

Syllabus for Math Tools for Economists I (Econ 1078-001) Fall 2006

Instructor: Yiting An

I came from Shanghai, China and joined the Ph.D program here in the Economics department in 2002. Personally, I'm interested in the market structures change caused by some international factors like the coming of more productive multinational firms, cheap labor, or policy changes.

Class Meeting Times: MWF 12 – 12:50 am @ HLMS 211

Office Location: Econ 401

Office Hours: M 1:00 pm –3:30 pm
By Appointment as Necessary

Office hours are held for your benefit. It is an opportunity to come in and ask questions in a one-on-one or small group setting. Everyone is highly encouraged to attend office hours as often as they feel is necessary to help master the material of the course. It is my experience that those students who come to office hours with prepared questions do better in the course than they otherwise would have. If there is any reason that you cannot make these office hours I am willing to meet by appointment.

Contact: Yiting.an@colorado.edu

This is the best way to get in touch with me. During the week, I will do my best to respond within 24 hours to any query regarding the class. If I don't it is fair to assume that I didn't receive the message and it should be resent.

Class Website:

<http://ucsu.colorado.edu/~yyan> (Website for this section)

When you register for this class, you must have noticed that there are several different sections provide the same 1078 course. Find the common resources we share at:

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

(Joint Web Page of all 1078 sections)

Course Description and Objectives:

The goal of this class is to provide you with the mathematical tools needed for future courses in economics. We will cover algebra of polynomials, functions, basic logic, sets, solving systems of equations, and introduction of derivative. For a complete list of topics see the course schedule that follows.

This is a class designed to teach you the mathematical tools that you will need to solve economic problems. We will apply these tools to solve some basic economic problems, such as find the equilibrium price and quantity in the market, build cost and profit functions, and execute cost-benefit analysis *etc.*

Class format: Lecture, problem solving, and discussion

Lecturing and problem solving are given interactively. Small groups are strongly recommended to help you diversify the ways of solving problems and understand material. Quiz will be given in the group quiz form sometimes.

Textbook:

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

1088 adopts the same textbook. This is a very good reference book, which can always help to refresh your knowledge of algebra and calculus.

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 , $n\sqrt{\quad}$ 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:

Grades will be determined on the basis of your performance on 12 quizzes, 2 midterms, and a cumulative final exam. Midterms and quizzes will all be given on Wednesdays per the schedule below. The questions will be similar to the recommended homework problems. If you have completed and understand the homework from the previous week, the questions should be relatively easy. Your lowest 2 quiz grades will be dropped and the other 10 will be averaged together to obtain your quiz grade. The quiz grade is worth 20% of your over all grade.

The midterms will be administered on Sep. 27th, and Nov. 8th in class. Each test is worth 25% of the course grade. The midterms are not cumulative and will cover only the material since the previous test.

** There is absolutely NO make-up for each midterm. For those of the students miss the midterm due to medical absences, academic conflicts, personal reasons or religious holidays, they can have the one and only one chance to fill the missing grade by taking a make-up on Dec 6th (Wed. from 6-7pm, place to be determined).

The final exam is scheduled for Dec 19th (Tue.) from 1:30 to 4 pm. The final exam is worth 30% of your grade and will consist of two parts. A “midterm” sized section will cover all of the material after midterm #3 and be worth 15% of your grade in the course. The rest of the final will cover material from the entire course.

Final grading will be on a strait scale.

100 - 90%	A
89 - 80%	B
79 - 70%	C
69 - 60%	D
59% & below	F

12 Quizzes (Drop lowest 2) – 20% total

2 Midterms – 25% each

Final – 30% (15% for Chapter 9 material, 15% cumulative material)

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	Increasing/Decreasing Functions	Quiz 12
Final Exam on Dec 19 th from 1:30-4 pm			

Honor Code:

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/>

Expectations of Classroom Behavior:

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 have 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 polices at

<http://www.colorado.edu/policies/classbehavior.html> and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

Absences:

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. Please notify me as soon as possible so that the proper arrangements can be made. Students can see full details at http://www.colorado.edu/policies/fac_relig.html

Disabilities Statement:

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 <http://www.Colorado.EDU/disabilityservices>.

Time extensions for exams must be approved by me prior to the exam. If you have not talked to me personally prior to the exam you will not be granted an extension.

Disability Services' letters for students with disabilities indicate legally mandated reasonable accommodations. Other letters/requests you may receive from agencies such as the Wardenburg Student Health Center, or other health providers, such as physicians or counselors, are recommendations you may choose to follow to assist students but are not necessarily legal mandates. The syllabus statements and answers to

Frequently Asked Questions can be found at
<http://www.colorado.edu/disabilityservices>