Math 100 - Differential Calculus with Applications to Physical Sciences and Engineering

2020S T1, May 11-June 18, 2020

A more detailed version of this syllabus is available on the course's Canvas website. *This course will be given entirely online.*

Time: TuThF 14:00–16:00, W 14:00–15:00 via Collaborate Ultra

Instructor: Dr. Alex Weekes

Contact: weekesal@math.ubc.ca

Course website: `https://canvas.ubc.ca/courses/50169`

Textbook: *CLP-1 Calculus* by Feldman, Rechnitzer and Yeager
You can find the textbook here: `http://www.math.ubc.ca/~CLP/CLP1/problem_book_clp_1.pdf`
You can find practice problems here: `http://www.math.ubc.ca/~CLP/CLP1/problem_book_clp_1.pdf`

Webwork: Our weekly homework assignments will use the online Webwork system. Webwork assignments will be posted every week on Monday at 12:01 am, and they are due the following Tuesday (after 8 days) at 1:59 pm.

Tests: There will be two midterm tests and a final exam, which will all be held online. The (tentative) dates for the midterms are Wednesday, May 27 and Wednesday, June 10. The final exam will take place during the week of June 22-26, and will be scheduled by UBC at a later date.

Grades: Grades will be computed as the maximum of the following:

- Webwork 10%, Midterms 20%+20%, Final exam 50%, or,

- Webwork 10%, Best midterm score 20%, Final exam 70%

The grades of those students who miss a midterm will be computed by the second method.

Where to get help:

- Attend office hours, via Collaborate Ultra. The times will be posted on Canvas.

- The Math 100 Piazza page

- The Math Learning Centre: `https://canvas.ubc.ca/courses/50788`

Overview and schedule: Math 100 is an introductory course in Calculus. The central topic will be the derivative, which is a mathematical formalization of the "rate of change". It is hard to overstate how important this concept is, even though it may sound simple! There are many applications in everything from science and engineering to medicine and economics.

Our goal is to gain a better understanding of this concept by building a mathematical foundationaround it and working through many examples. We hope to strike a balance between developing ourintuition, applications and mathematical rigor.

A (rough) outline of topics is as follows, with sections from the *CLP-1* textbook:

- Week 1: 0.1-0.6, 1.1-1.6, 2.1-2.3

- Week 2: 2.3-2.4, 2.6-2.9

- Week 3: 2.10-2.12, 3.1, 3.3

- Week 4: 3.2, 3.4-3.5

- Week 5: 3.5, 2.13, 3.6

- Week 6: 3.7, 4.1

University policies: UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available on the UBC Senate website `https://senate.ubc.ca/policies-resources-support-student-success`.