

# MATH 212 – Calculus II

Fall, 2001

**Instructor:**

Dr. Lester Caudill                      lcaudill@richmond.edu  
205 Jepson Hall                      www.mathcs.urich.edu/~caudill  
289-8083

**Office Hours:** TU 10:00-11:00am, WED 3:30-4:30pm, TH 2:00-3:00pm, FRI 9:00-10:00am, and by appointment.

**Text:** *Calculus from Graphical, Numerical, and Symbolic Points of View*, by Ostebee and Zorn.

**Homework:** Homework will be collected daily and graded periodically. Students are allowed to consult with one another provided everyone does their share.

**In-Class Work:** There will be a number of in-class assignments, many of which will be group assignments.

**Mini-Projects:** The course may include a number of extended, out-of-class assignments.

**Computer Assignments:** A number of assignments will involve the use of the computer software package *Mathematica*. No special knowledge of computers is necessary for the course.

**Exams:** There will be three in-class exams and a (comprehensive) final exam. The exams will be given on the following dates:

- Exam 1: Wednesday, September 26.
- Exam 2: Monday, October 29.
- Exam 3: Monday, December 3.
- Final Exam:
  - *Section 03*: Monday, December 10, 2-5pm.
  - *Section 04*: Saturday, December 15, 2-5pm.

**Grading Policy:**

Exam 1: 15%	Homework/Mini-Projects: 17%
Exam 2: 15%	Class Participation/In-Class Work: 10%
Exam 3: 15%	Computer Assignments: 8%
Final Exam: 20%	

**Attendance:** Students are expected to attend all class meetings. If an absence is unavoidable, you are still responsible for all material covered and assignments made. *THERE ARE NO MAKE-UP EXAMS.* If an exam is missed, and the excuse is offered within 24 hours, and the excuse is allowed, then the grade on the Final Exam will replace the exam grade. A student who must miss an exam because of a University-sponsored activity should notify me as soon as possible, as you may be able to arrange to take the exam early.

**Academic Honesty:** Students are to abide by the official University policy on academic honesty. Each student will be required to sign their exam papers, thereby signifying their compliance with the University Honor Pledge.

**Symbolic Reasoning Field-of-Study Statement:** Calculus, the mathematical language of change, is used to model phenomena in a surprisingly wide variety of applications, in such areas as the physical and biological sciences, economics, epidemiology, and personal finance.

Math 212 is a continuation of a first year course in the calculus, with an emphasis on the integral, applications of integration to various geometric and physical problems (for example: areas, volume, work, center of mass), series, power series, and differential equations. The fundamental concepts of approximation and convergence play a key role in all of the topics. As in Math 211, both an analytic and geometric point of view is stressed, and students are expected to be able to translate back and forth between the two. Students in Math 212 will be expected to develop skills in formulating problems, solving them, and communicating their solution to others (usually in written form). Successful formulation of a problem often requires that the student recognize how the basic concepts of calculus are involved in the problem at hand, and be able to translate the problem into appropriate symbolic form. This process of formulation and solution helps students to develop analytical thinking skills applicable in a wide variety of situations. While students will need to develop a degree of proficiency with techniques for evaluating integrals and applying tests for convergence, the emphasis in the course will be on problems which require students to understand concepts and underlying principles, as opposed to merely implementing algorithms. Some problems are designed to have students construct and analyze mathematical models of real world phenomena, while other problems help students make conceptual leaps from specific examples to general principles.