

MATH 1230, Differential Calculus
Fall 2018

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Office Hours: Mondays 1:30 – 2:30 and Tuesdays 2:30 – 3:30, or by appointment

Textbook: Robert Adams, Calculus: a complete course (9th edition)

This course is intended for students in mathematically reach disciplines. Even though the topics covered might coincide with some other courses such as, for example, MATH 1500, the emphasis in this course will be on the theory and on rigorous mathematical thinking and writing. The students will be expected to learn how to read and write proofs, including epsilon-delta justifications.

Approximate Course Outline:

| Topics | Sections from Adams |
|--|----------------------------|
| Preliminaries (review) | P1 to P7 |
| Limits and Continuity | 1.1 to 1.5 |
| Differentiation | 2.1 to 2.10 |
| Inverse functions | 3.1 to 3.3, 3.5 |
| Application of differentiation | 4.1 to 4.6, 4.8, 4.10 |
| Sequences and series (if time permits) | 9.1 to 9.4 |

The order of the topics may differ from the one in the textbook.

Calculation of the Final Grade:

Quizzes (8%):

There will be three short tutorial quizzes (tentative dates: Sept. 21, Oct. 12, Nov. 9). Each quiz is worth 4%, and the best two out of the three will be counted for a total of 8% of the final grade. (No make up quizzes are allowed for any reason.)

Assignments (12%):

There will be three assignments (tentative weeks of: Sept. 23, Oct. 14, Nov. 18). You will have one week to work on the assignment and submit it for marking. Each assignment is worth 4% of your final grade, for a total of 12%. (Late assignments receive a grade 0.)

Test (30%):

A 2h midterm test will be done out of class in late October for 30% of your final grade.

The actual date and place will be announced later.

The December **final examination** will be worth **50%** of the final grade.

The first tutorial is the week of September 10.

No classes or labs during the **Term Break** November 13 to 16, 2018.

The **Voluntary Withdrawal** deadline is November 19, 2018.

Grading: The following is the grading table which may be adjusted downwards:

| Letter grade | Minimum percentage to guarantee | Grade Point |
|--------------|---------------------------------|-------------|
| A + | 95 | 4.5 |
| A | 85 | 4.0 |
| B + | 79 | 3.5 |
| B | 72 | 3.0 |
| C + | 66 | 2.5 |
| C | 60 | 2.0 |
| D | 50 | 1.0 |

Academic integrity:

The Department of Mathematics, the Faculty of Science and the University of Manitoba regard acts of academic dishonesty in quizzes, tests, examinations or assignments as serious offenses and may assess a variety of penalties depending on the nature of the offense.

Acts of academic dishonesty include bringing unauthorized materials into a test or exam, copying from another student, plagiarism and examination personation. Students are advised to read section 7 (Academic Integrity) and section 4.2.8 (Examinations: Personations) in the "General Academic Regulations and Requirements" of the current Undergraduate Calendar.

Note, in particular that cell phones and pagers are explicitly listed as unauthorized materials, and hence may not be present during tests or examinations.

Penalties for violation include being assigned a grade of zero on a test or assignment, being assigned a grade of "F" in a course, compulsory withdrawal from a course or program, suspension from a course/program/faculty or even expulsion from the University. For specific details about the nature of penalties that may be assessed upon conviction of an act of academic dishonesty, students are referred to University Policy 1202 (*Student Discipline Bylaw*) and to the Department of Mathematics policy concerning minimum penalties for acts of academic dishonesty.

The *Student Discipline Bylaw* is printed in its entirety in the Student Guide, and is also available on-line or through the Office of the University Secretary. Minimum penalties assessed by the Department of Mathematics for acts of academic dishonesty are available on the Department of Mathematics web-page.

All Faculty members (and their teaching assistants) have been instructed to be vigilant and report incidents of academic dishonesty to the Head of the Department.