San Jos State University

Department of mathematics

**Fall 2012**

**Math 30: Calculus I**

**Section: 03 Days:** TTh **Time:**  9-10:15 am

**Room:** Sweeney Hall 347 **Instructor:** Vartanian **Office:** Science Bldg 321A

**Email:** michael.vartanian@sjsu.edu **Office Hrs:** MW 8:45 – 10 am, TTh 10:30 am – 12 pm or by app’t

**Catalog Description:** To learn the concepts and techniques of differential calculus and to use them in solving applied problems.  To study limits, continuity, differentiation and applications of the derivative, including related rates and optimization problems.

**Prerequisites:** Besides the official prerequisites, students must have a solid background in algebra, analytic geometry, and trigonometry (Appendices A, B, C, D in the text below).

**Workshop:** Math 30W **(**1 unit**)** is highly recommended but not required; the math office has forms for opting out.

**Text:** *Calculus, Early Transcendentals,* Stewart, 7th ed.

**Text companion site:** www.stewartcalculus.com

**Material to be covered:** Chapters 1 (review), 2, 3, 4. You are responsible for reading all material relating to the lectures and assigned homework.

**Class Website:** www.sjsu.edu/people/michael.vartanian/courses/math30\_F12/

# Grading System: 600 total possible points. A- starts at 540 points (90%); B- at 480 points (80%); C- at 420 points (70%); D- at 360 points (60%).

Homework/Quiz () 100 (%) points

# Test 1 (): 100 points

# Test 2 (): 100 points

# Test 3 (): 100 points

# Cumulative Final: () 200 points

# Notes: Test questions will be similar to assigned HW problems, except without multiple choice questions. No make-ups will be allowed except for unusual circumstances supported by documentary evidence. During the semester, you can estimate your current grade by just averaging your test scores and HW % score to date (e.g., an average of 82 would be a B-). However, be aware that grades tend to decline as the semester proceeds. At the end of the semester, no curve will be applied or individual preferences given. A grade of C- (420 points) or better in this class is a prerequisite for Math 31 (Calculus II). Students intending to use this course to satisfy the General Education mathematical concepts requirement must earn a C (440 points) or better.

**Homework (WebAssign):** The math department requires that two hours of homework be assigned for each hour of class. All students must self-enroll at: [**http://webassign.net/login.html**](http://webassign.net/login.html) under the same name they registered for the class. Go straight to **“I have a Class Key”** and use: **sjsu**  **5997 0813**  You should start working on assigned HWs immediately: Webassign gives you a two-week grace period to provide a purchased access code. The access code may come bundled with the text or may be bought separately on-line. For more information on using WebAssign see the Student Quick Start Guide posted on the class website (URL above). In general, HW will be posted on WebAssign after every lecture and will be **due 1 week after posting**. Occasionally, extra-credit HW may be assigned covering topics not fully discussed in class; thus your HW % score could actually be more than 100. Any exceptions or refinements to this policy will be announced as necessary.

**Communication.** You may email me any time – the only thing I ask is reasonably good English. During lectures, don’t hesitate to interrupt if you have a question and don’t worry about sounding dumb. Since class time is limited, I usually don’t discuss HW problems in front of the whole class unless it is of general interest; instead, talk to me individually either after class, during office hours, or by e-mail. However, I do set aside 15 minutes the class before every test for questions. General announcements will be posted on WebAssign.

**Course Learning Objectives**. Differential Calculus is the mathematical foundation of almost all science and engineering. The purpose of Chapter 1 (Functions) and Chapter 2 (Limits) is to make this foundation solid. Calculus solves Zeno’s ancient paradox of motion: for example, a falling object has a non-zero speed at every instant of time, but since the object doesn’t move in an instant of time, its speed must be zero! To get around this paradox requires delicate reasoning and careful definitions, in particular, of the concept of a limit. Chapter 3 (Differentiation Rules) is the core of the course; to continue the example, these allow one to find the instantaneous speed of objects following any kind of motion, e.g., the motion of electrons in electronic circuits. Chapter 4 gives some important applications of these ideas. On a more general level, the goal here is to get some exercise in precise work and in reading technical literature. In particular, it is usually necessary to read the text several times before the neurons in your brain connect. One of the great pleasures in studying math happens when a portion of text that was totally incomprehensible on a Monday suddenly makes sense the following Thursday.

**Attendance.** People who do not attend regularly usually do not pass this course. Since most calculus classes are now over-enrolled, those people will probably not get a second chance. Since mathematics builds on previous discussions, if you miss a class there will be a permanent gap in your learning.

**Class Decorum.** No laptops, phones, or heads on desks. If you have to leave before the end of class, try to let me know in advance.

**Calculators**. A standard scientific calculator is required. A graphing calculator is sometimes useful but is not required for this course and will not be allowed on tests.

**Tutoring:** The Learning Assistance Resource Center (LARC) located in Student Service Center (SSC) in Room 600 offers free tutoring. See **www.sjsu.edu/larc/tutors/listing/index.shtml.**

**University Information:**

**(a) Academic integrity statement (from Office of Judicial Affairs):** Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at: <http://www.sjsu.edu/senate/S07-2.pdf> **(b) Campus policy in compliance with the Americans with Disabilities Act:** If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please let me know right away. Presidential Directive 97-03 requires that disabled students register with DRC to establish a record of disability.