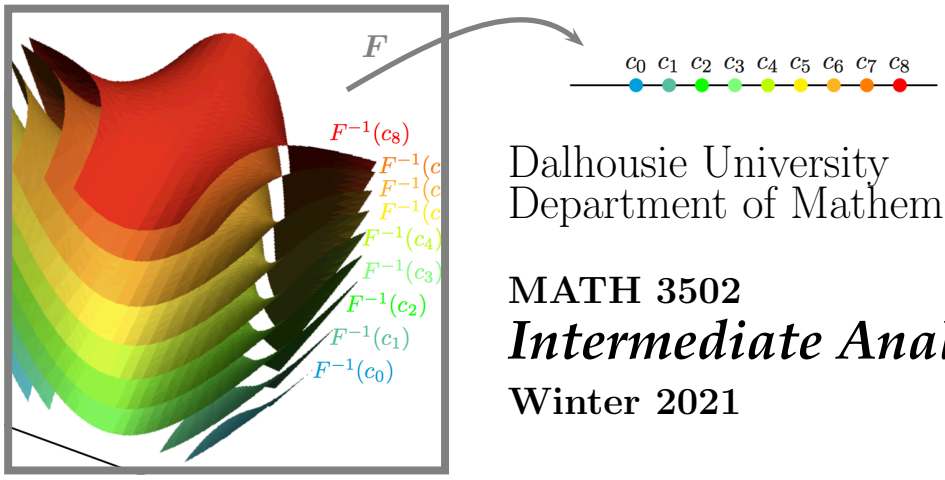

Dalhousie University
Department of Mathematics and Statistics

MATH 3502
Intermediate Analysis II
Winter 2021

Instructor: Andrea Fraser, Assoc. Professor afraser@mathstat.dal.ca

Course Time Slot: Monday, Wednesday, Friday: 1:35pm - 2:25pm.
(Times when synchronous interaction may be available).

Office Hours: Office hours will be held on Collaborate Ultra or Zoom, usually at times in the course time slot. You can also seek help by email.

Course Delivery: Lecture notes and printed study materials for all course content will be provided through the course page on Brightspace. There will also be synchronous meetings for some lectures and discussions overviewing the notes, held on Collaborate Ultra or Zoom, which will occur in the official course time slot according to a weekly schedule posted on Brightspace.

Course Materials: All course material will be available through the course page on Brightspace.

Course Assessment:

Best five of six tests: **Wednesdays Jan 20, Feb 3, 24, Mar 10, 24, Apr 7** **75%**
Available on Brightspace at 1:35pm. Must be submitted on Brightspace by 3pm.

If you miss a test for any reason, the other tests will all count.

Best eight of nine assignments: (two late submissions allowed; see course policies.) **25%**
due every Monday Jan 18 - Apr 5 except Mar 8, 22
Available approximately a week in advance. Must be submitted on Brightspace by 1:35pm.

Course Description:
Topics include: The full derivative for functions between Euclidean spaces, directional derivatives, Jacobian matrix, differentiability, C^1 functions, multilinear maps, higher derivatives, Taylor's theorem, extrema, inverse and implicit function theorems, extrema subject to constraints, Lagrange multipliers. Further topics may include: normed vector spaces and basic functional analysis, basic theory of manifolds in $\mathbb{R}^n$, Fourier series.

Prerequisites: MATH 3501.03 **Exclusions:** MATH 3500X/Y.06

Course Objectives: This course provides a thorough grounding in the formalism behind the concepts and results of multivariable calculus.

CONVERSION OF GRADES: Follows the Dalhousie Common Grade Scale.

90	–	100	A+	77	–	79.9	B+	65	–	69.9	C+
85	–	89.9	A	73	–	76.9	B	60	–	64.9	C
80	–	84.9	A-	70	–	72.9	B-	55	–	59.9	C-

50	–	54.9	D
0	–	49.9	F

COURSE POLICIES:

Course announcements: Any announcements regarding the course will be made on Brightspace or by email. You are expected to check Brightspace and email regularly.

Working on assignments: Assignments are designed to help you learn by prompting you to explore concepts on your own and helping you to familiarize yourself better with material. The process of interpreting what is being asked in a problem and establishing what you must show in order to solve it can be difficult at first but with perseverance will force you to improve your grasp on terminology and the subtleties of logic involved. Rather than turning to the internet or other sources of help when you are given a question, it is important that you make the effort to delve into it by yourself. If you are still having difficulty after making a genuine effort, you may consult your instructor for guidance and hints. You may also discuss assignment questions with your classmates, but you should not leave a discussion with anything in writing; your written work must be your own. You may not seek answers to assignment questions elsewhere. Attempting to solve a problem, whether you succeed or not, is a valuable learning experience which will give meaning and purpose to results you have learned, solidifying your understanding of the subject and helping you to think and question on your own.

Plagiarism and cheating: Tests are closed-book and must be entirely your own work. During the time-window of a test, you may not collaborate with classmates or seek help from anyone other than your instructor, and you may not consult any sources such as course material, textbooks, or websites. You will be asked to sign an honour pledge to this effect on each test paper. When writing assignments, you may consult course material, and you are allowed to discuss questions with classmates as outlined above. But soliciting outside help on assignment questions (for example, from a higher level student, from non-course websites, online chat or discussion forums, etc.) is considered cheating. Use of solutions to tests or assignments from a previous year to which you have somehow gained access is strictly forbidden and considered plagiarism. Copying solutions from textbooks or websites and presenting them as your own is plagiarism. Any student suspected of violating these rules will be required to pass an oral exam to demonstrate a full understanding of the work submitted. Further action may then be taken following Dalhousie's official plagiarism and cheating policy.

Submission policy: Each test and assignment must be completed according to the submission guidelines posted on Brightspace, and submitted by the due time. At your discretion you may submit up to two assignments by extended due times, which will be posted for each assignment on Brightspace. No other late assignments will be accepted. Failure to submit a test or assignment in time will result in a score of 0.

Technical problems: Don't leave submission until the last minute. Extra time has already been incorporated in the time-windows of tests, to allow for routine technical hassles involved with online submission. You have approximately a week for each assignment and are expected to submit your work well before the last minute. Provision has already been made for late submission of two assignments, and no other late assignments will be accepted for any reason whatsoever. Students who can demonstrate that major technical malfunctions or other circumstances beyond their control prevented their submission of a test will be extended a grace period or given a make-up paper at another time.

STUDENT DECLARATION OF ABSENCE: No *Student Declaration of Absence* forms will be accepted. Ample flexibility is already built into the course assessment.

UNIVERSITY POLICIES AND STUDENT RESOURCES: Information on Dalhousie policies and student resources can be found under Syllabus in the Table of Contents of the MATH 3502 course space on Brightspace.