

---

**University of Colorado at Boulder**  
**Math tools for Economists 1**  
**ECON 1078-002**  
**Fall 2009**

**MEETING TIME:** MWF 2:00 PM-2:50 PM  
**ROOM:** HALE 230

**Instructor:** Ying Li

**Office:** ECON 306

**E-mail:** [liy@colorado.edu](mailto:liy@colorado.edu)

**Web:** I will use CUlearn to post relevant materials and your grades

**Office Hours:** MW 12:30 P.M—1:45 P.M And by appointment

**Textbook:**

*Essential Mathematics for Economic Analysis*, 3<sup>rd</sup> (or 2<sup>nd</sup> edition), by Knut Sydsaeter, and Peter Hammond. You will also use this book for ECON1088. Since you can always refresh your knowledge of algebra and calculus by referring to this book, *please keep it as your reference book for undergraduate courses.*

**Course Description and Objectives:**

The goal of this course is to provide students the basic mathematical tools needed for business and economics. The materials covered in this course include: rules of algebra, solving linear and nonlinear equations, essentials of set theory, and functions. For a complete list of topics see the course schedule that follows.

“Learning by doing” is important in math classes. There are a lot of practice questions after each section and chapter in the textbook. Some of them will be selected as problem sets. I will not collect problems sets, but you’d better use them as review materials and finish them on time. From problem sets, you will learn how to apply formulas and properties in real question and be prepared for tests. In addition, some examples not in the book but related to economics will be discussed during class time. Attendance is not compulsory but regularly attending classes will definitely help your performance and grade.

**Handout:**

Handouts for each class will be post on culearn one week in advance. These are outlines of class materials but not substitution of your textbook or class notes. You are responsible for printing handouts and take them to class.

---

## Grading:

Your grade will come from the following breakdown:

- 15% - Quizzes (Top 4 out of 5 scores)
- 5% - In-Class Assignments
- 25% - Midterm 1 (September 23rd)
- 25% - Midterm 2 (November 4th)
- 30% - Final (Thursday--December 17th, 7:30 A.M.-10:00 A.M.)

The midterms will be administered on *September 23rd* and *November 4th* 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. **If you miss a midterm exam, the weight of that exam will carry over onto the final, so there will be NO MAKEUP midterms.**

The final exam is scheduled for *December 17<sup>th</sup> (Thursday)* from *7:30 A.M to 10 A.M.* If you have three or more final exams scheduled on the same day, you are entitled to arrange an alternative exam time for the **last** exam or exams scheduled on that day. **To qualify for rescheduling final exam times, you must provide evidence that you have three or more exams on the same day and ECON 1078 is the last one!**

## In-Class Assignment

Randomly throughout the semester I will assign problems for you to work on in class, which you will hand in to me before you leave. These problems are intended to provide practice and will be similar to problems you will see on quizzes and exams. As with the quizzes, the lowest of your in-class assignment scores will be automatically dropped.

## Grading Scale:

- 93% to 100% A
- 90% to 92% A-
- 88% to 89% B+
- 82% to 87% B
- 80% to 81% B-
- 78% to 79% C+
- 72% to 77% C
- 70% to 71% C-
- 68% to 69% D+
- 62% to 67% D
- 60% to 61% D-
- 59.5% F

*About curve: I reserve the right to curve your overall grade after the final, but there will be no curved midterms separately.*

---

### 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 ( $\log$ ,  $\ln$ ,  $e^x$ ,  $\sqrt[n]{\phantom{x}}$  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.**

### Make-Up Exams:

There will be NO make-up In-class assignments, quizzes, or exams for this class. If you miss a midterm exam with a documented excuse, the weight given your final exam will be increased.

### General Policies:

- (1) There will be NO make-up in-class assignment, quiz, or exam for this class without formal documentation, like doctor's note. If you need a make-up because of disability or military mission or tournament (if you are in a school team), you are eligible for a make-up earlier than the scheduled test date. Again, you have to give me a formal documentation! Please read the schedule carefully. Friends' wedding, family trip, and football game are not excuses for makeup! More important, **I will never give a makeup for a makeup**. For your midterms, if you miss any of them, your final will be weighted automatically. Of course, you CANNOT miss the final.
- (2) If you need to take the final other than the scheduled time, you must let me know at least two weeks ahead with formal documentation.
- (3) If you have any question about the materials, like questions in problem sets, you are more than welcome to go to my office hours after making appointment with me.
- (4) You are responsible for any missing class. If you miss any class, please borrow the notes from others and read the materials BEFORE going to my office hours. I am not going to re-lecturing during my office hours since it will waste other students' time.
- (5) Since I will announce important information through class email, you are responsible for checking your Colorado email account.
- (6) According to the university policy, no grades are allowed to be released via email. In other words, I am prohibited from emailing any grade to you.
- (7) Any concern or question about your grades should be raised before the end of the specified date, which will be announced through class email.

---

**Tentative Course Schedule:**

<b>Week of (Month/date)</b>	<b>Course Material</b>	<b>Topics</b>	<b>Quiz/Exam (Month/date)</b>
8/24	1.1, 1.2, 1.3, 1.4	Algebra Basics	
8/31	1.5, 1.6	Fractions and Inequalities	Quiz 1 (Friday 9/4)
9/7	1.7, 2.1, 2.2	Simple Equations	
9/14	2.3, 2.4, 2.5	Radicals, Equations in One Variable	Quiz 2 (Friday 9/18)
9/21	Midterm 1	Midterm Review	Midterm 1 (Wednesday 9/23)
9/28	3.1, 3.2, 3.4, 3.5	Summation, Logic	
10/5	3.6, 3.7, 4.1	Set Theory, Induction, Functions of One Variable	Quiz 3 (Friday 10/9)
10/12	4.2, 11.1, 4.3, 4.4	Linear Function, Functions of Two Variables	
10/19	4.5, 4.6, 4.7	Quadratic and Polynomial Functions	Quiz 4 (Friday 10/23)
10/26	4.8, 4.9, 4.10	Power, Exponential, Logarithmic Functions	
11/2	Midterm 2	Midterm Review	Midterm 2 (Wednesday 11/4)
11/9	5.1, 5.2, 5.3	Shifting Graphs, Inverse Functions	
11/16	5.4, 5.5, 5.6	Graphs, Distance, General Function	
11/23	-	No Class (Fall Break & Thanks giving)	
11/30	6.1, 6.2, 6.3	Slope of Curves, Derivative	Quiz 5 (Friday 12/4)
12/7	Final Review	Review for Final Exam	
<b>Final Exam on Thursday December 17th 7:30-10:00 a.m. HALE 230</b>			

---

**Useful Resources:****[ECON1078 Common Page](#)**

This is the web page developed by all Econ 1078 instructors. You can find homework and exam problems from previous semesters there.

**Additional Notes:*****Disability***

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>

***Religious Holidays***

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. If any of the scheduled exams in this syllabus conflicts with your religious holiday(s), notify me within the first two weeks of classes so that I can accommodate you as reasonably as I can in accordance with the above stated policy.

***Code of Behavior***

Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards may be subject to discipline. Faculty have the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. 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/>

***Policy on Discrimination and Sexual Harassment***

The University of Colorado at Boulder policy on Discrimination and Harassment (<http://www.colorado.edu/policies/discrimination.html>), the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships applies to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH and the campus resources available to assist individuals regarding discrimination harassment can be obtained at <http://www.colorado.edu/od>