

Math 32B, Lecture 4: Calculus of Several Variables

Instructor: Kristen Hendricks

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Office Hours: M 11-12, W 2-3. There will also be additional office hours posted immediately preceding exams.

This class has three TAs, Ben Bellis, A. David Boozer, and Qianchang Wang. Their e-mail and office hours can be found on [ccle](#).

Course Webpage: www.math.ucla.edu/~hendricks/Math32B.html . Most course materials will also appear on [ccle](#). We will use the myUCLA gradebook facility to record grades throughout the quarter.

Location and Time: MWF 9-9:50, MS 4000A. There are six sections, meeting Tuesdays and Thursdays, see times and places online.

Content: This is a standard course in integration in multiple variables. We will cover integration over regions in the plane and in three-space, in both Cartesian and polar/spherical coordinates. We will then study vector fields and integration over curves and surfaces. The last third of the course will be devoted to Green's Theorem, Stokes' Theorem, and the Divergence Theorem, each of which relates an integral over some domain to another integral over the boundary of the domain.

Textbook: J. Rogawski and C. Adams, *Multivariable Calculus*, 3rd edition.

Prerequisites: 31B and 32A with a grade of C- or better (or equivalent).

Homework & Quizzes: Homework will be assigned weekly and not collected. Instead, there will be a quiz in section every week (excluding the first) consisting of two problems from the previous week's homework. The first quiz will be on 1/12 for the Tuesday sections and 1/14 for the Thursday sections. You must take the quizzes with your assigned section. No make-up quizzes will be given, but to allow for one illness or other legitimate conflict, your lowest quiz score will be dropped in computing your grade.

This is probably the most demanding lower division mathematics class offered by UCLA. Do not allow yourself to fall behind on the homework.

Exams: There will be two in-class midterms on **Monday, January 25** and **Monday, February 22**. There will also be a final exam **Wednesday, March 16, 3 p.m – 6 p.m**. Alternate testing arrangements will be made only in the following circumstances: religious holidays, participation in university athletics, and serious and documented illness or emergency on the day of the test. Please note that, as a matter of university policy, an undocumented absence from the final exam will automatically result in a failing grade for the course.

This course is 26 lectures long, excluding exams. Midterm 1 will cover approximately the material of Lectures 1-7. Midterm 2 will cover approximately the material of Lectures 8-17. Approximately sixty percent of the final will cover the material of Lectures 18-26, and approximately forty percent will cover previously-tested material.

Exams will take place in multiple rooms. The class will be divided up alphabetically by family name and told (either in lecture or by e-mail) in which room to take the test. Please pay close attention to these announcements; exams taken in the wrong room will not be graded.

Regrades: Requests for regrades of quizzes and midterms will be considered up to fourteen days after the quiz or midterm is returned, and should be turned in to me in writing (preferably typed) and signed. Please make sure to look over your graded work carefully before the time limit passes.

Grading: Your grade will be computed as follows:

$$(10\% \text{ Quiz grades}) + (25\% \text{ Midterm 1}) + (25\% \text{ Midterm 2}) + (40\% \text{ Final Exam})$$

Letter grades will not be assigned until the end of the quarter, at which point your composite numerical score will be converted into a letter grade based on class ranking, using the department guidelines for this course. Approximately 30% of the class will receive grades in the A/A- range, and approximately 35-40% of the class will receive grades in the B+/B/B- range (unless something very surprising happens).

Enrollment: On the Friday of Week 2, students on the waitlist will be enrolled in the course. All other enrollment requests should be addressed to the Mathematics Department Undergraduate Advising Office. You can find them in MS 6356, or contact them at ugrad@math.ucla.edu. They will try to help if you are having scheduling trouble.

Questions and Getting Help: For mathematical questions, you are encouraged to come to my or your TA's office hours. You may also find the Student Math Center in MS 3974 helpful. Their hours are here: <http://www.math.ucla.edu/ugrad/smc>.

Because this is a very large course, if you have a logistical question, the best thing to do is to check the syllabus/website, then e-mail or talk to your TA, and then get in contact with me if you still have questions. This helps ensure that at such time as you have an issue that really needs to be dealt with by me, I'll have the attention and time to handle it for you.

Schedule: We will approximately follow the standard outline for this course, available at <http://www.math.ucla.edu/ugrad/courses/math/32B>. Specific reading will be assigned for each lecture.

Final Scheduling Note: Unfortunately, it is currently the case that the research side of my job requires that I travel frequently and on relatively short notice. Several lectures in this course will be given by other professors. Naturally, I will make every effort will be made to ensure that you have adequate access to me, and to advertise my timing as clearly as possible. (The advantages to having active researchers teach your classes are presumably obvious – this sort of thing, I fear, is one of the disadvantages.)