Vector calculus (Math 112), Spring 2006, San José State University
MacQuarrie Hall 323, MWF 11:30am–12:20pm (Sec. 01, code 28499)

Instructor: Dr. Tim Hsu (pronounced "shoe").

Office and phone: MacQuarrie 419, (408)924-5071.

Office hours: MWF 10:30–11:30, MWF 12:30–1:30, or by appointment. For a current schedule, see: `http://www.math.sjsu.edu/~hsu/courses/generic/sched.pdf`

E-mail: `hsu@math.sjsu.edu`. I can be reached by e-mail at most times of the day, and will often answer within a few hours.

Course web page: `http://www.math.sjsu.edu/~hsu/courses/112/`

Texts: *Vector calculus*, Jerrold E. Marsden and Anthony J. Tromba, 5th ed. (Make sure you get the 5th ed., with a white-haired guy on the cover, not the 4th ed., with a comet on the cover.) *Writing math in paragraph style*, Hsu, coursepack available at Associated Students Print Shop or downloadable from course web page.

Software: You will need to use the computer program Maple, either on the math department system, or on your own computer. See handout on homework for details.

Calculator: You will be allowed to use calculators for numerical and graphical work on exams, but you will *not* be allowed to use a calculator that can "do" derivatives or integrals, like the TI-89 or the TI-92.

Grading: Your semester grade consists of:

Homework:	10%
Quizzes:	5%
Exam 1:	15%
Exams 2 & 3:	20% each
Final exam:	30%

Goals of the course. In a nutshell, this class is Math 32 "for grownups". We will give a full account of multivariable differentiation, integration, and the relationship between the two. This last point, which is also known as the Fundamental Theorem of Calculus, is where the main differences with Math 32 occur. In fact, most of the new complications (but also most of the applications) in Math 112 come from trying understand the geometry of the Fundamental Theorem of Calculus in higher dimensions.

Prerequisites. This class will assume that you remember the computational aspects of partial differentiation and double and triple integration from Math 32. You do not need to remember most of the conceptual aspects of Math 32, as they will be covered again, sometimes from a different point of view, in this class.

Class is a cell/beeper-free zone. Please turn off all cellphones and beepers before you get to class.

Homework. Homework will be due every class day, except for exam days; for more details, see the handout on homework. Specific assignments will be determined as the term progresses. For a complete list of all homework assigned to date, see the course web page.

Quizzes. Roughly once a week, except for exam weeks, we will have an in-class quiz. Quizzes are closed-book, no notes allowed, but calculators are fine. Our first quiz will be on **Mon Jan 30**.

Exams. We will discuss this topic in more detail before the first exam, but briefly, the material on exams will mostly resemble the material from the homework. All exams are closed-book.

Exam dates. The dates of our three in-class exams and final exam are found on the syllabus below. In particular, the final exam will be held on **Fri May 19**, from **9:45am–noon**. Please make sure that you are still on campus at that time (e.g., don't buy a plane ticket that leaves town on May 18).

How to add this course. If you are not registered for this course, and you would like to add it, you must first put a full effort into completing all of the work in the course. Second, if you are a graduating senior, you need to produce documentation to verify that.

I'll make a waiting list, which you get on by filling out and turning in the information form for the course. I'll give out add codes starting **Tue Feb 07**, mainly based on completeness of homework, and as long as there is room, I will continue to give out add codes until add date (**Mon Feb 13**). Note, however, that graduating seniors have the highest priority, and that Open University students have the lowest priority.

How to drop this course. Until **Mon Feb 06**, you can drop at `my.sjsu.edu`. Nothing will appear on your transcript, but please let me know if you drop.

To drop after Mon Feb 06, you must go to the student services center and submit a Course Drop form to the Director of Academic Services. Dropping under these circumstances is only allowed for "serious and compelling reasons" (course catalog). A low grade is not a serious and compelling reason.

Academic integrity. Your commitment to learning (as shown by your enrollment at SJSU) and the university's Academic Integrity Policy require you to be honest in all of your academic course work. Faculty are required to report all infractions to the Office of Judicial Affairs. (See: `http://www2.sjsu.edu/senate/S04-12.htm`)

Disabilities. If you need course adaptations or accommodations due to a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with the Disability Resources Center to establish a record of their disability.

Tentative syllabus

Date	Reading	Date	Reading
Wed Jan 25	Review: 2.3, 5.2–5.3	Mon Mar 27–	**SPRING BREAK**
Fri Jan 27	Review: 5.4, 5.5	Fri Mar 31	**NO CLASSES**
Mon Jan 30	1.1	Mon Apr 03	4.3
Wed Feb 01	1.2	Wed Apr 05	4.3
Fri Feb 03	1.3	Fri Apr 07	4.4
Mon Feb 06	1.4–1.5	Mon Apr 10	4.4
Wed Feb 08	2.1	Wed Apr 12	7.2
Fri Feb 10	2.1	Fri Apr 14	7.2
Mon Feb 13	2.2	Mon Apr 17	7.3
Wed Feb 15	2.2	Wed Apr 19	7.3
Fri Feb 17	**Exam 1**	Fri Apr 21	**Exam 3**
Mon Feb 20	2.3	Mon Apr 24	7.6
Wed Feb 22	2.3–2.4	Wed Apr 26	7.6
Fri Feb 24	2.4	Fri Apr 28	8.1
Mon Feb 27	2.5	Mon May 01	8.1–8.2
Wed Mar 01	2.5–2.6	Wed May 03	8.2
Fri Mar 03	2.6	Fri May 05	8.3
Mon Mar 06	3.1	Mon May 08	8.3–8.4
Wed Mar 08	3.3	Wed May 10	8.4
Fri Mar 10	3.3	Fri May 12	8.5
Mon Mar 13	3.4	Mon May 15	The Aerobie
Wed Mar 15	3.4		
Fri Mar 17	**Exam 2**		
Mon Mar 20	6.1	**Fri May 19**	**Final exam,**
Wed Mar 22	6.1–6.2		**9:45am–noon**
Fri Mar 24	6.2		