

UNIVERSITY OF COLORADO AT BOULDER
Department of Economics

Course Syllabus

ECON 1078-004 Math Tools for Economists I

Spring 2010

Instructor: Watcharapong Ratisukpimol

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

Class Location: ENVD 120 (Environmental Design)

Office: ECON 401 (3rd floor of ECON building)

Office Phone: (303)-492-7116

Office Hours: MWF 10:30 - 11:30 AM or by appointment

Webpage:

<https://webfiles.colorado.edu/ratisukp/>

The webpage is the most important resource for this class. All handouts, homeworks, quizzes, exams and answer keys are going to be posted on this site. It is your responsibility to check any updated information from the class 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.

E-mail: ratisukp@colorado.edu (preferred method of contact and please include "ECON 1078" in subject of the e-mail.)

Class Time: January 11th – April 30th, 2010

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 and the introduction of calculus theory. For the complete list of topics, see the course schedule below. The class consists of lectures, quizzes, and homeworks that enhance understandings of the materials.

Required Textbook:

Essential Mathematics for Economic Analysis, 3rd edition,
 Knut Sydsaeter and Peter Hammond (This textbook is a good reference book
 for mathematics and also 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 , $\sqrt[n]{x}$ 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:

The scores for the course will be based on the standard scale:

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+	0-59%	F

Your grade will come from the following breakdown:

Quizzes	10%
Homeworks	10%
Midterm Exam 1	20%
Midterm Exam 2	20%
Cumulative Final	40%

Quizzes:

There will be a total of six in-class and closed-book quizzes given during the semester. The lowest of your quiz score will be dropped. There will be no makeup quizzes given.

Homeworks:

There will be a total of eleven homeworks. As with the quizzes, the lowest of your homework score will be automatically dropped. These homeworks are intended to provide practice and will be similar to problems you will see on quizzes and exams. There will be no makeup homework given. Late homework will not be accepted since solutions will be posted online shortly after it is due.

Exams:

We will take a total of three exams in this course. The midterms will be administered on February 10th (Wednesday) and March 31st (Wednesday). These exams will be held during the normal class time. If you miss a midterm exam, the weight of that exam will carry over onto the final. The final exam is **compulsory** and **cumulative**. It is scheduled on May 1st (Saturday) from 7:30 to 10:00 PM in our

normal classroom. If you have three final exams scheduled for this day, and this is the last of your exams, you can take the final on another day.

Tentative Course Schedule and course outline:

This schedule is subject to change if necessary. Any scheduling will be announced in class and posted on the class webpage.

Week of	Course Material	Topics	Quiz/Exam
1/11	1.1, 1.2, 1.3, 1.4	Algebra Basics	
1/18	1.5, 1.6,	Fractions and Inequalities	
1/25	1.7, 2.1, 2.2,	Simple Equations	Quiz 1
2/1	2.3, 2.4, 2.5	Radicals, Equations in One Variable	Quiz 2
2/8	Midterm 1	Midterm Review	Midterm 1 (2/10)
2/15	3.1, 3.2, 3.4, 3.5,	Summation, Logic	
2/22	3.6, 3.7, 4.1	Set Theory, Functions of One Variable	Quiz 3
3/1	4.2, 11.1, 4.3, 4.4	Linear Function, Functions of Two Variables	
3/8	4.5, 4.6, 4.7	Quadratic and Polynomial Functions	Quiz 4
3/15	4.8, 4.9, 4.10,	Power, Exponential and Logarithmic Functions	
3/22		No class (Spring Break)	
3/29	Midterm 2	Midterm Review	Midterm 2 (3/31)
4/5	5.1, 5.2, 5.3	Shifting Graph and Inverse Functions	
4/12	5.4, 5.5, 5.6	Graphs, Distance, General Function	Quiz 5
4/19	6.1, 6.2, 6.3	Slope of Curves, Derivative	
4/26	Final Review	Review for Final Exam	Quiz 6
Final Exam on May 1st (Saturday) from 7:30-10:00 PM			

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.
- You are encouraged to work with your classmates. Study group is strongly recommended. Try to find your group members at the beginning of the semester.
- 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 homework and exercises from the textbook will help you learn how to use mathematical tools and familiarize you with problem solving techniques.
- 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 the lecture's class time or during my office hours.

Policies:

Mobile Phones, Laptops, Newspapers and Other Class Distractions:

Please turn off all mobile phones and other electronic devices that may disrupt the class. Disruptive electronics and behavior will not be tolerated. Disruptive

behavior includes, but is not limited to, reading the newspaper or magazine, working on your laptop, working on homework or reading for other classes, talking to classmates, listening to headphones, text messaging, playing with your pets, etc.

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

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/>

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>

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