Mathematics 226 (Honours Advanced Calculus I), Fall 2016

Section 101: MWF 11:00-11:50, BUCH A202

Lecturer: Prof. I. Laba

- Math Bldg 200, (604) 822 4457, ilaba@math.ubc.ca
- Office hours: TBA, in MATH 200.
- The best way to contact the instructor is by email. Please note that email received on evenings and weekends will be answered on the next business day.
- If you cannot attend regular office hours due to schedule conflict, please make an appointment in advance. Drop-ins and same-day requests for appointments cannot always be accommodated.

Prerequisites: Either (a) a score of 68% or higher in MATH 121 or (b) a score of 80% or higher in one of MATH 101, MATH 103, MATH 105, SC IE 001.

Corequisites: One of MATH 152, MATH 221, MATH 223.

Course web page: http://www.math.ubc.ca/~ilaba/teaching/math226_F2016

Homework assignments will be posted here. There will also be recommended practice problems.

Textbook: Robert A. Adams and Christopher Essex, Calculus: Several Variables (or Calculus: A Complete Course), 8th ed. Pearson, 2013, ISBN 978-0-321-87741-3.

Course topics:

- **Vectors in 3-space (Chapter 10)**: vectors, dot and cross product, planes and lines, quadric surfaces, cylindrical and spherical coordinates.
- **Functions of several variables (Chapter 12):** graphs, limits, continuity, derivatives and differentiability, gradients and directional derivatives, implicit functio ns.
- **Applications of partial derivatives (Chapter 13):** extreme values of functions, minimization and maximization problems.
- **Multiple integration (Chapter 14):** double and triple integrals, changing variables, applications.

We will be covering most, but not all, of the material from Chapters 10, 12, 13 and 14 of the textbook. Detailed updates on the syllabus will be posted on this webpage. Please be aware that this is an Honours class. Most of the emphasis will be on ideas and calculations, but you will also be expected to understand and write mathematical proofs.

Your course mark will be based on homework (10%), two midterm exams (20% each), and the final exam (50%). The grades may be **slightly** scaled at the end of the course.

Examinations: There will be two in-class 50-minute midterms, scheduled on Wednesday, October 5, and Friday, November 4, and a 2.5 hour final exam in December, The date of the final examination will be announced by the Registar later in the term. Attendance at the final examination is required, so be careful about making other committments (such as travel) before this date is confirmed. All examinations will be strictly closed-book: no formula sheets, calculators, or other aids will be allowed.

Homework: Tentatively, there will be 6 homework assignments, due on September 16 (Friday), September 26 (Monday), October 17 (Monday), October 28 (Friday), November 18 (Friday), and November 28 (Monday). Each homework will be announced and posted here at least a week in advance. The homeworks are to be handed in at the **beginning** of class. If you cannot come to class, you may drop off your homework at your instructor's

office prior to the start of class. Late assignments will not be accepted. Solutions will be posted on the course webpage immediately after the lecture. To allow for minor illnesses and other emergencies, the lowest homework score will be dropped.

Academic concession: Missing a midterm, or handing in a homework after the deadline, will result in a mark of 0. Exceptions may be granted in two cases: prior consent of the instructor, or a **documented** medical reason. Your course mark will then be based on your remaining coursework.

Additional links and resources:

- Please read the UBC policy on Student Conduct and Discipline.
- Mathematics Learning Centre: The Math Department runs a drop-in tutorial centre for undergraduate Math courses, staffed by Graduate Teaching Assistants. This centre is located in Rooms 300, 301, and 302 in the Leonard S. Klinck (LSK) Building, and is open Monday through Friday, 9:00am to 7:00pm. Check the website above for any changes to hours and announcements. All tutors provide assistance with first- and second-year calculus and linear algebra and will attempt to help with any undergraduate Math course. In addition to regular assistance, the MLC offers Quick Help for students who are looking for fast support for minor snags. There is no charge for the services MLC provides.
- Past final exam database
- UBC Math Club, located in Math Annex 1119, sells math exam packages (old exams together with solution sets) for a nominal price before each final exam session.

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