University of Colorado at Boulder
Math Tools for Economists I
ECON 1078-003

MEETING TIME: MWF 2:00 PM-2:50 PM
ROOM: HUMN 1B80

Instructor: Yuchen Shao
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Web: https://culearn.colorado.edu/
Office Hours: MW 10:15 A.M—11:15 A.M or by appointment

Textbook:
Essential Mathematics for Economic Analysis, 3rd, 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*.

Resources:
http://www.colorado.edu/economics/courses/ECON1078/1078home.html
This is the joint website for all Econ 1078 instructors. You can find homework and exams from previous semesters here.

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, logical proof 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 in the textbook. Some of them will be selected as problem sets. 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 policies:
Attendance is **compulsory** and regularly attending classes will definitely help your performance and grade. I will reward extra credits to those actively participate in discussion.

Note that gossip is not allowed in class. If I find any student talks when I teach, I will delete one easy question from the test, and add a difficult one. Moreover, please turn off your cell phone during lecture and don't take your pets to the classroom. Thanks!

Handout:
Handouts for each lecture will be distributed in class and be posted on CULearn one week in advance. These are outlines of class materials but not substitution of your textbook or class notes. Reading handouts before class is recommended for increasing the efficiency of attending class.

Grading:
Your grade will come from the following breakdown:
5% - In-class Assignments
10% - Problem Sets (Top 5 out of 6 scores)
15% - Quizzes (Top 4 out of 5 scores)
20% - Midterm 1 (Wednesday, Sep. 22)
20% - Midterm 2 (Wednesday, Nov. 3)
30% - Final (Monday, Dec. 13, 1:30 p.m. – 4:00 p.m.)

The midterms will be administered on *September 22nd* and *November 3rd* in class. Each test is worth 20% 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 for whatever reason, the weight of that exam will carry over onto the final, so there will be NO MAKEUP midterms.**

The final exam is scheduled on **Dec 13 (Monday)** from **1:30 P.M to 4:00 P.M.** To qualify for rescheduling the final exam time, you must provide evidence that you have three or more exams on the same day and ECON 1078 is the **last** one before *Friday, October 1*! Otherwise, there will be **NO MAKEUP** final.

In-Class Assignment
Randomly throughout the semester I will assign problems for you to work on in class, which you should hand in the solutions before you leave. These problems are group projects intended to provide practice and will be similar to those you will see on quizzes and exams.

Problem Set
There will be totally 6 problem sets posted on CULearn during the semester. The due date of each problem set will be announced in class, which is generally the following Monday after the posting date (no later than the lecture finishes). I will grade it as 0 or 1 or 2 points. For any late hand-in of homework, I will deduce exactly one point from the score you initially earn, unless it is already a zero point. Similar to the quizzes, the lowest score of your homework 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% or lower F

About curve: I may curve the grades of midterms but will not curve your final. So you are able to estimate your letter grade by the grading scale.

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, $^n\sqrt{}$ 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**. This is the policy for all economic courses. If you don't have a basic calculator, it would be better if you buy one.

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 only. Again, you have to give me a formal documentation earlier than the scheduled test date! Please read the schedule carefully. Personal reasons like 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.
(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, I am prohibited from emailing any grade to you. But I will post all your scores on CULearn website.
Please feel free to contact me if you have any concern or question about these.

Tentative Course Schedule:

I have already marked these important dates on your CULearn calendar!

Week	Course Material	Topics	Quiz/Exam (Month/date)
8/23	1.1, 1.2, 1.3, 1.4	Algebra Basics	
8/30	1.5, 1.6, 1.7	Fractions and Inequalities	
9/6	2.1, 2.2	Simple Equations	Quiz 1 (Friday 9/10)
9/13	2,3, 2.4, 2.5	Radicals, Equations in One Variable	
9/20	Midterm 1	Midterm Review	Midterm 1 (Wednesday 9/22)
9/27	3.1, 3.2, 3.4, 3.5	Summation, Logic	
10/4	3.6, 3.7, 4.1	Set Theory, Induction, Functions of One Variable	Quiz 2 (Friday 10/8)
10/11	4.2, 11.1, 4.3, 4.4	Linear Function, Functions of Two Variables	
10/18	4.5, 4.6, 4.7	Quadratic and Polynomial Functions	Quiz 3 (Friday 10/22)
10/25	4.8, 4.9, 4.10	Power, Exponential, Logarithmic Functions	
11/1	Midterm 2	Midterm Review	Midterm 2 (Wednesday 11/3)
11/8	5.1, 5.2, 5.3	Shifting Graphs, Inverse Functions	
11/15	5.4,5.5,5.6	Graphs, Distance, General Function	Quiz 4 (Friday 11/19)
11/22	Fall Break (no class)		
11/29	6.1, 6.2, 6.3	Slope of Curves, Derivative	Quiz 5 (Friday 12/3)
12/6	Final Review	Review for Final Exam	
Final Exam on Monday Dec. 13 1:30P.M. - 4:00 P.M. HUMN 1B80			

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 polices 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/

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