Math 4320 - Introduction to Real Analysis II

Spring Term 2013

12:30 - 1:45 p.m. TR in NC 1316

Instructor: Stan Payne

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This is the second semester of a two-semester introduction to Real Analysis, a course that has evolved from the traditional course called Advanced Calculus. We begin this semester with a very brief review of some material in Chapter 4 of our text by W. F. Trench. We then will attempt to complete chapters 5, 6 and 7. This will continue to mean that students often will have to study some proofs on their own, although I will attempt to put up detailed proofs of many of the theorems in the text. The emphasis in this course will continue to be on having the students write up proofs in great detail and hand them in nearly every week to be critiqued carefully. I will make a concerted effort to return each homework assignment within one week so that students can be aware of their progress as soon as possible.
Note: I encourage students to work in groups to figure out things, even to discover proofs, but students must write up their own homework problems.

Very Important: Every problem handed in must be stated in full, so that no reader should ever have to consult the text to see what the problem was! And the solution should be written up using complete English sentences. Probably I will become stricter in enforcing this. Each of the ten homework assignments will count as ten per cent of the homework grade with different problems counting approximately the same.

Grades will be based on the following:

Homework: 25%
In-class closed-book Mid-term Exam 1: 25%
In-class closed-book Mid-term Exam 2: 25%
In-class Final Exam (with one “cheat sheet”): 25%

Insert CLAS policies and dates for spring 2013
Proposed Syllabus

It is my intention to have homework assignments due on Tuesdays with my personal goal being to hand them back two days later, and always by one week later.

Week 1 (Jan 22 & 24) Review Sections 4.4 and 4.5.
Week 2 (Jan. 29 & 31) Sect. 5.1.
Week 3 (Feb. 5 & 7) Sect. 5.2.
Week 4 (Feb. 12 & 14) Sect. 5.3.
Week 5 (Feb. 19 & 21) Sect. 5.4.
Week 6 (Feb. 26 & 28) Exam 1 on Thursday
Week 7 (Mar. 5 & 7) Sect. 6.1
Week 8 (Mar. 12 & 14) Sect. 6.2
Week 9 (Mar. 19 & 22) In-class Exam 2 through Sect. 6.2 on Thursday.
Week of March 26 & 28: Spring Break
Week 10 (April 2 & 4) Start Sect. 7.1.
Week 11 (April 9 & 11) Finish Sect. 7.1.
Week 12 (April 16 & 18) Start Sect. 7.2.
Week 13 (April 23 & 25) Finish Sect. 7.2.
Week 14 (April 30 & May 2) Start Sect. 7.3.
Week 15 (May 7 & 9) Finish Sec. 7.3 and Review.
Finals Week May 14 and 16. Time and place of in-class exam T.B.A.
Homework Assignments

#1 Jan. 29 : Sect. 4.4 Problems 18 and 25; Sect. 4.5 Problems 2 and 3.

#2 Feb. 5 : Sect. 5.1 Problems 22, 24 and 25.

#3 Feb. 12 : Sect. 5.2 Problems 1, 3 and 4.

#4 Feb. 19 : Sect. 5.3 Problems 1, 14 and 20.

#5 Feb. 26 : Sect. 5.4 Problems 2, 5 and 21. Exam 1 on Feb. 28.

#6 March 12 : Sect. 6.1 Problems 12, 13 and 14.

#7 March 19 : Sect. 6.2 Problems 13, 15 and 23. (Exam 2 on Thurs.; through Sect. 6.2)

Spring Break

#8 April 9 : Sect. 7.1 Problems To be selected later.

#9 April 23 : Sect. 7.2 Problems To be selected later.

#10 May 7 : Sect. 7.3 Problems To be selected later.