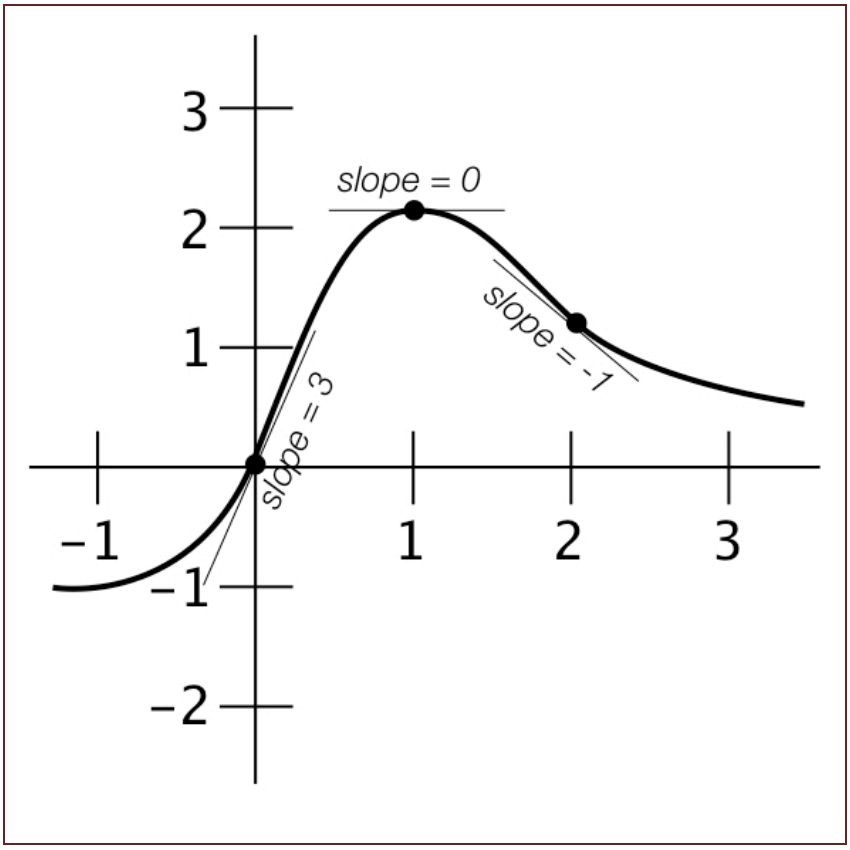
CALCULUS I

MATH 75
FALL 2012
DR. NOGIN
CLASS #75932
MTWTH 12-12:50
S2 308
MML ID
nogin56624
CALIFORNIA STATE UNIVERSITY FRESNO



Welcome to Math 75! Math 75 is a 4-unit course, covering inequalities, functions, graphs, limits, continuity, differential calculus, introductory integral calculus, and applications. The prerequisite for this course is Math 6 or equivalent, plus a satisfactory score on the Calculus Readiness Test and the ELM. You are expected to be proficient in high school algebra, geometry, and trigonometry. The course covers chapters 1 through 5 of the text, although chapter 1 is considered to be review. If it does not seem like review, you should review it very soon!

Calculus is a very interesting and very useful subject. This course, however, will be demanding. I cannot slow down for you, because you will have to complete assignments and take exams governed by coordinated instruction. I will do my very best to teach it to you, but *you* must ultimately take the responsibility to stay caught up, seek extra help when you need it, and monitor your progress in the class. I, and the other Math 75 instructors, want you to succeed and are ready to help you learn!

I am looking forward to this course. I hope my enthusiasm rubs off on you!

Your Math 75 Team

	Dr. Katherine Kelm *Course coordinator*	**Dr. Maria Nogin**	**Dr. Doreen De Leon**	Manny, your Supplemental Instruction (S.I.) Leader, says: I am here to help you get extra practice and succeed in this class! Watch for a schedule of S.I. sessions coming soon!
Office	PB 346	PB 340	PB 350	
Office Hours	MTWTh 2-3p	MW 9-10a TTh 10-11:30a	MW 9:30-10:30a TTh 2-3p	
E-Mail (@csufresno.edu)	kbyler	mnogin	doreendl	
Phone	278-4633	278-4908	278-4009	

IMPORTANT: Math 75 is a partially team-taught course, so many policies, office hours, and e-mail feedback are governed and administered by the Math 75 team as a whole. This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were absent. Complete course details can be found on Blackboard.

The University policies on Classroom Behavior, Cheating and Plagiarism, Copyrights, Students with Disabilities, and Computer Use will be followed. The University Honor Code will be followed. Please see the Blackboard syllabus, the University course catalogue or the following link for more information:

http://www.csufresno.edu/academics/documents/RequiredSyllabusPolicyStatements.doc

Learning Objectives

What you should understand upon completion of this course

- The benefits and limitations of mathematical models.
- The concept of a limit.
- Continuous functions.
- The definition of a derivative as a limit of difference quotients.
- How to interpret the derivative in the context of real-world examples.
- The definition of antiderivatives.
- The integral as an area or the distance traveled by a moving object
- The idea of an "area function" under the graph of a function *f*, and how it relates to the function *f* itself.
- The two parts of the Fundamental Theorem of Calculus.
- The relationship between integrals and antiderivatives.

Learning Outcomes

What you should be able to do upon completion of this course

- Use functions to represent changing quantities.
- Compute limits of algebraic expressions.
- Compute the derivative of any polynomial, rational function, trigonometric function, root function, or any combination of such functions.
- Identify the ways in which a function can fail to have a derivative.
- Compute certain simple antiderivatives
- Find maximum or minimum values of functions.
- Solve "real-world" optimization problems by converting them into the language of calculus.
- Approximate zeros of a function using Newton's Method.
- Compute the definite integral of any polynomial or root function.
- Define the definite integral as a limit of Riemann sum approximations.

Course Schedule

Week	Dates	M	T	W	Th	Sections	Description
1	AUG			22	23	1.1-1.3	Review of functions; representing functions; inverse, exponential and logarithmic functions
2	AUG	27	28	29	30	1.4, 2.1-2.3	Trig. functions and their inverses; the idea and definition of limits; techniques for computing limits
3	SEP	**X**	4	5	6	2.4-2.6	**Labor Day**; infinite limits; limits at infinity; continuity
4	SEP	**10**	**11**	**12**	**13**	3.1, 3.2	**Exam 1 in ATC**; the derivative; rules of differentiation
5	SEP	17	18	*19*	20	3.3-3.5	*Last day to drop w/o **W***; product and quotient rules; deriv's of trig. functions; derivatives as rates of change
6	SEP	24	25	26	27	3.6-3.8	Chain rule; implicit differentiation; derivatives of exponential and logarithmic functions
7	OCT	1	2	3	4	3.9, 3.10	Derivatives of inverse trig. functions; related rates
8	OCT	**8**	**9**	**10**	**11**	4.1, 4.2	**Exam 2 in ATC**; max's & min's; what derivatives tell us
9	OCT	15	16	17	18	4.2-4.4	Graphing functions; optimization
10	OCT	22	23	24	25	4.4-4.6	Optimization; linear approximation and differentials
11	OCT	29	30	31	1	4.6, 4.7	Mean Value Theorem; l'Hôpital's Rule
12	NOV	**5**	**6**	**7**	**8**	4.8	**Exam 3 in ATC**; Newton's Method; antiderivatives
13	NOV	**X**	13	14	15	5.1, 5.2	**Veterans' Day holiday**; approximating areas under curves; definite integrals
14	NOV	19	20	**X**	**X**	5.3	Fundamental Thm. of Calculus; **Thanksgiving Holiday**
15	NOV	26	27	28	29	5.4, 5.5	Working with integrals; substitution rule
16	DEC	**3**	**4**	**5**	**6**		**Exam 4 in ATC**; review
17	DEC	10	11	12	**C**		Final review; **Consultation**

The final exam will be on **SATURDAY, Dec. 15, 3:30-5:30pm** (location TBA), *NOT* during finals week.
Please see the online syllabus on Blackboard for complete schedule, policy and grading information.