

Econ 1088 - 002 Math Tools for Economists II

Course Syllabus — Spring 2008

Instructor: Tianle Zhang

A little about me: I come from Guangzhou, a city in southern China. I am currently a Ph.D. student in Economics Department. My research interest is Industrial Organization, which studies the strategic behavior of firms, the structure of markets and their interactions. I have been teaching Econ 1088 since fall 2006.

Class Hours: MWF 2:00-2:50 PM

Class location: HUMN 1B80

Office: Econ 307

Office Hours: Wednesdays: 3-5pm or by appointment

E-mail: tianle@colorado.edu

Course Website: (Includes information specific to my class. For example, homework, quizzes and exam information)

<http://ucsu.colorado.edu/~tianle>

Econ 1088 common website: (Includes materials common to all sections of 1088 as well as review problems)

<http://www.colorado.edu/economics/courses/ECON1088/1088home.html>

“Why do economists need math?”

Here are some reasons given by Greg Mankiw.

“Every economist needs to have a solid foundation in the basics of economic theory and econometrics, even if you are not going to be either a theorist or an econometrician.”

“Math is good training for the mind. It makes you a more rigorous thinker.”

For additional reasons, go to the following link

<http://gregmankiw.blogspot.com/2006/09/why-aspiring-economists-need-math.html>

Course Description:

This class is a continuation of ECON 1078. The goal of Econ 1088 is to help students to acquire the mathematical tools they will need in advanced economic courses (e.g. Intermediate Microeconomics and Macroeconomics). By the end of the semester, you will need to understand derivatives, know how to take derivatives, and understand their importance in economics. We will start with single-variable functions and move onto functions of many variables. The class format includes lecture and individual/group problem solving. While I will lecture most of the class time you will have a considerable amount of time doing practice exercises in class. You are encouraged to participate actively and ask questions in class. This will help you understand the course material better. Attending class will not guarantee passing the course. You are expected to spend at least 4 hours per week after class reviewing lecture notes, reading the textbook and doing homework.

Prerequisite:

Econ 1078 or its equivalent

Textbooks Required:

Knut Sydsaeter and Peter Hammond, “Essential Mathematics for Economic Analysis”, Second edition (You will be expected to have, and know, this book throughout your undergraduate career as an economics major.)

Homework and Quizzes:

Homework will be assigned so that you can practice with the new material. Moreover, 6 quizzes will be given. The two lowest quizzes will be dropped at the end of the semester. As such no make up quizzes will be given.

Exams:

Three midterms and one comprehensive final will be given. All exams are given in the classroom. Your grade on the lowest of the three midterms will be dropped. No additional make-up midterms will be given.

Midterm 1	Wednesday	February 13th, 2008
Midterm 2	Wednesday	March 12th, 2008
Midterm 3	Wednesday	April 9th, 2008
Final Exam	Saturday (1:30pm-4:00pm)	May 3rd, 2008

Grading:

Homework	10%
Top 4 quizzes	20% (5% each)
Top 2 Midterms	30% (15% each)
Cumulative Final	40%

Your final letter grade will be determined based on a following scale.

90-100 A

80-89 B

70-79 C

60-69 D

Below 60 F

Tentative Course Outline

Chapter 6 Differentiation:

6-1 Slopes of Curves

6-2 The derivative. Tangents

6-3 Increasing and Decreasing Functions

6-4 Rates of Change

6-5 A Dash of Limits

6-6 Simple Rules for Differentiation

6-7 Sums, Products, and Quotients

6-8 Chain Rule

6-9 Higher Order Derivatives

6-10 Exponential Functions

6-11 Logarithmic Functions

Chapter 7 Derivatives in Use:

7-1 Implicit Differentiation

7-2 Economic Examples

7-7 Why Economists Use Elasticities

Chapter 8 Single-Variable Optimization:

8-1 Introduction

8-2 Simple Tests for Extreme Points

8-3 Economic Examples

8-4 The Extreme-Value Theorem

8-5 Further Economic Examples

8-6 Local Extreme Points

8-7 Inflection Points

Chapter 11 Functions of Many Variables:

11-1 Functions of Two Variables

11-2 Partial Derivatives with Two Variables

11-5 Functions of More Variables

11-6 Partial Derivatives with More Variables

11-7 Economic Application

11-8 Partial Elasticities

Chapter 13 Multivariable Optimization:

We will cover this in detail commensurate with available time

General policies of this class:

- 1) It is the students' responsibility to take control of their own education. If you are having problems, I am more than willing to help you. You just need to approach me at some point.
- 2) No make-ups will be given. If you miss an exam or a quiz, you will be given a zero. Moreover, if you need to take the final other than the scheduled time, I should be informed at least two weeks ahead. You can only rearrange your final if you have three or more finals on the same day.
- 3) According to the university policy, no grades are allowed to be released via email. In other words, I am prohibited from emailing any grade to you.
- 4) You are responsible for any missing class.
- 5) Any concern or question about grading of a quiz or a midterm should be raised within a week after you get back the quiz or the midterm.

Even more general policies:

- 6) All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at <http://www.colorado.edu/policies/honor.html> and at <http://www.colorado.edu/academics/honorcode/>
Honor Code: "On my honor, as a University of Colorado at Boulder student, I have neither given nor received unauthorized assistance on this work."
- 7) If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, and www.Colorado.EDU/disabilityservices.
- 8) Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Students can see full details at http://www.colorado.edu/policies/fac_relig.html
- 9) Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to behavioral standards may be subject to discipline. Faculty has the professional responsibility to treat students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which students express opinions. See policies at <http://www.colorado.edu/policies/classbehavior.html>