

UNIVERSITY OF COLORADO AT BOULDER
Department of Economics

Course Syllabus

ECON 1088-100 Math Tools for Economists II

Summer 2007

Instructor: Watcharapong Ratisukpimol

Class Meetings: MTWRF 12:45-2:20 PM

Class Location: HLMS 241 (Hellems Arts and Sciences)

Office: ECON 309C

Office Phone: (303)-492-7195

Office Hours: Tuesday and Thursday 11:00 AM - 12:30 PM or by appointment

Webpage:

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

(The webpage is the most important resource for this class. All notes, homework, answer keys are going to be posted on this site. It is your responsibility to check any updated information from the class webpage.)

E-mail: watcharapong.ratisukpimol@colorado.edu (preferred method of contact and please include "ECON 1088" in subject of the e-mail.)

Class Time: June 4th – July 6th, 2007

Course Description:

This course provides an introduction to fundamental mathematics, which are essential to analyze economic problems. It is the second course in a two-course sequence. This course is a continuation of ECON 1078. The goal of this class is to provide students with the mathematical tools for future courses in economics. Basically, it consists of two parts: derivatives and integrals. These tools will help you to better understand the mathematical framework on which economic models are based. We will start with a review of ECON 1078, limits and derivative, the rules of differentiation, optimization in the case of single variables and many variables and the rules of integration. Economic applications will also be introduced. For the complete list of topics, see the course schedule below. The class consists of lectures, homework, and in-class discussion that enhance understandings of the materials.

Prerequisite: ECON 1078 or equivalent

Required Textbook:

Essential Mathematics for Economic Analysis, 2nd edition,
Knut Sydsaeter and Peter Hammond

Note that this textbook is the official mathematics reference book for your undergraduate career as Economics major. All of the faculty will assume that you have a copy of the book and know its content. You are expected to keep this book until you graduate.

Recommended: A Scientific Calculator**Grading:**

Grades will be determined on the basis of your performance on homeworks, 3 midterms, and a cumulative final exam. Homework will be assigned weekly and it is a vital part of learning to use math tools and applications. Your lowest homework-grade will be dropped. The homework grade is worth 20% of your overall grade. No late homework will be accepted since the solutions will be posted on the website immediately.

The midterms will be administered on June 15th (Friday), June 22nd (Friday) and June 29th (Friday) 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 lowest in-class midterm grade will be dropped.** If you miss the exam for some reason, there will be no make-up exam.

The final exam is **compulsory** and **cumulative**. It is scheduled on July 6th (Friday) from 12:45 to 2:20 PM. The final exam is worth 30% of your grade. No make-up tests will be given for final unless you talk to the instructor in advance. It cannot be replaced with any other exam under any circumstances. You can only rearrange your final if you have **three or more** finals on the same day.

Evaluation:

Homework	20%
Midterm Exam 1	25%
Midterm Exam 2	25%
Midterm Exam 3	25%
Cumulative Final	30%

Exam Schedule:

Exam	Date
Midterm Exam 1 (In-Class)	June 15 th , 2007
Midterm Exam 2 (In-Class)	June 22 nd , 2007
Midterm Exam 3 (In-Class)	June 29 th , 2007
Final Exam (In-Class)	July 6 th , 2007

Final grade will be assigned based on a following scale but I reserve the right to curve the grades.

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

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.

Date	Topics	Course Material	Homework
6/4	6.5, 6.1, 6.2, 6.4	Review from ECON 1078 and Limits	
6/5	6.6, 6.3 6.7	Derivatives and Rules of Differentiation	
6/6	6.8, 6.9	Chain Rule and Higher Order Derivatives	Homework 1
6/7	6.10, 6.11	Exponential and Logarithmic Functions	
6/8	7.1, 7.2, 7.4	Implicit Differentiation and Linear Approximations	
6/11	7.7, 7.8, 7.9	Elasticities and Continuity of the Function	Homework 1 Due
6/12	7.12, 8.1, 8.2	Single Variable Optimization	Homework 2
6/13	8.3, 8.4, 8.5,	Extreme Value Theorem	
6/14	8.6, 8.7	Local Extreme Points and Inflection Points	Homework 2 Due
6/15	Midterm Exam 1		
6/18	11.1, 11.2	Functions of Two Variables and Partial Derivatives	
6/19	11.3, 11.5	Functions of More Variables	Homework 3
6/20	11.6, 11.7	Partial Derivatives with More Variables	
6/21	11.8, 12.1	Chain Rules for Many Variables	Homework 3 Due
6/22	Midterm Exam 2		
6/25	12.2, 12.3	Implicit Differentiation along a Level Curve	
6/26	13.1	Multivariable Optimization	Homework 4
6/27	13.2	Multivariable Optimization	
6/28	9.1, 9.2	Indefinite Integrals and Definite Integrals	Homework 4 Due
6/29	Midterm Exam 3		
7/2	9.3, 9.4	Definite Integrals	Homework 5
7/3	9.5, 9.6	Integration by Parts and by Substitution	
7/4	Independence day (No Class)		
7/5		Review Session	Homework 5 Due
7/6	Final Exam		

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.
- Since the summer course is very intensive, you are encouraged to follow the material very closely. Read the material in advance of lectures and try to understand most of the material during the lecture. Review the lecture note and read the book every time after class.
- 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. For homework, 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.
- 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:**Class Attendance:**

Since this class is a condensed five-week course, regular class attendance and participation is essential. There are two important attendance policies in this class.

1. 3% extra credit will be offered to students who attend every lecture.
2. Students who miss 5 classes or more will receive a failing grade.

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>

+++++