Advanced Calculus 4350, TTh (2:00-3:20)

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Office Hours: Tue 3:30-5:30, Wed 1:30-5, Thu 1:30-2:00 and by appointment.
Text: Introduction to Real Analysis, Bartle and Sherbert, 4th ed. Wiley.

Description of the course: Students learn how to think and reason in the context of analysis on the real axis, and learn how to write correct and clear mathematical arguments in this context. This is a proof based course, and we emphasize epsilon-delta proofs. Concepts and skills to be mastered by the students include: limits of sequences, limits of functions, continuous functions, derivatives of functions on the line.
Course Outline:

Chapters 1/2.
08.26 Sets. Real Numbers.
08.28. Real Numbers.
Chapter 3.
09.02. Sequences and series.
09.04. Sequences and series.
09.09. Sequences and series.
09.11. Sequences and series.
09.16. Sequences and series.
09.18. Sequences and series.
09.23. In class midterm exam.
Chapter 4.
09.25. Limits of functions.
09.30. Limits of functions.
10.02. Limits of functions.
10.7. Limits of functions.
10.9. Limits of functions.
10.14. In class midterm exam.
Chapter 5.
10.16. Continuous functions.
10.21. Continuous functions.
10.23. Continuous functions.
10.28. Continuous functions.
Chapter 6.
10.30. Derivatives.
11.04. Derivatives.
11.06. Derivatives.

11.11. Derivatives.
11.13. Derivatives.
11.18. Derivatives
11.20 In class midterm exam.
11.25. Review for the final exam.
12.02. Review for the final exam.
05.06 Review for the final exam.

Learning outcomes: Students will learn the mathematical approach to differential calculus.

Assessment of learning outcomes: There will be 3 midterm exams, each worth 11% of the final grade, a final comprehensive worth 33% of the final grade, and quizzes worth 33% of the grade. The lowest two quiz grades are dropped. Homework is not collected, it is checked using quizzes. Attendance is mandatory, and will be taken into account when evaluating student's performance.

How to study? First, you should read the classroom notes. Second, you should read the textbook, trying to solve by yourself the detailed examples from the book, then look at how they are solved there. Do the homework regularly. If you have any questions, past or present, ask them in class. Listen to teacher's explanation carefully. If this all fails, come and ask for help and advice during the office hours.

Other matters:

ADA accommodations (TTU Operating Policy 34.22). Any student who, because of a disability, may require some special arrangements in order to meet course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services, during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office at 335 West Hall or 8067422405.

Absence for observance of a religious holy day (TTU Operating Policy 34.19).

1. Religious holy day means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code 11.20.

2. A student who intends to observe a religious holy day should make that intention known to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

3. A student who is excused under Section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

Academic Honesty (TTU Operating Policy 34.12). It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The

attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension. Scholastic dishonesty includes, but it not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

If you cannot take a certain test, please announce the instructor at least three days in advance. After the test, only medical excuses will be accepted.