Instructor: Fred Goodman  
Office: 325G McLean Hall  
Phone: 335-0791  
Office Hours: Tuesday and Thursday at 10:00, and by appointment.

**Course goals:** A thorough knowledge of elements of vector calculus. Growth in mathematical strength and self-reliance.

**Book:** Ellis and Gulick, Calculus, 5th edition.

**Course plan:** The basic course plan is Chapters 13, 14, and 15 from the text. A little material from Chapter 12 is also needed and will be covered at the appropriate moment.

**Homework:** Homework will be assigned weekly; many problems will be assigned, and among them a few will be singled out as “presentation problems.” These are to be written out carefully and completely, with the logical steps explained. The criterion for having done this well is that a person who knows calculus but has not done these problems should be able to understand completely what the problem is and how it is solved, by reading your paper. The examples in the text could serve as a model for your write-up of the presentation problems. In particular, what you hand in as presentation problems will not be the scratch paper on which you first figure out the problem! Some of these presentation problems will be graded. The non-presentation problems will be spot checked for reasonable completeness.

I will try to make available to you exercises and demonstrations using three dimensional graphics using Mathematica and/or Maple. These mathematics packages are available in computer centers throughout the university and on all common platforms: Mac, Windows 95, Unix workstations. Please urge the administrator of your favorite computer center to install the new version of Mathematica, vs. 3.0. The computer work will be optional, but highly recommended. We are, after all, highly visual creatures who understand best what we understand visually.

**Exams, etc:** There may be occasional quizzes covering recent assignments. All of the exercises from these assignments will be covered, not just the presentation problems.

There will be **two midterm exams** at approximately 4-5 week intervals, covering Chapters 13 and 14 respectively. There will be a **two hour, comprehensive final exam** at the time announced in the Spring 1997 Course Schedule.

**Grades:** Homework will count minimally. Most of the grade will be based on quizzes, midterms and the final. I will average the scores according to several slightly different schemes and give you the best of the average scores; so your most successful exams will count most.

**Attendance and absences:** You are responsible for the material covered in class, whether or not you attend. You are responsible for announcements made in class, which may concern changes in the assignments, syllabus, exams, etc. Absence from exams will require a compelling reason, and must be arranged in advance.

**University policies:** Students with disabilities are entitled to special arrangements. Please inform me confidentially if you require such special arrangements.

I expect that you will have a good time in this course and learn a lot. However, if you have any difficulty or disagreement with the conduct of the course, please contact me to discuss the matter. If we cannot resolve the difficulty ourselves, you are welcome to appeal first to the Department of Mathematics, and then to appropriate offices in your College.