

# ECON 1088-005

## Math Tool for Economists II

January 2016

**Instructor:** Li Yao

**Course meeting:** MWF 11:00-11:50 HLMS 241

**Email:** li.yao@colorado.edu

**Office:** ECON 309B

**Office Hour:** Wednesday 1:00-3:00 PM

**Course Description:** This class is the second of a two course sequence. It is a continuation of ECON 1078 which builds upon the basic foundation developed in that course. We will study derivatives, optimization, and integrals. These are Chapters 6,7,8,9, and 11 in the textbook. These tools will help you better understand the mathematical framework on which economics models are based and help prepare you for more advanced economics.

**Prerequisite:** ECON 1078 or equivalent.

**Textbook:** *Essential Mathematics for Economic Analysis*, 4th Edition. Authors: Knut Sydsaeter and Peter Hammond.

### Course Policies:

- General:
  - Class periods will be devoted to lectures and practice. Therefore, good attendance is key to succeeding in the course. Attendance will be randomly taken for 5 times over the semester. No absences will be excused unless you have a good reason.
  - Lectures will be based around the chalkboard, and extensive mathematical notation will be used. Therefore, I highly recommend taking notes on paper. However, if you can successfully take notes with a computer or tablet, please minimize the distraction to other students and sit toward the back of the classroom. Stay off of the Internet.
  - Please allow 24 hours for me to respond to your emails. Grades will not be discussed over email. Emails regarding grades will receive a reply of "Office hours".

- Grades:

- Distribution:

Attendance	5%
Assignments	5%
Midterm1	20%
Midterm2	20%
Midterm3	20%
Final Exam	30%

- Letter Grade Cutoffs:

$\geq 93.00$	A	73.00 - 76.99	C
90.00 - 92.99	A-	70.00 - 72.99	C-
87.00 - 89.99	B+	67.00 - 69.99	D+
83.00 - 86.99	B	63.00 - 66.99	D
80.00 - 82.99	B-	60.00 - 62.99	D-
77.00 - 79.99	C+	$\leq 59.99$	F

- Curving: Midterms will be curved individually, and a curve may be applied to the overall course grade according to departmental standards.

- Homework:

- The homework usually is assigned on Monday and due on next Friday. There will be 10 assignments, but I will only collect 5 of them. Please always be prepared to turn in your assignment on the due day.
- Students are encouraged to work in groups on homework assignments. The assignments (while graded) are for your own practice and understanding of the material. If you don't fully understand the problems, you will struggle on the exams. You are welcome and encouraged to attend office hours to discuss homework problems.
- No late assignments will be accepted under any circumstances.

- Exams:

- Midterms: Midterm will be given during lecture time on the fixed dates in the schedule given in this syllabus. No makeup or separate time exams will be given (except for students with documented disabilities), but if you miss an exam, the weight of the missed midterm will be added to your final exam. You must notify me of your exam absence before the midterm date in order to avoid a zero. Midterms will be curved individually.
- Final Exam: The final exam will be cumulative, held in our regular classroom on May 2nd, 1:30-4:00 pm. This date is non-negotiable. The only exception to this standard is if you have 3 final exams scheduled on the same day; in this circumstance, you must notify me one month before the final exam.

## **Additional Notes:**

### **Students with 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 be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Center for Community N200, and <http://www.Colorado.EDU/disabilityservices>.

If you have a temporary medical condition or injury, see guidelines at <http://www.colorado.edu/disabilityservices/go.cgi?select=temporary.html>. Disability Services' letters for students with disabilities indicate legally mandated reasonable accommodations. The syllabus statements and answers to Frequently Asked Questions can be found at <http://www.colorado.edu/disabilityservices>.

### **Religious Observance Policy**

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. If you have a conflict, please contact me at the beginning of the term so that we can make proper arrangements. See full details at [http://www.colorado.edu/policies/fac\\_relig.html](http://www.colorado.edu/policies/fac_relig.html).

### **Classroom Behavior Policy**

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity, and gender expression, age, disability, and nationalities. 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).

### **Discrimination and Harassment Policy**

The University of Colorado at Boulder Discrimination and Harassment Policy and Procedures, the University of Colorado Sexual Harassment Policy and Procedures, and the University of Colorado Conflict of Interest in Cases of Amorous Relationships Policy apply to all students, staff, and faculty. Any student, staff, or faculty member who believes s/he has been the subject of sexual harassment or discrimination or harassment based upon race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127, or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://www.colorado.edu/odh>.

### **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); 303-735-2273). 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/>.

## Tentative Sechdule

Week of	Course Material	Topics
Jan 11th	6.1, 6.2, 6.3	Slopes, Tangents, Derivatives
Jan 18th	6.4, 6.5	Rates of Changes, Limits
Jan 25th	6.6, 6.7, 6.8	Sums, Products, Chain Rules
Feb 1st	6.9, 6.10, 6.11	Higher Order, Exponentials, Logs
Feb 8th	Review	<b>Exam(Feb 12th)</b>
Feb 15th	7.1, 7.2, 7.3	Implicit Differentiation, Economic Uses
Feb 22nd	7.7, 7.8, 7.9	Elasticities, Continuity, Limits
Feb 29th	7.12, Review	L'Hopital's Rules, <b>Exam(Mar 4th)</b>
Mar 7th	8.1, 8.2, 8.3	Optimization
Mar 14th	8.6,8.7, 11.1	Local Extrema, Inflection, Functions
Mar 21st	——-	Spring break
Mar 28th	11.2, 11.3, 11.6	Slopes, Tangents, Derivatives
April 4th	11.7, 11.8, Review	Applications, <b>Exam(April 8th)</b>
April 11th	9.1, 9.2, 9.3	Integration, Properties
April 18th	9.4, 9.5, 9.6	Integration Rules
April 25th	12.1, 12.3, Review	Comparative Statics
Final Week	——-	<b>FINAL (May 2nd at 1:30pm)</b>