

ECON1078-004 Math Tools for Economists

Fall 2006

Instructor: Henry Chen

Class Meeting Times: MWF 12-12:50 pm @ CLRE 207

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Relevant materials to the course will be posted here. Specifically, recommended homework problems.

Joint Website: <http://www.colorado.edu/economics/courses/ECON1078/1078home.html>

When you register for this class, you must have noticed that there are several different sections provided. Find the common resources we share at the joint website.

Office Hours: Monday 2:00-4:30 pm and by appointment

Everyone is highly encouraged to attend office hours as often as they feel is necessary to help master the materials of the course.

Course Description and Objectives:

The goal of this course is to provide students the basic mathematical tools needed for economic analysis. In other introductory economic courses, you will learn many economic concepts and analyses simply by drawing graphs. For example, other things unchanged, outward shift of the demand curve will push up the equilibrium price. However, when you want to move from this “qualitative” analysis to “quantitative” analysis and investigate the data from the real world, you will need mathematical tools. You will learn marginal analysis in the very beginning of microeconomics. The differentiation concept covered in this course is very helpful for applying the marginal analysis to data with continuous variables. In macroeconomics, you will learn that there are some relationships among GDP, consumption, investment, etc. Equation and function play the fundamental roles in studying these relationships. The materials covered in this course are: rules of algebra, solving linear and nonlinear equations, essentials of set theory, functions, and differentiation. They will be the preparation for your further studies. For a complete list of topics see the course schedule that follows.

Textbook:

Essential Mathematics for Economic Analysis, 2nd edition, by Knut Sydsaeter, and Peter Hammond. This is required.

Calculator Note:

As this is a course designed to teach mathematical techniques you will need a calculator that can do basic mathematical functions. These include exponentials, logarithms, radicals, and factorials (\log , \ln , e^x , n^x and $x!$). Any basic scientific calculator will perform these functions. While a graphing calculator may be useful in doing some of the homework problems, **you cannot use a graphing calculator on the exam.**

Grading:

Top N-2 quizzes will make up 20% of your grade (N = 12 in this case)

2 Midterms will make up 50% of your grade (25% each)

Cumulative Final will make up 30% of your grade

100-93%	A	73-76%	C
90-92%	A-	70-72%	C-
87-89%	B+	67-69%	D+
83-86%	B	63-66%	D
80-82%	B-	60-62%	D-
77-79%	C+	below 60%	F

Tentative Course Schedule:

Week of	Course Material	Topics	Wednesday Quiz/Exam
8/28	1.1, 1.2, 1.3	Algebra Basics	Pretest
9/4	1.4, 1.5, 1.6,	Fractions and Inequalities	Quiz 1
9/11	1.7, 2.1, 2.2,	Simple Equations	Quiz 2
9/18	2,3, 2.4, 2.5	Radicals, Equations in One Variable	Quiz 3
9/25	Midterm 1 , 3.1, 3.4,	Logic and Mathematical Proofs	Midterm 1 (9/27)
10/2	3.5, 3.6, 3.7	Essentials of Set Theory	Quiz 4
10/9	4.1, 4.2, 4.3	Functions of One Variable	Quiz 5
10/16	11.1, 4.4, 4.5	Functions of Two Variables; Linear Function	Quiz 6
10/23	4.6, 4.7, 4.8	Quadratic, Polynomial and Power Function	Quiz 7
10/30	4.9, 4.10	Exponential & Logarithmic Functions	Quiz 8
11/6	Midterm 2 , 5.1, 5.2,	Shifting Graph and Functions Transform	Midterm 2 (11/8)
11/13	5.3, 5.4	Inverse Functions	Quiz 9
11/20		Fall Break & Thanksgiving!	
11/27	5.5, 5.6	General Function	Quiz 10
12/4	6.1, 6.2	Slopes of Curves, The Derivative	Quiz 11
12/11	6.3, Review		

Make-Up Exams:

There will be no make-up exam for final. Only one make-up exam for one of your midterm will be provided. Of course, it will make up 25% of your grade. However, it will be cumulative and cover both the materials in the first and second midterm and become much more difficult. You can replace **ONLY ONE** of your lowest midterm by this make-up exam. The make up exam is scheduled at 6-7pm at Wednesday, December 6th. The place for this make-up exam will be announced later.

Honor Code:

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this