

SPRING 2009 MATH 3200 COURSE SYLLABUS

PETE L. CLARK

Course: Math 3200: Introduction to Higher Mathematics
Instructor: (Assistant Professor) Pete L. Clark, Ph.D.
Lectures: MWF 1:25 - 2:15, Boyd 302
My Office: Boyd 502
Office Hours: TuTh 11 am - noon, and by appointment

Course text: *Mathematical Proofs: A Transition to Advanced Mathematics* by Gary Chartrand, Albert D. Polimeni and Ping Zhang, 2nd edition. The text is required, for instance because most of the homework problems will be assigned out of it.

Topics Covered: We wish to cover the first 10 chapters of the course text, which can roughly be grouped into three parts:

Part I: Languages of mathematics: English, sets, logic. (Chapters 0, 1 and 2)

Part II: Techniques of proof (Chapters 3-7)

Part III: Further foundations for advanced mathematics: equivalence relations, functions, cardinalities of sets (Chapters 8-10)

If we end up with time left at the end, we will probably look at Chapter 13: Proofs in Group Theory, but I am not aiming to finish early. This is the sort of course in which it is much more important to thoroughly learn a small set of topics rather than to see a little bit of many different things.

Course grade:

3 midterm exams, for a total of 50%
homework, 25%
final exam, 25%

Here are some tentative approximate times for the three midterm exams:

First midterm exam: Covers Chapters 1-3, circa February 15

Second midterm exam: Covers Chapters 4-7, circa March 20

Third midterm exam: Covers Chapters 8-10, circa April 25

Technically speaking the midterms will be *cumulative*, in the sense that you will

always be responsible for previously learned material. (Mathematics is almost inevitably cumulative). But you can expect an emphasis on the most recent material covered, as indicated above. The final exam will be comprehensive.

More on homework:

When we start a chapter, I will tell you which homework problems at the end of that chapter I want you to work on. This may be a rather large list (e.g. it will probably be more than half of them). Then, sooner before the homework is due, I will give you a smaller list of problems to turn in. These will be graded by the course grader, Ben Connell.

Also, in most weeks there will be a very small number of problems – say, one or two – which I will grade myself. These problems give you an opportunity to practice your writing and language skills even more intensely. Accordingly, I require that these problems be **typed**. The best thing for you in the long run would be to use the mathematical typesetting program LaTeX (freely available in many forms on the internet), which however takes some time to get used to. I would be more than happy to show you how to set up LaTeX on your computer and demonstrate how it works.

You are encouraged to discuss the homework problems with other students in the course. Learning to explain clearly your own reasoning and understand the reasoning of others are closely related to the goals of our course. However, you should make sure that your written work is your own and is independent of that of other students. A good rule of thumb is to talk about your work with others, write on the blackboard, and take notes from these discussions as needed, but not to look directly at the writeups of the other students.

Academic honesty: All students are encouraged to become familiar with the University's policy on academic honesty, which is our basic standard of content. See <http://www.uga.edu/honesty/>

This course syllabus is a general plan. Deviations may be necessary.