

Class Meetings: Monday, Wednesday, Friday 2:00–2:50 PM, in MUEN E064

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

Office Hours: Wednesday 3–3:50 PM and Friday 1–1:50 PM, in MCDB A152.

Prerequisites. MATH 1300 or MATH 1310 or APPM 1345 or APPM 1350 (minimum grade C-).

Course web page. Please see

<http://math.colorado.edu/~stade/Discrete/discrete.html>

for homework assignments and other stuff relevant to the course.

Text. *The Book of Proof* (a.k.a. “T-BOP”), by Richard Hammack

This text is available online, for FREE. You can access it from our course page, or go directly to

<http://www.people.vcu.edu/~rhammack/BookOfProof/>

Course notes. *Stuff about Proof and Other Phenomena* (a.k.a. “S-POP”), available on our course page cited above.

Undergraduate Mathematics Resource Center (also known as “The Center”). You may seek assistance with your math questions at the Undergraduate Mathematics Resource Center, which will be open (on school days only) Monday–Thursday 9 AM–5 PM, and Friday 9 AM–2 PM in Math 175.

About the course. The main purpose of this course is to help develop your mathematical reasoning and communication abilities. Central to each of these missions is the careful use of language, by which we mean both carefully defined mathematical terms and ordinary expressions and sentences.

One of the principal forms of mathematical communication is the *proof*. In this course you will learn how to write mathematical proofs for the audience consisting of yourself, me, and you classmates. For some proofs you will need to provide quite a few details, while for others you can be brief. What is essential is that your proofs be clear, complete, concise, and correct.

Requirements and grades. Think of this course as consisting of a number of *modules*. Each module corresponds to a week of classes. Each week (except for the first, which may be a bit different due to our not having met before) will go roughly like this:

- You will arrive in class, all happy and eager to learn, on **Monday**, and will hand in a 3×5 *index card* summarizing the reading you were assigned over the weekend. **5%** of your course grade will be based on the cards you hand in. Your lowest two index card scores will be dropped.
- **Monday** and **Wednesday** classes will entail a mix of *lecture* and *active learning*, in the form of *individual and/or group work*. This active learning work could involve open classroom discussion; worksheets that you do together with small groups of classmates; individual or group presentations at the board; fun, silly games; etc. Your participation in active classroom learning will constitute **20%** of your course grade. (I will post a *formative participation grade* for you on D2L at least a couple of times during the semester, so you have some idea how you’re doing.)
- You will be assigned *homework* on **Monday**. Homework will not be collected. But:
- The material we cover, through **Monday** and **Wednesday** lecture and active learning, will relate to your homework assignment. It’s conceivable that your active learning will entail problems directly from the homework.

- On **Friday**, we will have a *quiz* covering the material from the homework assigned that preceding **Monday**, and that we discussed earlier in the week on that **Monday** and **Wednesday**. Your quiz grades will constitute **15%** of your course grade. (If there are questions, we can spend some time before the quiz on Friday discussing the material. Also, if there's time, we'll go over the quiz right after its done.) Your lowest two quiz card scores will be dropped.

In addition to the above weekly work, there will be a *take-home midterm* (due date to be announced), worth **20%** of your course grade, and a *two-part final*, the first part being a take-home exam due the last day of classes, and the second being an in-class exam during our regularly scheduled final period, which is **Sunday December 13, 4:30–7 PM**. Each of these two parts will constitute **20%** of your course grade.

On your take-home exams (midterm and final), you will be asked to supply (a) proofs of some of the homework problems, and similar problems, and (b) short lists of mathematical “shoulds” and “shouldn’ts.” (See Part B of the class notes entitled *Stuff about Proofs and Other Phenomena* (“S-POP”).) More details on your take-home exams will be given in class.

The in-class final exam will be a lot like the quizzes (only longer). In fact, you can expect to see some of the quiz problems show up verbatim (or nearly so) on the final.

Now hear this. You need to come to class!! You have index cards due on Mondays, active learning on Mondays and Wednesdays, and quizzes on Fridays. I will drop the lowest two index card scores and the lowest two quiz scores, and will let you slide for missing a couple of active learning sessions, but in general, this is a class in which attendance is important and very much expected.

Other important course information. Please see our course web page for important policy information regarding disabilities, religious holidays, classroom behavior, discrimination and harassment, and the CU Honor Code.