

# MATH 227: Calculus II

## Course Syllabus - Spring 2009

**Lectures:** Every **TuTh 11:00-12:15pm** in TH 409

Instructor:	Yitwah Cheung	Dr. Janylle Carter
Office:	TH 950	TH 950
Phone:	(415) 338-1805	(415) 338-1805
Office Hours:	M 2-3pm, Tu 12:20-1:20pm and by appt.	TTh 12:15-1:15pm and by appt.
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**Discussion:** Every **F 11:10-12:00pm** in TH 211

Instructor:	Abdelhak Maoujoudi
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**Prerequisites:** Math 226 with a grade of C or better.

**Bulletin Description:** The second semester of Calculus: integration, area between curves, volume, integration by parts, partial fractions, improper integrals, parametric equations, infinite sequences and series, an introduction to Mathematica.

**Course Objectives:** The main objective of Calculus II is for students to continue learning the basics of the calculus of functions of one variable. They will study both the concepts and techniques of integration, parametric equations, and infinite sequences and series, culminating with Taylor series. They will also apply these ideas to a wide range of problems that include area between curves, volume, work, arc length and surface area. They will study approximate integration, a topic that will involve an introduction to Mathematica. 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

**Integration skills** Evaluate definite, indefinite and improper integrals exactly using basic integration techniques such as substitution, integration by parts and partial fractions;

**Applications** Setup integrals to compute areas, volumes, and evaluate average of a function over a closed interval;

**Parametric equations** Use parametric equations to compute geometric quantities such as arclength of a parametric curve and area enclosed by a loop of a parametric curve given in polar coordinates;

**Approximate integration** carry out numerical integration using Simpson's rule;

**Finding limits** Determine the limit of a given sequence of real numbers;

**Convergent series** Determine whether a series is summable as well as justify using standard tests such as the ratio test;

**Power series** Compute Taylor polynomial of a given degree as well as determine the radius and interval of convergence of a given power series;

**Textbook:** *University Calculus* by Hass-Weir-Thomas.

**Homework and Reading Assignments:** Students should check the course webpage at

<http://online.sfsu.edu/~ycheung/227/>

for daily homework and reading assignments. Handouts and other useful information such as homework due dates can also be found there. Students are expected to complete all homework and reading assignments in a timely fashion. LATE HOMEWORK WILL NOT BE ACCEPTED.

**Exams:** There are 2 hour-long midterms and a two-hour final exam that will take place at the times given below.

**Midterm 1: Friday, March 20** from 11:10-12pm in TH 211.

**Midterm 2: Friday, April 17** from 11:10-12pm in TH 211.

**Final:** In TH 409 from 10:45am-1:15pm on

**Tuesday, May 19.**

**Absences:** A student is considered absent if he/she is not present at the time when attendance is taken. Each student will be allowed two unexcused absences. After that, 3 points will be deducted from the student's raw score (see next item) for each unexcused absence.

**Your Grade:** There will be at least 10 Homework Sets, each worth 10 points. In addition, there are 2 midterms, each worth 100 points, and a final exam, worth 200 points. Your *raw score* out of 500 is the sum of the combined scores on your Homework Sets (100 points) plus the sum of your midterm scores (200 points) and your score on the final (200 points) minus points deducted for unexcused absences. Your grade for the course will be based on your *normalised* score, which is your raw score divided by 5, following the scale below. A curve, if used, will only be to your advantage.

Total score	0-59	60-62	63-66	67-69	70-72	73-76
Grade	F	D–	D	D+	C–	C
Total score	77-79	80-82	83-86	87-89	90-92	93-100
Grade	C+	B–	B	B+	A–	A

**Academic Integrity:** All students are expected to adhere to the SFSU honor code. Any student caught cheating on an examination will automatically fail the course and face expulsion from the University. Each Problem Set is to be written up individually. However, students may and are in fact encouraged to discuss the homework problems with each other.

**Enrollment Status:** You are solely responsible for maintaining your own enrollment status. Check the “Withdrawl Policy” on the course webpage for the proper procedures for maintaining your enrollment status.

**DPRC:** 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](mailto:dprc@sfsu.edu)).

**Religious Holidays:** Reasonable accomodations will be made for you to observe religious holidays when such observances require you to be absent from class activities. It is your responsibility to inform the instructor during the first two weeks of class, in writing, about such holidays.

# MATH 227: Course Schedule

Spring 2009

Text: *University Calculus* by Hass-Weir-Thomas.

In the table below, A.B refers to Section B of Chapter A.

1/27	Tu	4.6	3/24	Tu	no class
1/29	Th	4.7	3/26	Th	no class
1/30	F	discussion	3/27	F	no class
2/3	Tu	5.1	3/31	Tu	no class
2/5	Th	5.2	4/2	Th	6.4
2/6	F	discussion	4/3	F	discussion
2/10	Tu	5.3	4/7	Tu	7.1
2/12	Th	5.4	4/9	Th	7.2
2/13	F	discussion	4/10	F	discussion
2/17	Tu	5.5	4/14	Tu	7.3
2/19	Th	5.6	4/16	Th	Review
2/20	F	discussion	4/17	F	Midterm #2
2/24	Tu	5.7	4/21	Tu	7.4
2/26	Th	6.1	4/23	Th	7.5
2/27	F	discussion	4/24	F	discussion
3/3	Tu	6.2	4/28	Tu	7.6
3/5	Th	6.3	4/30	Th	7.7
3/6	F	discussion	5/1	F	discussion
3/10	Tu	8.1	5/5	Tu	7.8
3/12	Th	8.2	5/7	Th	7.9
3/13	F	discussion	5/8	F	discussion
3/17	Tu	8.3	5/12	Tu	7.10
3/19	Th	Review	5/14	Th	Review
3/20	F	Midterm #1	5/15	F	discussion