

Course Syllabus

ECON 1078-001 Math Tools for Economists I

Spring 2007

Instructor: Yiting An

Class Meetings: MWF 12:00-12:50 PM

Class Location: HALE 230

Office: ECON 401

Office Hours: Monday 1:00-3:30 PM or by appointment

Contact: yiting.an@colorado.edu

Webpage: <http://ucsub.colorado.edu/~yyan>

Joint 1078 webpage:

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

This is a joint webpage of ECON 1078 instructors. It is provided as a supplement to the course materials for Econ 1078. We, all ECON 1078 instructors, maintain the page to provide questions, quizzes, and handouts so that students can access to the materials of other instructors.) Moreover, you can find homework and exams from previous semesters here.

Course Description:

This course provides an introduction to fundamental mathematics, which are essential to analyze economic problems. It is the first course in a two-course sequence. The goal of this class is to provide students with the mathematical tools for future courses in economics. We will start with a review of some basic algebraic operations, algebra of polynomials, functions and corresponding graphs, basic logic, sets, solving systems of equations, probability, and the introduction of calculus theory. For the complete list of topics, see the course schedule below. The class consists of lectures, quizzes, and in-class discussion that enhance understandings of the materials.

Required Textbook:

Essential Mathematics for Economic Analysis, 2nd edition,
Knut Sydsaeter and Peter Hammond (This textbook is a good reference book for mathematics and will be used for ECON 1088)

Calculator:

As this course is designed to teach mathematical techniques, you will need a calculator that can perform basic mathematical functions. These include exponentials, logarithms, radicals and factorials (\log , \ln , e^x , e^{-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:

Grades will be determined on the basis of your performance on 11 quizzes, 2 midterms, and a cumulative final exam.

Quizzes will be given in each Wednesday class. It can be a 20-minutes in class group/individual quiz or a take home quiz. Practice problems assigned from the textbook, and in class practice problems will be very good review material for your quizzes and exams. Your lowest quiz-grade will be dropped. The quiz grade is worth 20% of your overall grade.

The midterms will be administered on February 14th (Wednesday) and March 21st (Wednesday) 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.

The final exam is scheduled for May 7th (Monday) from 4:30 to 7 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 second midterm and be worth 15% of your grade in the course. The rest of the final will cover material from the entire course. No make-up tests will be given for final unless you talk to the instructor in advance.

Evaluation:

10 out of 11 Quizzes: 20%

Midterm Exam 1: 25%

Midterm Exam 2: 25%

Cumulative Final: 30%

Final grade will be assigned based on a following scale:

90% - 100%: A

80% - 90%: B

70% - 80%: C

60% - 70%: D

60% below: F

Make-Up Exam:

If you miss any of the midterm for some unavoidable reasons, or you are not satisfied with your midterm grades, there will be one and only one extra make-up exam hold at the end of the semester for you. The exam covers the cumulative material of both midterms. Please mark the date for this make-up exam is April 18th (Wednesday) from 6:00 to 7:00 PM.

Tentative Course Schedule and course outline:

Week of	Course Material	Topics	Wednesday Quiz/Exam
1/15	1.1, 1.2, 1.3	Algebra Basics	Pretest
1/22	1.4, 1.5, 1.6,	Fractions and Inequalities	Quiz 1
1/29	1.7, 2.1, 2.2,	Simple Equations	Quiz 2
2/5	2,3, 2.4, 2.5	Radicals, Equations in One Variable	Quiz 3
2/12	Midterm 1 3.1, 3.4	Logic and Mathematical Proofs	Midterm 1 (2/14)
2/19	3.5, 3.6, 3.7	Essentials of Set Theory	Quiz 4
2/26	4.1, 4.2, 4.3	Functions of One Variable	Quiz 5
3/5	11.1, 4.4, 4.5	Functions of Two Variables; Linear Function	Quiz 6
3/12	4.6, 4.7, 4.8	Quadratic, Polynomial and Power Function	Quiz 7
3/19	4.9, 4.10 Midterm 2	Exponential & Logarithmic Functions	Midterm 2 (3/21)
3/26		Spring Break	
4/2	5.1, 5.2, 5.3	Shifting Graph and Functions Transform	Quiz 8
4/9	5.4, 5.5, 5.6	Inverse Functions, General Function	Quiz 9
4/16	6.1, 6.2	Slopes of Curves, The Derivative	Quiz 10
4/23	6.3, 6.4, 6.5	The Derivative, Increasing/Decreasing Functions	Quiz 11
4/30	Review		
<i>Final Exam on May 7th (Monday) from 4:30-7 pm</i>			

Additional Notes:

- Office Hours are held for your benefit. You are highly encouraged to come to my office hours with prepared questions. As it is seen from my experience, students who come to the office hours usually do better in this course.
- Make sure to check the webpage before going to the class. I will usually update the webpage every weekend. So please check it and notice my announcement.
- Doing exercises in the textbook and quizzes will help you learn how to use mathematical tools and familiarize you with problem solving techniques. You are encouraged to work in a group but must turn in answer sheets individually. The solution will be posted on the class webpage after the due date.
- If you have three or more final examinations on the same day, you can arrange to take the LAST EXAM scheduled that day at an alternated time. It is your responsibility to notify me no later than six weeks into the semester. You are expected to provide evidence that you have three or more examinations to qualify for exceptions.
- After each exam, the grade will be posted. It is also your responsibility to verify your grades and inform me as soon as possible if there is any incorrectness.
- Lastly, if you are having problems in lessons, I am more than willing to help you. You just need to approach me either after regular lecture's class time or during my office hours.

University Policies:

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 nonacademic 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. Faculties 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

Religious Observance Policy:

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 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 Health Center, or other health providers (physicians or counselors) are not necessarily legal mandates. The syllabus statements and answers to Frequently Asked Questions can be found at <http://www.colorado.edu/disabilityservices>