

General Info

Instructor: Professor David Grant, grant@colorado.edu

Office Hours: M 4:00–4:50, W 11:00–11:50, F 1:00–1:50 (or by appointment), in Math 266.

Class Meetings: MWF 3–3:50 PM in MUEN E417.

Text: MATHEMATICS: A Discrete Introduction (Third Edition), Brooks/Cole 2013, by Edward Scheinerman.

The book is excellent and has been very popular with students, and you'll have to read sections we cover BEFORE THE CLASS ON THAT SECTION.

Prerequisite.

MATH 1300 (Calculus I or equivalent.)

About the course.

The title indicates that this will be a course in Discrete Mathematics, and indeed it will be. In fact, chapters 1-5 in the book cover the basic objects of discrete (and other) mathematics: sets, relations, and functions, and chapters 6 and 7 (which we'll also cover), provide a wonderful introduction to discrete probability and number theory, two of the cornerstones of discrete mathematics, which are both beautiful and useful.

But that's not really the point of the course, no more than the point of cross-country skiing is to get from point A to point B. The point is HOW you get there, and how to have fun and good exercise at the same time.

Most of you have been studying mathematics your whole life, but have yet to learn how to do mathematics the way mathematicians do. As such, this course is really the keystone to all your future study of mathematics.

What mathematicians do can be summed up in three phrases: find patterns, make conjectures, and proof things. All three take some doing, but it's the last one which is a sticking point for many students. We'll investigate what "proof is," and why people do it. (It's how we make sure things are actually true in mathematics, so is central to its study and learning.) Most importantly, you will learn how to prove things yourself, which will give you the power to determine on your own what is true or not. This will take lots of practice, and lots of hard work, but I have no doubt you will feel greatly rewarded for the effort.

Course requirements and grading.

This course will meet three days a week. Classroom time will partially consist of lecture, but for the majority of the time, students will work in groups on problems (or present results at the board). Homework will be assigned weekly, and will typically be due the following Wednesday. There will be two hour exams during our regular class time and in our usual room. The first will be on Wednesday, September 24th and the second will be on Wednesday, October 29th. There will be a final exam in our regular classroom on Thursday, December 18th, from 7:30 p.m. till 10 p.m. Your final grade in this course

will be determined by your total score out of 500 possible points. These points are broken down as follows: Homeworks count for a total of 100 points, the two hour exams will each be worth 100 points, and the final exam will make up the remaining 200 points. The final will, unlike the hour exams, be cumulative, with an emphasis on the material covered after the second exam. You can work together on homeworks (indeed, I encourage you to), but, in keeping with standards of academic integrity, you must clearly state from whom you received your ideas. There will also be optional written projects, which we'll talk more about after the first exam.

Et Cetera:

The last day to drop a course without fee or a "W" on your transcript is Sept. 10. Also note that the last day to drop a course without special approvals is Oct. 31.

Please inform me as soon as possible should you need, due to your observance of a religious holiday, to miss an exam, homework, or class. Provided you notify me well in advance, every effort will be made to reach a reasonable accommodation.

If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. See www.Colorado.EDU/disabilityservices.

The University has an honor code, see <http://honorcode.colorado.edu>. I will expect each student to affix the pledge of the honor code to each exam.

The University of Colorado at Boulder policy on Discrimination and Harassment, the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships apply to all students, staff and faculty.

See <http://www.colorado.edu/odh>.

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. See policies at <http://www.colorado.edu/policies/classbehavior.html> and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html/# student_code