

FALL 2009 MATH 3200 COURSE SYLLABUS

PETE L. CLARK

Course: Math 3200: Introduction to Higher Mathematics
Instructor: Prof. Pete L. Clark, Ph.D.
Lectures: TuTh 11:00am - 12:15pm
My Office: Boyd 502
Office Hours: TuTh 2:00pm - 3:00pm, 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)

Last time I taught the course, we did not in fact cover Chapter 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%

The three midterm exams will be announced in class, at least ten days in advance. Last semester, the first midterm occurred after we covered Chapters 1-3, the second midterm occurred after we covered Chapters 4-7, and the final midterm was at the end of the semester. I expect things will be roughly similar this semester. In particular, the first midterm exam should occur in the second half of September, the second in late October or early November, and the last in December.

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, Cindy Han.

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.

The Mandatorium: I have been informed that **all UGA course syllabi** must contain the following paragraphs:

As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, A Culture of Honesty, and the Student Honor Code. All academic work must meet the standards described in A Culture of Honesty found at: www.uga.edu/honesty. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.