SYLLABUS

Calculus II, Fall, 1999

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Office hours: M-Th 10-11
or by appointment

I. COURSE DESCRIPTION:

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 profiency 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 principals.

We will use the book Calculus by Hughes-Hallett, Gleason, et. al. We will cover chapters 7 through 10, covering the following topics: techniques of integration (substitution, parts, tables, partial fractions, improper, numerical), applications of integration (geometry, physics, work), differential equations (slope fields, methods, integrating factors, applications), series and power series (Taylor series, radius of convergence, error estimates). We are assuming that you are familiar with the material in Chapters 1 through 6, including all derivative formulas, basic integration facts, and the Fundamental Theorem of Calculus.

II. GRADING:

Three hour exams (100 pts each) Exam dates: 9/24 10/22 11/22	300 pts
Quizzes (20 pts each) Approximately 7 quizzes will be given; your score will be the sum of the best 5. No make-up quizzes will be given for any reason.	100 pts
Homework grade You will turn in weekly homework assignments	100 pts
Final Exam (Monday December 13, 9-12)	200 pts
TOTAL	700 pts

(NOTE: You can get 10 bonus points for attending a lecture sponsored by the math and computer science department)

III. **ATTENDANCE:** Attendance is expected. You are responsible for making up any work you miss if you are not in class. I reserve the right to punish serious abuse of privileges (I will warn you before I do so).

IV. **ACADEMIC HONESTY:** All work on tests and quizzes must be your own. Calculators are permitted on quiz and test days, but you are never permitted to share them (make sure that you bring one on quiz and test days!). The following 2 statements explain the position of the University on computer plagiarism, and they should be used as a guide to your computer work.

a. Any original work stored on a floppy disk or other data storage device is the property of the author; anyone else who presents all or part of such work as his or her own, with or without the permission of the author, shall be deemed guilty of plagiarism.

b. Anyone who gains unauthorized access to computer files stored by someone else shall be guilty of vandalism, whether or not the files are altered.

On the other hand, I want to encourage you to speak with fellow students, lab assistants, or professors about the lab assignments. The important principle to keep in mind is that any solutions that you turn in must have been written by you.