

MATH 200: Calculus III - Fall 2014

Textbook *Multivariable Calculus* by J. Stewart, 7th Edition (which is included in *Calculus* 7th Edition by J. Stewart). Older editions of the textbook should be fine, though be aware that there are slight content differences, the chapter numbering might be off by one, and the exercises are different.

Syllabus This course is an introduction to calculus of several variables. The course will cover Chapters 12 (Vectors and the Geometry of Space), 14 (Partial Derivatives), 15 (Multiple Integrals) of the textbook. See next page for more details.

Exams and Grades

| | |
|---|-----|
| WeBWorK - Online Homework | 10% |
| Midterm 1 (Tuesday, September 30, 6:30-8PM) | 20% |
| Midterm 2 (Tuesday, November 4, 6:30-8PM) | 20% |
| Final Exam | 50% |

- WeBWorK online homework will be assigned weekly, due on Fridays at 5:00PM. There will be no extensions. The first homework is due Friday September 12.
- There will be two common **midterms** on **Tuesday, September 30, 6:30-8PM** and **Tuesday, November 4, 6:30-8PM**. Make note of these times, and do not schedule anything else at these times.
- There will be a common 2.5 hour final exam in the December examination period.

Course Policies

- Grades may be scaled if necessary, to ensure fairness.
- Missing a homework or midterm normally results in a mark of 0. Exceptions may be granted in two cases: prior consent of the instructor or a medical emergency. In the latter case, the instructor must be notified within 48 hours of a missed midterm or homework, and presented with a physician's note within 7 days. Failure to comply with these time limits will result in a mark of 0. A physician's note should specifically state that the student was medically unfit to write the missed midterm on that day. Absence of this exact information will result in a mark of 0.

If a student misses a midterm for a legitimate, well documented reason, then a make-up midterm may be scheduled, or, the remaining midterm and the final exam may be given more weight in the grading scheme for that student. There will be no makeup homework or homework extensions. If a student misses a homework with a valid reason, that assignment will be dropped.

- No books, notes, formula sheets, calculators or other electronic devices are permitted for use during the midterms or final exam.
- Students must bring their UBC ID to all exams.

Drop-in help for Math 200: In addition to the office hours of your instructor, please take advantage of the free DROP-IN HELP for Math 200 at the Math Learning Centre (MLC): <http://www.math.ubc.ca/Ugrad/ugradTutorials.shtml>

MATH 200 Syllabus

1. Vectors and the Geometry of Space (~ 2.5 weeks)

| Section | Description |
|---------|--------------------------------------|
| 12.1 | Three-dimensional coordinate systems |
| 12.2 | Vectors |
| 12.3 | The dot product |
| 12.4 | The cross product |
| 12.5 | Equations of lines and planes |
| 12.6 | Cylinders and quadratic surfaces |

2. Partial Derivatives (~ 5 weeks)

| Section | Description |
|---------|---|
| 14.1 | Functions of several variables |
| 14.3 | Partial derivatives |
| 14.4 | Tangent planes and linear approximations |
| 14.5 | The chain rule |
| 14.6 | Directional derivatives and the gradient vector |
| 14.7 | Maximum and minimum values |
| 14.8 | Lagrange multipliers |

3. Multiple Integrals (~ 5 weeks)

| Section | Description |
|---------|---|
| 15.1 | Double integrals over rectangles |
| 15.2 | Iterated integrals |
| 15.3 | Double integrals over general regions |
| 15.4 | Double integrals in polar coordinates |
| 15.5 | Applications of double integrals |
| 15.7 | Triple integrals |
| 15.8 | Triple integrals in cylindrical coordinates |
| 15.9 | Triple integrals in spherical coordinates |