

Math 31B: Integration and Infinite Series

Instructor: Kristen Hendricks

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Office Hours: M 12:30-2:00, W 1:00-2:30

Priority will be given to students from this class during Monday's office hours.

This class has three TAs, Josie Bailey, Joseph Hughes, and Dimitrios Ntalampekos. Their e-mail and office hours can be found on the course webpage.

Course Webpage: www.math.ucla.edu/~hendricks/Math31b.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 11-11:50, Franz 1178. There are six sections, meeting Tuesdays and Thursdays, see times and places online.

Content: This is the second quarter of a standard course in calculus. In this course we will cover transcendental functions, methods and applications of integration, and infinite sequences and series.

Textbook: J. Rogawski, *Single Variable Calculus, (2nd Edition)*, W.H. Freeman & Company, 2012. Please make sure you have the correct edition, as the exercises differ between editions.

Prerequisites: Math 31A with a grade of C- or better.

Homework & Quizzes: Homework will be assigned weekly and not collected. Instead, there will be a quiz in section every week (excluding the first week) consisting of one problem taken directly from the homework. No make-up quizzes will be given, but your lowest quiz score will be dropped in computing your grade.

Exams: There will be two in-class midterms, tentatively scheduled for **Monday, January 27** and **Monday, February 24**. There will also be a final exam **Wednesday March 19, 3:00 p.m.-6:00 p.m.** Make-up exams should generally not be needed given the grading system, and will only be given in cases of documented illness or family emergency, or religious holidays. Please note that the university requires that a student who does not attend the final exam and does not have a documented explanation for the absence be given a failing grade in the course.

Regrades: Requests for regrades of quizzes and midterms will be considered up to fourteen days after the quiz or midterm is returned. Please make sure to look over your graded work carefully before the time limit passes.

Grading: Your grade will be based on one of the following, whichever is higher:

- Quizzes: 10%, Midterms 1 & 2: 25% each, Final: 40%
- Quizzes: 10%, Highest Midterm: 30%, Final: 60%

The resulting numerical grade will be converted into a letter grade based on class ranking, using the department guidelines for the distribution of grades in this class.

Enrollment: 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 outline at <http://www.math.ucla.edu/ugrad/courses/math/31B> . Below is a projected course schedule with dates for your convenience; we may diverge from it slightly depending on how long various topics take.

Week	Sections	Topics
1/6-1/10	7.1-3	Introduction, Derivative of Exponential Functions, Inverse Functions, Logarithms and their Derivatives.
1/13-1/17	7.4-7	Exponential Growth and Decay, Compound Interest, Models involving $y'=k(y-b)$, L'Hospital's Rule.
1/22-1/24	8.1-3	Integration by Parts, Trigonometric Substitution. [No class on Monday 1/20.]
1/27-1/31	8.5-6	Midterm 1, Partial Fractions, Improper Integrals.
2/3-2/7	8.8, 9.1	Numerical Integration, Error Bounds, Arc Length.
2/10-2/14	9.3, 9.4	Fluid Pressure and Force, Taylor Polynomials, Taylor's Theorem and Error Bounds.
2/19-2/21	11.1-2	Sequences and Infinite Series. [No class on Monday 2/17.]
2/24-2/28	11.2-4	Midterm 2, Infinite Series Cont., Absolute Convergence.
3/3-3/7	11.5-6	Conditional Convergence, Ratio and Root Tests, Intro to Power Series.
3/10-3/14	11.6-7	Taylor Series, Review of Course.