MATH 221 - Calculus I

Instructors:

Instructors change every semester. In recent semesters, it has been taught by Prof. Mortensen, Cunningham and Rosenblatt.

Prerequisites:

This course is for those who have a little calculus background. Those who do not have any experience in calculus should take Math 220 instead, which covers all the topics in MATH 221 plus some high school algebra at a slower pace. A minimum score of 70% on the ALEKS Math exam is required for placement into either of these two courses.

When to Take It:

If you do not already have AP credit for this class, you should take it during your first semester. This class is best taken as soon as possible because it is a prerequisite course for almost all core classes - in particular, it is a prerequisite for Math 231 and Phys 211, which in turn are prerequisites for further courses in Math, Physics, and ECE.

Class Content:

The class starts by introducing the concept of limits and continuity. Afterwards, it moves on to teaching differentiation and various differentiation rules (product rule, chain rule, etc.). Various applications of differentiation, such as finding extrema and curvature of graphs, and finding velocity and acceleration are covered. After covering differential calculus, the course moves on to integration and integration techniques - definite and indefinite integration are covered, as are their relation via the fundamental theorem of calculus. The course ends with applications of integration such as finding areas between curves and volumes of objects resulting from rotations of curves.

Work:

The exact amount of work depends on the instructor. Usually, this class has weekly homework; some instructors use WebAssign, a web-based homework system. This class also has a twice-a-week discussion session, in which a TA goes over the material (and sometimes covers new material); the discussion sections often include quizzes. The amount of time that a student spends on this course will depend on their background. For those with strong backgrounds, it doesn't take a long time to finish these tasks. Students should generally expect to spend at least 5 hours per week outside of class. Usually, this class has three one-hour exams held at regular intervals during the semester, as well as a cumulative final. Some professors allow students to use a notecard during the exams.

Life After:

This course prepares students for Calculus II (Math 231), which continues the ideas of Calculus I by teaching how to integrate more complicated functions, among other things. The material from Calculus I is fundamental to many ECE, Math, and Physics classes that ECE majors must take.