

MATH 310 - SPRING 2010

Instructor: Kate Truman

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Office: Math 1113

Office Hours: 9:30-10:00 MWF

Course Web Page: <http://www.math.umd.edu/~rendke/Math310/>

The webpage is the definitive source for up to date information about the class.

Classroom and Time: Math0405 MWF 10:00-10:50

Text: *Mathematical Proofs* by Chartrand, Polimeni and Zhang, 2nd edition

Recommended: *Advanced Calculus* by Fitzpatrick, 2nd edition, Thomson Brooks/Cole

Prerequisite: Math141

Corequisite: Math241 Please note that Math240 is also a prerequisite for Math410.

Math310 is designed to be a lead in course to Math410 (Advanced Calculus). The goal is to introduce you to introductory theory material and review some calculus with proof, so that you will be able to succeed in Math410. The majority of the course will be spent on introducing the theory of mathematics. You will learn different methods of proof and how to apply each technique to different situations. This course should not only prepare you for Math410, but also prepare you to study theoretical mathematics in any area. Approximately one third of the course will be spent reviewing some introductory calculus material with proof. We will discuss sequences and continuity in more detail as well. We will also spend time gaining a deeper understanding of the real numbers as a field.

Grading:

Five in-class Exams (75 pts each)	375 points
Weekly Homework (20 pts each)	220 points
Weekly Quizzes (15 pts each)	180 points
Final Exam	150 points
Total	925 points

Make-up exam policy: Exam makeups will only be given for University Excused Absences. Any student with a valid reason to be excused from an exam must contact me prior to the exam, either by email or by phone (leave a message at 301.405.5047), and present documentation at the next class session attended. If you need to be excused for a religious observance, you should let me know as soon as possible, but in any case no later than the end of the schedule adjustment period.

Homework: I *encourage* you to work in groups on the homework assignments. Homework will be assigned daily, and collected each Friday (unless there is an exam on Friday then homework is due Wednesday). Exam and Quiz questions will be similar if not identical to homework questions. Quizzes will be on Mondays (on the homework due the previous Friday) and days before exams (on all material since the last exam). I expect to assign somewhere between 6 and 12 problems each day, but I will only collect about 6 problems at a time. All odd numbered questions have answers/solutions in the back, therefore I will not collect odd problems - only even and extra problems. Other than that, I will not specify in advance which problems will be collected. For this reason each problem must be done on a separate page (or partial page) and you must include your name on each page (or partial page). Late homework will not be accepted, except in extreme cases. Even though I will not collect odd problems, I will expect that you understand them for quizzes and exams. So, you should only look at the solutions if you are really stuck and try to only look as far into the solution as you need.

Rough Schedule: We will cover Chapters 0 through 10 and 12 of Chartrand, Polimeni and Zhang, as well as parts of Chapters 1, 2 and 3 of Fitzpatrick.

- Exam 1: Chapters 0–3
- Exam 2: Chapters 4–6, Pigeon Hole Principle
- Exam 3: Chapters 7–10
- Exam 4: 12.1 of Chartrand and Chapters 1–2 of Fitzpatrick
- Exam 5: Chapters 2–3 Fitzpatrick, 12.5 Chartrand

The tentative date for Exam 1 is February 12, 2010.

Homework 1 is due Friday, January, 29th, and there will be a quiz on Friday on Chapter 0.

Final Exam: The final exam is Wednesday, May 19th, 8:00am–10:00am, in our class room. The final exam is cumulative.

I reserve the right to give unannounced quizzes and make changes in the syllabus that I feel are necessary. Any changes in the syllabus will be announced in class and posted to the website.

First Few Homework Assignments

Odd Assigned Problems	Even/Extra Assigned Problems	Due Date
Read Chapter 0 (Quiz Jan 29), 1.1, 1.7, 1.11, 1.19, 1.41, 2.1 2.3	1.2, 1.4, 1.8, 1.18, 1.22, 1.24, 1.51, 1.52, 2.2, 2.4, 2.8	Jan 29
2.11, 2.19, 2.31, 2.33, 2.37, 2.39, 2.45, 2.51, 3.1, 3.3	2.10, 2.14, 2.16, 2.20, 2.22, 2.24, 2.28, 2.32, 2.34, 2.40, 2.46, 2.48(a-f), 2.57, 2.61, 2.62, 3.2, 3.4	Feb 5
3.7, 3.11, 3.17, 3.23, 3.27, 3.29	3.6, 3.12, 3.14, 3.18, 3.20, 3.22, 3.32, 3.33, 3.38, 3.43	Feb 10