San José State University   Mathematics Department   Fall 2012

MATH 71   Calculus for Business and Aviation   Section 4   Course #48019
Duncan Hall, Rm. 318   MW 1630 -- 1745   Joe Jordan, Instructor
Office hours: MW 1445 -- 1545, Rm.621, Duncan Hall

Catalog Description
Functions and graphs, limits, continuity, differentiation, integration, partial differentiation. Emphasis on business and economics applications.   3 units

Prerequisites
Satisfaction of the ELM requirement. A satisfactory score on the Calculus Placement Exam, or a grade of "C-" or higher in MATH 8, or a SAT Math score of 550 or higher, or an ACT Math score of 23 or higher. Note: For students who pass this course with a grade of "C" or better ("C-" not accepted), Area B4 will be waived.

Textbook
College Algebra and Applied Calculus: Math 8 & 71 for San Jose State University, Larson & Hodgkins, Cengage Learning.   A special custom paperback edition of this text (perhaps unavoidably bundled with an Enchanced WebAssign access card?) should be available in the SJSU bookstore.   IF THERE'S A WAY TO *PAY LESS* TO GET THIS BOOK *WITHOUT* WebAssign, DO THAT (AND PLEASE LET ME KNOW THE STORY ON THAT; THANKS).   IF, HOWEVER, *YOU WANT* TO BE ABLE TO USE WEBASSIGN (OR HAVE TO PAY FOR IT, ANYWAY), **LET ME KNOW** ABOUT THAT **ASAP**, AND I'LL SEE WHAT I CAN WORK OUT WITH THE WebAssign people for possible use just by a few students at their option.

Course Objectives
Computing interest and learning about limits, continuity, and derivatives of polynomials, rational functions, exponential and logarithmic functions. Using derivatives in applications to business and other fields. Also learning about integrals of functions and methods of integration such as the substitution rule. In addition, students will learn about functions of several variables, their partial derivatives, and Lagrange multipliers.   Students will also learn about probability distributions.

Student Outcomes
A student should be able to:
1. Use the properties of exponential functions and logarithms
2. Compute simple, compound and continuous interest
3. Explain the meaning of the limit of a function.
4. Compute limits.
5. Find derivatives of functions.
6. Use the concept of the derivative in applications and be able to solve max./min. problems.
7. Evaluate integrals using substitutions.
8. Compute partial derivatives.
9. Use Lagrange multipliers to find the extreme values of functions of several variables.
10. Understand probability density functions and properties including mean, variance, and CDF.

Calculators
No calculators are allowed on quizzes and exams.   They're fine for homework and some in–class exercises.

Outcome Assessment
Three exams and a **comprehensive** final will be given. The lowest exam score will be dropped.
Numerous homework problems will be assigned. Homework will sometimes be graded, and quizzes will be given (and all graded).
Students who intend to use this course to satisfy the Mathematical Concepts requirement for General Education must earn a "C" or higher grade.

Topics and Outline

Sections in Text	Topics	# Weeks
1.2	Mathematical Modeling - Simple Interest	0.5
4.1 – 4.3	Exponential and Logarithmic Functions; Compound and Continuous Interest	1
7.1 – 7.7	Limits and Derivatives	3
8.2 – 8.5	Uses of Derivatives in Mathematics	1.5
9.1 – 9.2	Applications of Derivatives	1.5
10.1-10.5	Derivatives of Exponential and Logarithmic Functions	1
11.1-11.4	Integration with Applications	2
11.5 [Optional]		
13.1-13.4, 13.6	Partial derivatives; Lagrange Multipliers	2
13.2 [Discuss planes only.]		
13.3 [Discuss briefly.]		
16.3-16.4	Probability Distributions	1
(Students will print the material from the web.)		
Exams and Quizzes		1.5

Total time: 15 weeks

+ (more) ………..

……………

Grading

				Minimum # points for letter grade			
Three exams	210 points	450 A-	475 A				
Comprehensive final	150	375 B-	400 B	425 B+			
Quizzes	100	300 C-	325 C	350 C+			
Homework	40	225 D-	250 D	275 D+			
Total	500 points	NOTE: 325 points or more are needed to satisfy the GE requirement.					

University, College, or Department Policy Information:

a. Academic integrity statement (from Office of Judicial Affairs):
"Your own commitment to learning, as evidenced by your enrollment at San José State University, and the University's Academic Integrity Policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at http://www2.sjsu.edu/senate/S04-12.pdf .   THIS CLASS: CHEAT ➔ F !

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 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 DRC to establish a record of their disability."

FINAL EXAM: THURSDAY, MAY 17, 1445 - 1700