

Class Meetings: Mondays, Wednesdays, and Fridays 1:25–2:15 PM, in Ekeley E1B75

Instructor: Eric Stade (email: eric.stade@colorado.edu)

Office Hours: Mondays 11–12 AM and Tuesdays 3–4 PM, in Math 305

Prerequisites: Either MATH 2001 or MATH 2002, *and* either MATH 2130 or MATH 3130 or MATH 2135 or MATH 3135, all with a minimum grade of C-

Course Canvas page: <https://canvas.colorado.edu/courses/139725>

Required Text: *Analysis with an Introduction to Proof*, Sixth edition, by Stephen R. Lay and Richard G. Ligo

This text is accessible online through our Canvas page. If you prefer a hard copy, these are available at the CU Bookstore, on Amazon, etc.

Additional (optional) reading: *Book of Proof* by Richard Hammack, available on our Canvas page, or for free at <https://richardhammack.github.io/BookOfProof/>.

In addition, **lecture notes** will be posted online, AFTER the class in which they are delivered. There are no guarantees as to how soon after class they will appear; it could be as much as a week later. But I will have all notes relevant to any given exam posted early enough that you can review them for that exam.

You should still come to class! Think of the posted lecture notes as a way of reviewing what you have learned in class. But you will miss a lot (not only in terms of points—see “Requirements and grades” below) if you skip class and rely only on the text and the posted lecture notes to learn the material. Learning is an active experience, and while reading is important (and any assigned reading is critical to the course), all by itself it’s a somewhat passive way of learning.

Mathematics Academic Resource Center, also known as “The MARC.” You may seek assistance with your math questions at the Mathematics Academic Resource Center, in Math 175. Hours and other details may be found at <https://math.colorado.edu/marc/>.

About the course. You probably remember encountering *limits*, and the notion of *convergence*, in your Calculus and other math (or even non-math) courses (and in your actual real life)! These ideas are central to mathematics, not to mention philosophy, metaphysics, art, literature, etc.

In this course, we’ll explore these notions in depth. It’s a math course (silly!), so we’ll focus on the math, but will make occasional diversions into other areas where the concepts of limit and convergence are relevant.

We will work through much of the first six chapters of the course text *Analysis with an Introduction to Proof*, as well as parts of Chapters 7–9 as time permits. Other sources will be provided when and if necessary.

Requirements and grades. Your grade in this course will be computed on the basis of:

(a) Exams (75% of your final grade).

You will have three **in-class midterm exams**, on the following **Wednesdays**:

September 16, October 14, and November 11.

You may **drop** your lowest midterm score. Each of your other two midterm scores will count towards **25%** of your final grade.

You will also have an **in-class final exam** on

Thursday, December 10, 1:30–4 PM,

in this classroom. Your final exam score cannot be dropped. It will count towards **25%** of your final grade.

(b) Homework (0% of your final grade). Homework, along with readings from your text and/or from supplemental notes, will be assigned roughly every week. **This homework will not be collected or graded** (with the exception of the “Writing assignments;” see item **(c)** below). However, *large parts of your midterm exams and your final will be based on the homework*. Some exam problems may be identical to homework problems; some may be identical except for some numbers changed; some may simply be very similar to homework problems. (Some part of each exam may look different from the homework. But of course, all exam problems will involve material covered in class or in assigned readings.)

(c) Writing assignments (10% of your final grade). Clear expression of mathematical ideas is an important part learning and doing mathematics. To this end, on

Wednesday, September 30, Wednesday, October 28, and Monday, November 30,

you will turn in a *written assignment*, which will consist partly of several exercises taken from your weekly homework up to that point (see item **(b)** above), and partly of additional problems not taken from the homework.

The lowest of your three writing assignment scores will be dropped.

(d) In-class group work (10% of your final grade). On selected Fridays, and on occasional other days of the week, there will be an activity to be completed in class, in small groups. Some of these activities may take the entire period; some may only take 20 minutes or so.

Sometimes these activities will be collected and graded. Sometimes they won’t, in which case you’ll get full credit for an activity as long as your group has completed the activity correctly by the end of the period, and you have shown up and participated actively in your group’s discussions.

Activities cannot be made up. However, you may miss **up to two** activities without penalty.

PLEASE SHOW UP ON TIME for activities. It’s a disservice to your group if they have to start without you. You will lose credit on an activity if you are late.

(e) Canvas discussions (2% of your final grade). On our Canvas page, there is a “Topics in Analysis” discussion that you will be asked to participate in every other week or so. If you make meaningful, thoughtful posts to this discussion each week, you will get the full five points for the semester.

Postings to “Topics in Analysis” for a given week are due by 10 PM on the Sunday at the end of that week. You may miss **one post** without penalty.

(f) Participation and attendance (3% of your final grade). Please come to class, on time, and be attentive and engaged. I will take attendance on occasional, random days, and will take note of repeated absence or lateness. If you’re frequently absent or late, your grade in this category will suffer. Points will also be deducted if you are physically, but not mentally, present, e.g. spending the class period on social media and whatnot. You will get the full three points for

regular attendance and participation over the course of the semester.

Please see the “ADDITIONAL IMPORTANT COURSE INFORMATION” header on our Canvas home page, for:

- Guidelines for written assignments. Please read and follow these guidelines for written work, such as exams and discussion posts. You will lose points on written work if you stray too far from these guidelines!!
- Other general information, concerning: classroom behavior; requirements for infectious diseases; accommodation for disabilities, temporary medical conditions, and medical isolation; preferred student names and pronouns; the CU Honor Code; sexual misconduct, discrimination, harassment and/or related retaliation; religious holidays; and mental health and wellness.