Math 190 2025 W1   Calculus Survey

Prerequisites

Principles of Mathematics 12 or Pre-calculus 12.

Lecture Time and Location

Time: 10:00 am-11:00 am on Mon, Wed and Fri
Location: FSC 1003

Contacts

Instructor: Chengyu Wu

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Office hours: Tuesday 9:30 a.m. - 11:00 a.m., Friday 3:30 p.m. - 5:00 p.m.
                 Room: MATX 1102

Course Description

This is a 4-credit course designed to equip students with quantitative skills through the knowledge of calculus. The content of the course can be divided into three parts, whose main topics are listed below (the list is not exhaustive, but rather contains the essential topics)

1. Review of functions (CLP 1 Section 0.4).

2. Elements of Differential calculus:

   - Limits and limit laws (CLP 1 Section 1.3, 1.4)
   - Derivatives (CLP 1 Section 2.2, 2.3)
   - Rules of derivatives (CLP 1 Section 2.4, 2.6, 2.7, 2.8, 2.9, 2.10)
   - Related rates (CLP 1 Section 3.2)

3. Elements of integral calculus:

   - Antiderivatives (CLP 1 Section 4.1)
   - Riemann sums and integrals (CLP 2 Section 1.1)
   - Properties of integrals (CLP 2 Section 1.2)
   - Fundamental theorem of calculus (CLP 2 Section 1.3)
   - Calculating integrals by way of substitution, integration by parts and partial fractions (CLP 2 Section 1.4, 1.7, 1.10)
   - Areas and volumes as integrals (CLP 2 Section 1.5, 1.6)

All lectures will be in person. Lecture notes will be posted on Canvas after each class.

Labs

There will be weekly mandatory Labs (starting from the second week) associated with this course. They will involve TA driven examples, students solving problems in groups, and time to work on and ask questions about the content of the course. There will also be quizzes every 3 weeks during the labs. You can work together on problems but you must write and submit your own solutions.

Lab worksheets will also be posted on Canvas.

Textbook

This course contains both differential calculus and integral calculus.

- A suggested textbook for differential calculus is: CLP-1 Differential Calculus textbook (an online version can be found at : `https://personal.math.ubc.ca/~CLP/CLP1/`)

- A suggested textbook for integral calculus is: CLP-2 Integral Calculus textbook (an online version can be found at : `https://personal.math.ubc.ca/~CLP/CLP2/`)

Grading Scheme

Your final grade will be calculated as follows:

- 10% of your grade comes from labs (attendance, participation and quizzes)

- 20% of your grade comes from Midterm 1

- 20% of your grade comes from Midterm 2

- 50% of your grade comes from the Final Exam

Remark: There are no make-up midterms in this course. Missing a midterm will result in a grade of 0. The only exception to this policy is an unavoidable, documented medical emergency.

Midterm dates: There will be two in-class midterms. The dates will be determined later.

Academic Misconduct

- UBC takes cheating incidents very seriously. After due investigation, students found guilty of cheating are usually given a final grade of 0 in the course and suspended from UBC for one year.

- Note that academic misconduct includes misrepresenting a medical excuse or other personal situation for the purposes of postponing an examination or quiz or otherwise obtaining an academic concession.