

# ECON 1078-004 Math Tools for Economists I

## Fall 2010

<b>Instructor</b>	Kyungsoo Oh
<b>Class Meetings</b>	MWF 12:00-12:50, RAMY N1B23
<b>Email</b>	<a href="mailto:kyungsoo.oh@colorado.edu">kyungsoo.oh@colorado.edu</a> This is the best way to contact me. If you won't get a reply within 24 hours, please assume that I didn't get your email and resend it.
<b>Office</b>	ECON 307
<b>Office Hours</b>	Mon 1:30-3:00 and Thu 2:00-4:00 Office hours are held for your benefit. You are highly encouraged to come to my office hours with prepared questions.
<b>Course Websites</b>	The course website is opened on <i>CUlearn</i> where you will go to find general information and updates. <a href="http://www.colorado.edu/economics/courses/ECON1078/1078home.html">http://www.colorado.edu/economics/courses/ECON1078/1078home.html</a> This is the web page developed by all Econ 1078 instructors. You can find homework and exam problems from previous semesters here.

### Course Description and Objectives

The goal of this class is to provide students with the mathematical tools needed for future courses in business and economics. We will cover polynomials, functions, solving systems of equations, logic, probability, and differentiation.

### Textbook

*Essential Mathematics for Economic Analysis*, 3<sup>rd</sup> edition, by Knut Sydsater, and Peter Hammond is technically "required". Economics 1088 (Math Tools II) uses the same textbook. This is a very good reference book, which you may use in the future to refresh your knowledge of algebra and calculus. I will highly recommend that you have this book (or the 2<sup>nd</sup> edition) but I will not assign problems to be turned in. The practice problems that I will suggest come from the 3<sup>rd</sup> edition.

### 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 ( $\log$ ,  $\ln$ ,  $e^x$ ,  $\sqrt[n]{x}$  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 exams or quizzes. You also cannot use a cell phone calculator on quizzes or exams.**

## Grading

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

93-100%	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

Your grade will come from the following breakdown:

15%	Quizzes (4 scores out of 5)
15%	Problem Sets (5 problem sets)
25%	Exam 1 (Chapters 1 and 2) - Wednesday, September 22 <sup>nd</sup>
25%	Exam 2 (Chapters 3 and 4) - Wednesday, November 3 <sup>rd</sup>
30%	Final Exam (Cumulative) - Wednesday, December 15 <sup>th</sup>

## Quizzes

There will be a total of five quizzes given during the semester. The lowest of your quiz score will be dropped. *There will be no makeup quizzes given.*

## Problem Sets

For each chapter, I will suggest a list of problems from the book that will be good practice for the exams and quizzes. These problem sets should be handed in before starting the next class. Please be on time. You should show all your work to get the answer for each problem.

## Exams

We will take a total of three exams in this course. The midterm exams will be held on Wednesday September 22<sup>nd</sup> and Wednesday November 3<sup>rd</sup>. 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 will be held on Wednesday December 15<sup>st</sup> from 1:30 p.m. to 4:00 p.m. The final exam will be cumulative.

## Attendance

Although there is no grade for attendance, attendance and class participation will be duly noted. To receive a passing grade, you are required to attend a minimum of 80 percent of the lectures. A sign-in sheet will be circulated during each class, and it is your responsibility to make sure that you have signed in by the end of class. Then, if attendances will be less than 80%, your grade is automatically F.

### Tentative Course Schedule

Week of	Course Material	Topics	Quiz/Exam
Aug. 23 <sup>rd</sup>	1.1, 1.2, 1.3, 1.4	Algebra Basics	
Aug. 30 <sup>th</sup>	1.5, 1.6	Fractions and Inequalities	Quiz 1 (Fri. 9/3)
Sep. 6 <sup>th</sup>	1.7, 2.1, 2.2	Simple Equations	PS 1 (Mon. 9/6)
Sep. 13 <sup>th</sup>	2.3, 2.4, 2.5	Radicals, Equations in One Variable	Quiz 2 (Fri. 9/17)
Sep. 20 <sup>th</sup>	Midterm 1	Midterm Review	PS 2 (Mon. 9/20) Midterm 1 (Wed. 9/22)
Sep. 27 <sup>th</sup>	3.1, 3.2, 3.4, 3.5	Summation, Logic	
Oct. 4 <sup>th</sup>	3.6, 3.7, 4.1	Set Theory, Induction, Functions of One Variable	Quiz 3 (Fri. 10/8)
Oct. 11 <sup>th</sup>	4.2, 11.1, 4.3, 4.4	Linear Function, Functions of Two Variables	PS 3 (Mon. 10/11)
Oct. 18 <sup>th</sup>	4.5, 4.6, 4.7	Quadratic and Polynomial Functions	Quiz 4 (Fri. 10/22)
Oct. 25 <sup>th</sup>	4.8, 4.9, 4.10	Power, Exponential, Logarithmic Functions	
Nov. 1 <sup>st</sup>	Midterm 2	Midterm Review	PS 4 (Mon. 11/1) Midterm 2 (Wed. 11/3)
Nov. 8 <sup>th</sup>	5.1, 5.2, 5.3	Shifting Graphs, Inverse Functions	
Nov. 15 <sup>th</sup>	5.4, 5.5, 5.6	Graphs, Distance, General Function	
Nov. 22 <sup>nd</sup>	-	No class (Fall Break)	
Nov. 29 <sup>th</sup>	6.1, 6.2, 6.3	Slope of Curves, Derivative	PS 5 (Mon. 11/29) Quiz 5 (Fri. 12/3)
Dec. 6 <sup>th</sup>	Final Review	Review for Final Exam	

**Final Exam on Wednesday, December 15<sup>th</sup> 1:30-4:00 p.m.**

## **Additional Notes**

### ***Disabilities***

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>

### ***Religious Observances***

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. In this class, let me know, in advance, if you may have a conflict. Students can see full details at [http://www.colorado.edu/policies/fac\\_relig.html](http://www.colorado.edu/policies/fac_relig.html)

### ***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 has 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](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](mailto: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>

### ***Sexual Harassment***

The University of Colorado Policy on Sexual Harassment applies to all students, staff and faculty. Sexual harassment is unwelcome sexual attention. It can involve intimidation, threats, coercion, or promises or create an environment that is hostile or offensive. Harassment may occur between members of the same or opposite gender and between any combination of members in the campus community: students, faculty, staff, and administrators. Harassment can occur anywhere on campus, including the classroom, the workplace, or a residence hall. Any student, staff or faculty member who believes s/he has been sexually harassed should contact the Office of Sexual Harassment (OSH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the OSH and the campus resources available to assist individuals who believe they have been sexually harassed can be obtained at: <http://www.colorado.edu/sexualharassment>