

MATH 3243

Advanced Calculus

Fall 07

Instructor: Dr. Scott Gordon, 324 Boyd.

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Time and Location: Th 5:30–8:00, 302 Boyd.

Office Hours:

M	11:00–2:00
W	11:00–2:00
Th	10:00–2:00*

(*10:00–12:00 in 205 Boyd)

If you would like to see me but cannot come during one of these times, please call first or make an appointment.

Textbook: *Elementary Real Analysis* by B. Thomson, J. Bruckner, and A. Bruckner.

Course Description: In this course, we will study the concepts of single-variable calculus from a more rigorous point of view. Topics include properties of the real numbers, sequences, series, limits, continuity, and differentiation.

Attendance: You are expected to attend every class. Missing more than two classes *for any reason* will result in an F for the course.

Homework Exercises: Problems assigned after each lesson will be divided into two categories: exercises and turn-in problems. Exercises will not be graded and are designed to help you understand the important concepts and prepare for the tests.

Turn-in problems: These will be collected (generally) one week after they are assigned. There will be approximately 150 points worth of turn-in problems assigned during the semester. You may seek outside assistance with these problems, but your final answers must be in your own words and reflect an understanding of the problems.

Oral Presentations: You may present one exercise or turn-in problem in class each week. You will receive one point of extra credit for each problem presented, assuming it is done correctly and completely.

Tests: There will be five in-class tests, worth 60 points each. Test dates: 8/30, 9/20, 10/18, 11/8, 12/13.

Rescheduling tests and quizzes: If you have a valid reason for missing a test or quiz, you may be allowed to reschedule, but you must make arrangements with me *in advance*.

Grading: Your numerical grade will be your total points (on turn-in problems, tests, and extra credit) as a percentage of the total number of possible points. Your letter grade will be determined according the following grading scale: A: 88–100, B: 76–87, C: 64–75, D: 52–63, F: 0–51.

Withdrawal: October 8 is the last day to withdraw from the course with a grade of W.

Honor Code Violations: *Any student who violates the University of West Georgia Honor Code (as stated in the Student Handbook) will receive an F for the course.* The incident will also be reported to the Vice President's Office and become part of the students's record at UWG.

Learning Outcomes: The student will be able to

1. Use properties of the real numbers to prove theorems about their structure.
2. Use the definition of limit to prove the convergence of sequences, series, and functions.
3. Use the definition of continuity to establish important properties of continuous functions.
4. Use the definition of differentiability to establish important properties of differentiable functions.