

Lectures: MWF 1:30–2:20
MEB 245

Instructor: Jack Lee
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Course Web site: www.math.washington.edu/~lee/Courses/300-2011/
(or from the Math Department home page,
Class Web Pages → Math 300C)

Required Textbook:

- Daniel J. Velleman, *How To Prove It* (second edition), Cambridge University Press, 2006.

General description:

The goal of this course is to help you learn what mathematical proofs are, how to (start to) think like a mathematician, and how to communicate effectively about mathematical ideas. This course will probably be unlike any other math course you've taken. Most of your courses so far have concentrated on helping you learn algorithms for solving particular types of problems; most courses after this one will focus instead on deep conceptual understanding and deductive reasoning. This course is supposed to be the “bridge” between the two ways of approaching mathematics. It will give you tools for thinking mathematically, reading critically and with understanding, solving conceptual problems, and writing mathematical proofs. You will probably use these tools in every math course you take from now on (and potentially in many other courses as well!).

Registration Information:

All sections of Math 300 have been filled for several weeks, and I won't be allowing overloads. But don't give up hope: it's likely that a few spaces will open up during the first two weeks of classes. At the first class, those who are hoping to enroll will have a chance to sign up for a waiting list; if spaces open up I'll give out entry codes only to students on the list who have attended all classes and done all the assigned work, with priority going to math majors. Meanwhile, if you need Math 300 to graduate, you should talk with the math advising office about alternative plans.

Requirements

Classes: Class attendance is required. In addition to providing lectures, discussions, and examples designed to clarify the reading and prepare you for the homework, I'll also be introducing some new concepts in class that are not covered in the textbook or the handouts. Although I mostly

won't keep official attendance records, missing classes unnecessarily will dramatically reduce your chances of doing well in the course. If you must miss a class for some unavoidable reason, you should find someone who takes careful and complete notes, and arrange to get a copy of them.

Reading: After most classes, I'll assign part of the textbook for you to read, usually about the material that will be discussed in the next one or two lectures. There will also be a few handouts to read during the quarter. All reading assignments are required.

Homework Assignments: After most classes, I'll also assign a written homework assignment to turn in for a grade. Assignments will be posted on the class website (and linked on the blog), and generally will be due the following Wednesday. These assignments are the heart of the course. Most of them will take some time to think about, so I caution you against putting them off until the evening before they're due. Late homework will not be accepted except in extraordinary circumstances and with advance permission. More details about the homework assignments will be given in an upcoming handout.

Exams: There will be a 50-minute midterm and a 110-minute final. Both will be closed-book, closed-notes. You may not take exams other than at the scheduled times except for emergency or religious reasons. If you need to make special arrangements due to religious commitments, submit a written or email request to me at least two weeks before the exam. If you are unable to take an exam for medical reasons, contact me before the exam or as soon as medically possible thereafter, and you'll need to provide a written medical excuse.

Math 300 Blog: I've set up a *Math 300 blog*, linked from the class web page, where I will post announcements, brief lecture summaries, reading assignments, homework assignments, questions for discussion, and other comments about the course. As soon as possible, you should go to the blog page, click on "Profile," then "Notifications," and set your notification preferences to "Immediate." That way you'll get an email notification whenever something new (such as a homework assignment or an important announcement) is posted on the blog. At any time, you're welcome to post comments, questions, or replies to other people's questions on the blog. If you wish to write about specific homework problems, please confine your comments to general questions and suggestions about how to get started.

Grading: Your course grade will be based on a weighted average of the following scores:

- homework (30%)
- midterm (30%)
- final exam (40%)