

Math 315–001 (Advanced Calculus I)
Fall 2008

Instructor: David Walnut

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Course web page: Access from the page <http://math.gmu.edu/coursehomepages.htm>.

Office hours: TR 2:45–4:00pm and by appointment.

Text: William R. Wade, *An Introduction to Analysis* (third edition)

Topics: The course will cover portions of Chapters 1–7 in the text.

General Comments:

The goal of this course is to introduce the student to the arguments and techniques that are used in modern analysis, and in particular will help the student develop a facility with the limiting processes that occur regularly throughout mathematics. In addition the course reinforces the theory of differentiation and integration learned previously and places it on a firmer footing. Finally the course provides a mathematically rigorous foundation for solving problems in more advanced applied mathematics including numerical analysis, differential equations, and functional analysis.

The prerequisite for this course is C or better in Math 213 and Math 290. The student is expected to be familiar with the basic rules of logic and of mathematical proof including universal and existential quantifiers, negation, and mathematical induction. The student is also expected to be familiar with the notion of function and equivalence relation, and with the basic properties of sets.

Grading:

Homework: Homework exercises from the text will be assigned regularly, collected and graded. Your homework grade will count for approximately $3/5$ of your final grade.

Exams: A midterm exam will be given on Tuesday, October 7, and a final exam on Tuesday, December 9. The final exam will not be cumulative. Each exam will count for approximately $1/5$ of your final grade.