UC Santa Cruz, Baskin School of Engineering
Department of Applied Mathematics and Statistics
Mathematical Methods for Economists I: AMS 11A/ECON 11A
Fall 2011, Classes: Mon/Wed/Fri 9:30-10:40am
Classroom: J Baskin Engineering 152
Office hours: Mon/Wed 11:00am-12:00pm, Thu 3:00-4:00pm
Dr.-Ing. Dejan Milutinović
Office: Room 127, Baskin Engineering Building,
Web page: www.soe.ucsc.edu/classes/ams011a/Fall11/*

ECON/AMS 11A - Mathematical Methods for Economists, I - is an introduction
to differential calculus in one variable, and its applications to economics. The
course begins with a very brief review of some important precalculus topics and
an equally brief introduction to mathematical modeling. Differential calculus
itself begins with the mathematical concept of a limit. We use limits to define
the important concepts of continuity and differentiability, and we learn to compute the derivatives of the functions that we commonly use to model economic
variables, i.e., polynomials, power functions, exponential functions, logarithm
functions, and combinations of these functions. Other technical topics include
implicit differentiation, Taylor polynomials and Taylor approximation. While
mastering the technical aspects of differentiation, we also learn how differential
calculus is applied to economics. Applications include marginal analysis, elasticity, and optimization in one variable.

*Students are advised to regularly check the course webpage for updates.

Tenative week-by-week course plan:

9/23-9/28 Introduction and review (Chapters 3 and 4)
9/30-10/05 Limits and Continuity (Sections 10.1-10.3)
10/07-10/12 Derivative and Rules for Differentiation (Sections 11.1-11.2)
10/14-10/19 Derivative as a Rate of Change. Product and Quotient Rule (Sections 11.3-11.4)
10/21 Exam 1*
10/24-10/31 Chain Rule; Derivative of Logarithmic and Exponential functions (Sections 11.5, 12.1-12.2)
11/02-11/07 Elasticity of Demand. Implicit Differentiation (Section 12.3-12.4)
11/09-11/14 Higher order derivatives and Taylor Polynomials
11/16 Exam 2*
11/18-11/21 Extreme Values. Critical Points (Sections 13.1-13.2)
11/23-11/28 Concavity. Second-Derivative Test (Sections 13.3-13.4)
11/30-12/02 Applied Maxima and Minima (Section 13.6)
12/07 Final Exam (4:00-7:00pm)*
* A Review Section is held before each exam.

Prerequisites: Score of 31 or above on Mathematics Placement Exam. Students who do not place into precalculus should enroll in Math 2. Students who have already taken Mathematics 11A and 19A should not take this course. (Also offered as Economics 11A. Students cannot receive credit for both courses.)

Textbook: Introductory Mathematical Analysis for Business, Economics and the Life and Social Sciences, 13th edition (**required**), by Haeussler, Paul and Wood.

Lecture notes will be posted on this course web page under the link "Course Material"[1].

Homework will be posted on the course webpage. Homework deadlines are firm; no late homework accepted for any reason. The average score on your 7 best homework assignements contributes to your final score. Homework should be dropped in the AMS11A homework box located opposite my office; those in my mailbox, slipped under my office door, etc. will not be considered. It should be stapled with your name PRINTED (so we can read the name) on it. Please bear in mind that we will not provide solutions to the current homework assignment. Solutions to the previous assignments will be posted under the link "Homework". Also, if you do not have all of the homework done, turn in what you have managed to do by the deadline.

Class codes: In order to check one's homework/quiz/exam scores, every students needs to draw a code from the brown paper bag in the class and then send it to me in an e-mail. This is to insure the privacy of students since the scores will be posted on the course webpage. Please do not wait for the end of the quarter to draw your code.

Final grade will be based on you homework, unannounced quizzes, two midterm exams and the final exam (homework 5%, quizzes 15%, the higher of your two midterm scores 25%, the lower of your two midterm scores 15%, final exam score 40%). Please note that your exam scores are not 'curved' and I don't assign letter grades to exams. I use the raw scores to compute your overall score in the class (which is also not 'curved').

E-mail: It is essential that your e-mail message contains a proper salutation. In addressing me, both in person and by e-mail, please use the appropriate title, which is Professor. Due to the student/faculty ratio, I do not guarantee that every e-mail will receive a response, but I will make a strong effort to respond to appropriate e-mails (only those coming from ucsc e-mail addresses).

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[1]Please note that students may be disciplined for selling, preparing, or distributing course lecture notes for any commercial purpose, whether or not the student himself or herself took the notes.

Cheating (dishonesty) in any form will not be tolerated. Cheating devalues everyone's grades - **you should not tolerate it either**. Students who help others cheat are also cheaters. Students caught in any cheating will be dropped from the course and receive a failing grade. Such students will also be reported to the Economics and/or AMS departments and to their college provost. **Please bring your student id to every exam**.

Further notes:

- If you qualify for classroom accommodations because of a disability, please get an Accommodation Authorization from the Disability Resource Center (DRC) and submit it to me in person outside of class (e.g., during office hours)**within the first two weeks of the quarter**. Contact DRC at 459-2089 (voice), 459-4806 (TTY), or http://drc.ucsc.edu for more information on the requirements and/or process.

- For questions, I am always available in the class and during my office hours.

- By enrolling in the university, students are automatically agreeing to abide by policies, including those on academic misconduct. Academic integrity and scholarship are core values that should guide our conduct and decisions as members of the UCSC community. Plagiarism and cheating contradict these values, and so are very serious academic offenses. Penalties can include a failing grade in an assignment or in the course, or suspension or expulsion from the university. Students are expected to familiarize themselves with and follow citation practices (http://nettrail.ucsc.edu/ethics/index.html) and the university's Rules of Conduct regarding student conduct and discipline: http://www2.ucsc.edu/judicial/ handbook.shtml.