

MAT 213: Calculus III – Spring 2009 Syllabus

Mission Statement: Union's mathematics program seeks to further students in their quest for increased understanding of Creation and the created order and to equip students to serve God, church, and society through excellence in thinking and the use of mathematics. We do this through a curriculum that develops the student's ability to think logically, analytically, and abstractly; to pursue a body of knowledge whose basis is largely independent of both empirical observation and culture; and to learn humility and a sense of wonder at the complexity, beauty, and applicability of mathematics.

I. Basic Information

MAT 213: Calculus and Analytic Geometry III, Four (4) credit hours.

Prerequisite: MAT 212.

Time: 1:00-1:50 MWF and 1:40-2:30 Tu PAC B-25

II. Course Instructor

Instructor: Dr. Matt Lunsford

Office Hours: TBA

Office: PAC C-47

email: mlunsfor@uu.edu

Office Phone: 661- 5222

III. Course Description and Objectives

This course is designed to introduce the student to the intuitive calculus normally offered at the undergraduate level. Upon successful completion of this course, the student will have a basic understanding of the following fundamental concepts: sequences and infinite series, power series, vectors and vector-valued functions, solid analytic geometry, calculus with functions of several variables, partial derivatives, gradients, multiple integrals, and spherical and cylindrical coordinates.

IV. Method of Instruction

This course will be taught by using a lecture-demonstration-discussion method.

V. Required Text

Thomas' Calculus - (Eleventh Edition) by Weir, Hass, and Giordano

A graphing calculator is **highly** recommended. A scientific calculator is required.

VI. Assigned Readings and Research

The student will be required to read selected parts of the above text.

VII. Special Projects and/or Activities

Problem solving assignments from the text will be made throughout the course. Students are expected to complete these assignments in a timely fashion. Quizzed based upon these assignments will be given in class. A grade of zero will be recorded for each student who is

absent on the day a quiz is given. At the end of the semester, the student's two (2) lowest quiz grades will be dropped. There will be NO make-up quizzes.

Students also will be expected to complete several computer lab assignments using *Mathematica*. The *Mathematica* assignments will be graded on content and presentation. Late assignments will not be accepted.

VIII. Method of Evaluation

The student will be evaluated by his/her performance on four unit exams and on a final comprehensive exam. The final exam will be worth 125 points and will be given according to the university's final exam schedule. Each unit exam will be worth 75 points. Additional points will be accumulated through quizzes and computer lab assignments. The student's final letter grade in the course will be determined by calculating the ratio of the total points earned to the total points possible and using the following grading scale:

A 92 - 100; B 83 - 91; C 74 - 82; D 65 - 73; F 0 - 64

IX. Attendance Policy

Regular attendance is expected of all students. Due to the nature of mathematics, regular attendance is necessary in order for the student to successfully complete the course. Any student who misses an excessive number of times will be reported to the Academic Center. Any student who misses an exam must bring to the instructor a written explanation of the reason for the absence and supporting documents within two days of the exam. A make-up exam will not be scheduled unless the above procedure is followed.

X. Cheating and Plagiarism

No forms of cheating will be tolerated. If the instructor observes cheating by a student during an exam, the student will receive a grade of zero for that exam and subsequently will be reported to the Office of the Provost.

XI. Drop Date

The last day to drop the course without special permission of the Registrar is March 10.

XII. Outline of the Course

- A. Sequences and Infinite Series
- B. Vectors and the Geometry of Space
- C. Vector-Valued Functions and Motion in Space
- D. Partial Derivatives
- E. Multiple Integrals, Integration with Cylindrical and Spherical Coordinates

XIII. Miscellaneous

In class use of cell phones, PDAs, MP3 players, laptops, and other similar electronic equipment without prior instructor approval is strictly prohibited. Calculators **must** be standalone devices for the purpose of calculation only.