Advanced Calculus – Math 341

Spring 2014 · MW 4:40-6:20 · 1S-107

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Office Hours: M 2:30-4:25, W 3:35-4:25

Supplies

Text: *Elementary Real Analysis* by Thomson, Bruckner, and Bruckner
`http://www.classicalrealanalysis.info/com/Elementary-Real-Analysis.php`

Stapler: Any assignment you turn in which is longer than one page must be stapled.

Grading Scale

The grading scale below will determine your final grade.

Definitions / Theorems	....	5 %
Course Summary	....	7 %
Group Homework	....	7 %
Individual Homework	....	15 %
Exam 1, W Feb 26	....	22 %
Exam 2, W Apr 9	....	22 %
Final, TBA	....	22 %

All assessment will be based on the clarity of your explanations, your use of proper grammar, and the conceptual and logical correctness of your argument.

Definitions / Theorems

In order to be able to do mathematics well, you must know the definitions of the terms and the statements of the theorems we cover in the class by heart! To encourage you to keep up with these, we will have frequent "Definition Quizzes" at the beginning of class periods. This quiz could ask you to recall one definition, or one major theorem from a previous class. It doesn't count much towards your grade, but it will help you tremendously on your homework and tests.

Course Summary

At the end of the course, you will each turn in an individual written summary of the course. This summary can include proofs, pictures, examples, and anything else you think is relevant. It should be something more than just handing me your notes for the course – I'd like to see that you've given some thought to how all the topics we cover fit together.

Exams

You will have 3 exams, given at the dates written above. I will not give a make-up exam under any circumstances, so be sure that you can make these dates now!

Homework

Homework is a critical component of any math course. Homework will assigned on a regular basis. Both individual and group problems will be assigned; most will be group problems. Homeworks will be due on Wednesdays at the start of class. I will normally assign 4 or 5 problems per class period, but I may not be able to grade every problem. However, I will be happy to go over any homework problem you have turned in with you in office hours.

The homework problems you turn in for a grade must be carefully written up. I advise working each problem and proof out on scratch paper first, and then writing it out in a well-organized manner on the paper you turn in.

The individual problems must be worked *entirely on your own from beginning to end*, with no discussion with your classmates. You may, however, come discuss these problems privately with me in office hours. The group problems should be worked on in groups of 1, 2, or 3 students. *Each group problem must be a collaborative effort, rather than simply dividing up the problems amongst the group.* You will turn in only 1 well-written assignment per group, and each student will get the same score for that group homework. You may choose your own groups, though I may rearrange them occasionally for variety.

If it turns out that there is a particular problem in which two groups collaborate together, then all names should be put on that single problem. This may happen occasionally without penalty, but should not be a regular occurrence. No late homework will be accepted under any circumstances, but your lowest group, and your lowest individual, homework score will be dropped.

Goals and Learning Outcomes

Learning Goal	Assessment
The student will be able to determine whether a given function is continuous, and prove the result using the definition of a limit.	When the class is being assessed, the final exams will include embedded questions to assess student performance on these topic-specific learning goals. Instructors are resposible for tallying their students scores.
The student will be able to use the definition of a derivative to determine, with proof, whether a given function is differentiable.	same
The student will be able to determine the convergence or divergence of a given sequence or series, and prove that a sequence converges by proving that it is monotone and bounded.	same
The student be able to use the definition of the integral as a Riemann Sum to determine, with proof, whether a given function is Riemann integrable.	same