

Math 226 Calculus I Spring 2009

Text: *University Calculus Elements with Early Transcendentals*, by Hass, Weir, and Thomas.

Prerequisite:

Option 1. Pass Math 109 at SF State, or another precalculus class taken at a college or university, with a grade of C or better. If you took Math 70 at SF State you must follow this option.

Option 2. Pass a high school calculus class or trigonometry based class with a grade of B or better.

Option 3. Pass the AP Calculus exam (level AB or BC) with a score of 3 or higher. In this case, you are eligible for calculus I credit at SF State, and taking Math 226 will result in excess units that are not counted towards graduation. However, if your AP calculus score is only 3 and if your degree plan requires you to take calculus II (Math 227), it would be wise to enroll in Math 226 in order to solidify your background.

Instructor: Joseph Gubeladze

- **Lecture:** Mo-We-Fr, Section 2 – 09:10-10am, Section 6 – 2:10-3pm
- **Room:** Section 2 – TH 325, Section 6 – TH 409
- **Office:** TH 941; **Phone:** (415) 338 7722; **e-mail:** soso@math.sfsu.edu

TA: Section 2 – Raymond Cavalcante, Section 6 – Ashley A. Shimabuku

- **Recitation:** Section 2 – Th 08:10-9am, Section 6 – Th 1-1:50pm
- **Room:** Section 2 – TH 325, Section 6 – TH 409
- **Office:** TBA;
- **e-mail:** cavalcante.raymond@gmail.com, ashleyas@sfsu.edu

Office Hours:

- J. Gubeladze: Mo 12:10 – 2pm
- TA-s: TBA

Grading:

- Calc 1 readiness test – 3% (See *Test, Assignment and Grading Policy*)
- Attendance – 5%
- Homework (assigned weekly, on Fridays) – regular 20%, online 10%
- Quizzes – 7%
- Two midterms – 15%
- Final – 25%

Bulletin Description. The first semester of Calculus: limits, continuity, derivatives, rules of differentiation, applications of differentiation, optimization, L'Hospital's Rule, curve sketching, integration, the Fundamental Theorem of Calculus.

Course Objectives. Students entering Calculus I should have a firm grasp of algebra and trigonometry. They should be able to graph elementary algebraic and

transcendental functions and their inverses. Students should also be able to solve inequalities and equations involving exponential, logarithmic and trigonometric functions. The main objective of Calculus I is for students to learn the basics of the calculus of functions of one variable. They will study transcendental functions, limits, differentiation and an introduction to the Riemann integral, culminating with the Fundamental Theorem of Calculus. They will also apply these ideas to a wide range of problems that include the equations of motion, related rates, curve sketching and optimization. The students should be able to interpret the concepts of Calculus algebraically, graphically and verbally. More generally, the students will improve their ability to think critically, to analyze a problem and solve it using a wide array of tools. These skills will be invaluable to them in whatever path they choose to follow, be it as a mathematics major or in pursuit of a career in one of the other sciences. Upon successful completion of the course, students should be able to:

- evaluate a variety of limits, including limits at infinity, one-sided limits, and limits of indeterminate forms. Students should also be able to identify discontinuities in functions presented algebraically or graphically
- apply the definition of derivative to calculate and estimate derivatives from formulas, graphs, or data
- differentiate sums, products and quotients of composite polynomial, trigonometric, exponential, and logarithmic functions
- discuss the conceptual relations among derivatives, rates of change, and tangent lines in the context of an applied example
- use asymptotes, first and second derivatives to graph functions
- solve applied problems using calculus and justify answers
- estimate a definite integral with a Riemann sum
- evaluate a simple definite integral using the Fundamental Theorem of Calculus

From SFSU Academic Senate

Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by email (dprc@sfsu.edu).

(<http://www.sfsu.edu/dprc/facultyfaq.html#1>)

(Approved by the Academic Senate on Tuesday, October 9, 2007)

From Math Department

On December 7, 2000, President Corrigan approved the Academic Senate Policy on the Observance of Religious Holidays (F00-212). The policy indicates that, the faculty of San Francisco State University shall make reasonable accommodations for students to observe religious holidays when such observances require students to be absent from class activities. For your convenience, the following is a link to an Interfaith Calendar which lists Primary sacred times for world religions:

<http://www.interfaithcalendar.org/>

Complete details regarding this Policy, including implementation can be found on the Academic Senate Web Page at the following location:

<http://www.sfsu.edu/senate/documents/policies/F00-212.pdf>