MATH 2443–Section 002   Calculus IV Information Sheet

This handout contains important information about Mathematics 2443, Section 002, for the Spring Semester 2000. It is your responsibility to acquaint yourself with all the information in this handout, and with any modifications to it that may be announced in class. If you lose your copy, please request a replacement from me.

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Office Hours: To be announced.

Textbook: *Calculus,* (3rd ed.) by James Stewart, Brooks/Cole, 1994.

Overview of Syllabus: In this course, we shall focus on Chapters 12, 13 and 14 of the text. A detailed list of the topics to be covered can be found on the attached Class Schedule.

Calculus IV begins with a treatment of real valued functions of several real variables. As in the one variable case (Calculus I and II), we learn how to differentiate (compute partial derivatives – Chapter 12) and anti-differentiate such functions, and how to compute Riemann sums (multiple integrals – Chapter 13). We shall meet some old favorites with a new twist such as the chain rule, the second derivative test and max/min problems, as well as some uniquely higher dimensional creatures like Lagrange multipliers and gradient vectors.

The multiple integration will enable us to compute volumes and surface areas of very general shapes in 3-dimensions. We shall also work with integrals in other coordinate systems (eg. cylindrical and spherical).

Finally, in Chapter 14, we shall study the calculus of vector fields in 2 and 3 dimensions. These have lots of applications in physics (force fields) and in hydrodynamics (fluid flow and air flow). We shall talk about line and surface integrals, conservative fields, curl and divergence, and three beautiful theorems: Green's Theorem, Stokes theorem and the Divergence Theorem.

Prerequisites: Math 2433 (Calculus III), or instructor's permission.

Lectures: You are expected to attend all lectures, and are responsible for all information given out during them. In particular, this includes any changes to the quiz/midterm dates or content. The Class Schedule gives a rough indication of what topics we hope to cover on specific days. Remember that this is just a guide. As the semester develops, we may deviate slightly from this schedule. As in any course, you should try to read the relevant sections of the textbook **before** attending lectures.

Not attending lectures is the road to disaster!

Grading Scheme: Grades will be assigned by weighting the totals from your Homeworks, Quizzes, Midterms, and Final Examination as follows:

Homeworks	15%
Quizzes	6%
Midterm Total	54%
Final Examination	25%

Here is the grading scale used in the course.

$$A \quad 85-100\%; \quad B \quad 70-84\%; \quad C \quad 55-69\%; \quad D \quad 40-54\%; \quad F \quad 0-39\%.$$

Here is a detailed description of each of the components listed above.

Homework: Homework will be due at the **start** of class on Tuesdays. Homework assignments can be found on the Homework Sheets which will be posted on the web page as the semester progresses. Minor modifications to the homework sheets may be announced in class during the semester.

You are responsible for ensuring that your homework gets turned in on time. Late homework upsets the grading process and is unfair to other students, and so will **not** be accepted. This includes homework that you *"have done, but forgot to bring into class"*.

The homework assignments are there to provide you with a **minimum** level of exposure to the materials outside of class time. You will need to do many more problems before you feel comfortable with the concepts involved. Take it from experience (of generations of students!) that the way to succeed in a math course is to work (and understand) a large number of problems.

It is important to work hard at the homeworks for several reasons. One, the homeworks are worth 15% of the course total. A high score on the homeworks takes off some of the pressure during the midterms and the final. For example, if you're hoping for a B grade overall, then an A average on the homeworks could offset a "bad day" on one midterm exam. Two, making sure that you understand the the homeworks is the best way to learn the course material. This is a lot more effective in the long run and a lot less stressful than the usual method of cramming before exams. You should make sure that you **understand** what you're doing on the homeworks, and that you understand where you went wrong on specific problems. It's not enough to just copy down answers from solutions manuals or from other students.

Quizzes: Three 10-minute Quizzes are held in class during regular lecture times on the following dates:

Quiz 1: Tuesday, January 25.

Quiz 2: Tuesday, February 29.

Quiz 3: Tuesday, April 4.

Midterms: There are three midterms, which are held during regular lecture times. They are held on the following dates:

Midterm 1: Thursday, February 10.

Midterm 2: Thursday, March 9.

Midterm 3: Tuesday April 18.

Final Examination: The final examination is cumulative. It is scheduled for Tuesday, May 2, 1:30pm–3:30pm in PHSC 119.

Taking Examinations: Here are a few notes on taking Examinations.

- I will hold extra Office Hours and schedule Review Sessions before the Midterms and Final Examinations. You are strongly encouraged to attend the Review Sessions, and to attend Office Hours regularly.

- You cannot use calculators/computers, books or any type of notes during the examinations.

- All examinations must be taken at scheduled times, except in *very extreme circumstances.* So be careful not to make travel arrangements that conflict with examination times. If you cannot take an examination at a scheduled time, you should contact me *well in advance of the test time.* Otherwise, an absence at an exam will result in a score of zero.

Policy on W/I Grades: Until January 24 there is no record of grade for dropped courses. From January 25 through February 18, you may withdraw and receive a W grade, *no matter what scores you have so far achieved.* From February 21 through March 24 you will need my permission to withdraw. From March 27 on, University regulations specify that you may withdraw only with the permission of the Dean.

Students who are failing the course should **not** expect to be able to receive an I grade in place of an F. I will only consider giving an I grade if the student is already maintaining a passing grade in the course, has completed most of the work in the course (for example, all but the final examination), and can demonstrate that they are unable to complete the work at this time due to circumstances beyond their control.

Academic misconduct: The following is taken from the University Academic Misconduct Code. *It is the responsibility of each instructor and each student to be familiar with the definitions, policies, and procedures concerning academic misconduct.*

Cases of academic misconduct are inexcusable. Don't do it. All cases of academic misconduct will be reported to the Dean of Arts and Sciences for adjudication.

Accommodation of Disabilities: Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible to discuss the accommodations necessary to facilitate his or her educational opportunity and ensure his or her full participation in the course.