

# **Math Tools for Economists I. ECON 1078, Fall 2013.**

<b>Instructor</b>	Patrick Gourley
<b>Class Meetings</b>	MWF 12:00-12:50, FLMG 154
<b>Email</b>	<a href="mailto:patrick.gourley@colorado.edu">patrick.gourley@colorado.edu</a> This is the best way to contact me. I will try to respond with 24 hours to all emails.
<b>Office</b>	ECON 401
<b>Office Hours</b>	Monday 1:00PM - 3:00 PM or by appointment.
<b>Course Website</b>	The course website is accessed through Desire2Learn where you will find all related course materials.

## **Course Description and Objectives**

Economics is an extremely mathematical discipline. This course and the following course (ECON 1088) are designed to get all students interested in Economics to get well acquainted with Mathematical tools necessary for success in Economics courses. See tentative schedule for topics covered in this course.

## **Expectations**

You can expect me to do my best to help you succeed in this course. I will try my best to answer all questions, provide practice material, provide applications of the material and encourage active thought in the classroom. You may expect me to be respectful and professional at all times by arriving on time, silencing my phone, reserving personal conversation for before and after class, and being courteous with everyone.

I expect you to take the class seriously and to ask questions when something is unclear and actively participate to help us all understand the material better. I also expect you to be respectful and professional at all times by arriving on time, silencing your phone, reserving personal conversation for before and after class, and being courteous with everyone.

## **Succeeding in a Math class**

Math is learned and mastered through practice. Anyone who practices math is capable to doing math well. There will be no graded homework in this class, but those who wish to do well in this class should make use of the problems at the end of each section of the textbook.

## **Textbook**

Essential Mathematics for Economic Analysis, 4<sup>th</sup> edition, by Knut Sydsaeter, and Peter Hammond with Arne Strom is required. Economics 1088 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.

### 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 ( $\log$ ,  $\ln$ ,  $e^x$ ,  $n\sqrt{\phantom{x}}$  and  $x!$ ). Any basic scientific calculator will perform these functions. **NO GRAPHING CALCULATORS, CELL PHONES, OR COMPUTERS WILL BE ALLOWED DURING EXAMS. BASIC CALCULATORS ONLY!!!**

### Laptop Note

Nothing works better than good old fashion paper and pencil for taking notes in a math class, so it is hard to imagine why anyone would need a computer in this class. In general, **NO OPEN LAPTOPS ALLOWED** during lecture.

### Grading

Your grade will come from the following breakdown:

- 10% Attendance
- 20% Quizzes (Drop lowest quiz)
- 40% 2 Midterms
- 30% Final Exam (Cumulative)

### Quizzes

There will be 3 quizzes throughout the semester. I will announce quiz dates in advance during lectures. **THERE ARE NO MAKE UP QUIZZES. If you miss a quiz, then it will simply be your lowest score and it will be dropped.**

**Midterms**      Midterm 1      Friday, October 18<sup>th</sup>  
                         Midterm 2      Friday, December 6<sup>th</sup>

These exams will be held during the normal class time.

**Final**              Wednesday, December 18<sup>th</sup> 4:30PM – 7:00PM

The final exam will be cumulative and cannot be dropped for any reason.

**THE EXAM DATES ARE FIXED. THERE ARE NO MAKEUP EXAMS (see exception for the final below)!!! If you do miss an exam, then the final will be worth 50% of your final grade.**

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. If you have this conflict, arrangements must be made with me no later than Oct. 4<sup>th</sup>.

### Cheating

Anyone caught cheating will at minimum fail the assignment in questions and will be referred to the University Honor Code Council.

**(Very) Tentative Schedule**

Week of	Course Material	Topics	Exams
Aug 26 <sup>th</sup>	1.1, 1.2, 1.3	Numbers, Powers, Rules of Algebra	
Sept 2 <sup>nd</sup>	1.4, 1.5	No School Sept 2 <sup>nd</sup> , Fractions	
Sept 9 <sup>th</sup>	1.6, 1.7, 2.1	Inequalities, Intervals & Absolute Values, Simple Equations	
Sept 16 <sup>th</sup>	2.2, 2.3, 2.4	Equations continued	
Sept 23 <sup>rd</sup>	2.5, 4.1, 4.2	Nonlinear equations, Functions	
Sept 30 <sup>th</sup>	4.3, 4.4, 4.5	Graphs of Functions, Linear Functions, Linear Models	
Oct 7 <sup>th</sup>	4.6, 4.7, 4.8	Quadratic Functions, Polynomials, Power Functions	
Oct 14 <sup>th</sup>	4.9, 4.10	Exponential Functions, Logarithmic Functions	Midterm 1: Oct 18 <sup>th</sup>
Oct 21 <sup>st</sup>	5.1, 5.2	Shifting Graphs, New Functions from Old	
Oct 28 <sup>th</sup>	5.3, 5.4, 5.5	Inverse Functions, Graphing equations, Distance in the Plane	
Nov 4 <sup>th</sup>	5.6, 3.1	General Functions, Summation Notation	
Nov 11 <sup>th</sup>	3.2, 3.3, 3.4	Rules of Sums, Double Sums, Logic	
Nov 18 <sup>th</sup>	3.5, 3.6, 3.7	Mathematical Proofs, Set Theory, Induction	
Nov 25 <sup>th</sup>	-----	Thanksgiving Break	
Dec 2 <sup>nd</sup>	Midterm 2	Midterm and Review	Midterm 2: Dec 6 <sup>th</sup>
Dec 9 <sup>th</sup>	Review		

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Final Exam on Wednesday, December 18<sup>th</sup> 4:30PM – 7:00PM

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## **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/>.