Math Tools for Economists II

ECON 1088-002, Spring 2018

Monday, Wednesday, and Friday 11:00-11:50 AM, MUEN E417

1 Course Information

Instructor: Evelyn Skoy

Course Website: D2L

Email: evelyn.skoy@colorado.edu

Office: Economics 414 (tower on the south side of the building)

Office Hours:	Tuesdays	12:30 PM – 1:30 PM
	Thursdays	12:30 PM – 1:30 PM
	and by appointment.	

Required Textbook:
Essential Mathematics for Economic Analysis, CU Boulder Special Edition ISBN: 1323259236 Authors: Knut Sydsaeter and Peter Hammond (3rd or 4th edition are also acceptable!)

Prerequisites:
ECON 1078 or equivalent

Course Description and Objectives:
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.

2 Course Policies

General:

- Class periods will be devoted to lecture and practice, which means that participation is important and will be a decent component of your grade. Participation will be recorded with pre-class questions on D2L or in-class collected questions. I will record attendance for the first two weeks of class, and if you do not attend the first three class meetings and do not contact me, I will administratively drop you according to departmental procedure.
- You will not need a computer during class, unless you feel confident in your ability to type notes that include extensive mathematical notation. If you use a computer for notes, sit in the back three rows to avoid distracting your classmates. Stay off of the internet - you're paying me to teach you math, not to check your messages. No mobile devices are allowed during class periods.

- Please allow 24 hours for me to respond to your emails or 48 hours if it is on the weekend. Grades will not be discussed over email. Emails regarding grades will receive a reply of "Office hours."
- No makeup assignments will be given.

Grades:

- Distribution:

Grade Item	Percentage
Pre-test	2
Midterm	25
Midterm	25
Final	30
Homework	10
Participation	8

- Reporting: Grades will be uploaded into D2L as assignments are graded.
- Curving: Midterms may be curved individually, and a curve may be applied to the overall course grade to conform to departmental standards.
- Letter Grade Cutoffs: Let your grade be "x"

Grade	Percentage	Grade	Percentage
A	$93 \le x$	C	$73 \le x < 77$
A-	$90 \le x < 93$	C-	$70 \le x < 73$
B+	$87 \le x < 90$	D+	$67 \le x < 70$
B	$83 \le x < 87$	D	$63 \le x < 67$
B-	$80 \le x < 83$	D-	$60 \le x < 63$
C+	$77 \le x < 80$	F	$x < 60$

- Adjustment: You will be responsible for monitoring your own grades. If you are worried about your grade, come to me early to make a plan for your success. I will automatically increase final course grades that are 0.5% below any grade cutoff after any final grading curve has been applied. After these steps are taken, no further increases to grades will occur. Individual requests for bumps or extra credit assignments will be denied.

Practice Problems and Assigned Homework:

- A pre-test assignment due in the first week of class will check your ability to use prerequisite material. This assignment is graded only for completion.
- Recommended practice problems from your textbook will be posted on D2L each Friday. Detailed solutions will be either covered in class or posted on D2L on the following Wednesday. These problems will not be graded, but they will benefit your exam preparation.
- Some class periods will be partially "flipped" and will require you to complete a reading or watch a video then answer unlimited-attempt questions before attending class. Readings outside of the text and videos as well as pre-class questions will be posted on D2L. Please alert me to any accessibility issues with these materials.
- Three homework assignments will be due before each midterm. The problems will mirror the types of questions that will be on the exams. Working in groups is encouraged, however each student must turn in an individual assignment with the

names of groups members written at the top of the page. I will randomly choose two problems from each assignment to grade.

Exams:

- Midterms: Three midterms will be given during lecture time on the fixed dates in the schedule given in this syllabus. The lowest exam score will be dropped, and therefore **no makeup or separate time exams will be given** (except for students with documented accommodations). You must notify me with documentation of your accommodation at least one week before the first exam in order for it to apply.
- Final Exam: The final exam is cumulative. The exam will be held at the university assigned place and time. 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 before the 11th week of the semester.
- Partial credit will be awarded on all exams.

Cheating: If you are caught cheating in any fashion (on exams or homework) you will be given an F for the semester and your case will be reported to the Honor Code Council for review.

4 Tentative Schedule

Tentative Course Outline: The weekly coverage might change as it depends on the progress of the class. The sections listed below denote the topics to be covered and their associated textbook sections; however, I may assign a video or alternate readings instead of the text section. Any material to be studied before class will be announced in class and on D2L.

Week	Lecture
Jan 15 – Jan 19	• Topics: Administration, Introducing Derivatives • Sections: 6.1, 6.2
Jan 22 – Jan 26	• Topics: Uses of Derivatives • Sections: 6.5, 6.3, 6.4, 6.6; **Pre-test due Jan. 22**
Jan 29 – Feb 2	• Topics: Rules of Derivatives • Sections: 6.7, 6.8
Feb 5 – Feb 9	• Topics: More Rules of Derivatives • Sections: 6.9, 6.10, 6.11
Feb 12 – Feb 16	• Topics: Review, Using Derivatives; **Midterm 1: Feb. 14** • Sections: Ch 6 review, 7.1; **Homework 1 due: Feb. 12**
Feb 19 – Feb 23	• Topics: Using Derivatives • Sections: 7.2, 7.7, 7.8
Feb 26 – Mar 2	• Topics: Introduction to Optimization • Sections: 8.1, 8.2, 8.3
Mar 5 – Mar 9	• Topics: Tools for Optimization in Economics • Sections: 8.6, 8.7
Mar 12 – Mar 16	• Topics: Review, Multivariable Functions; **Midterm 2: Mar. 14** • Sections: Ch. 7/8 review 11.1, 11.5; **Homework 2 due: Mar 12**
Mar 19 – Mar 23	• Topics: Partial Derivatives • Sections: 11.2, 11.6, 11.7
Mar 26 – Mar 30	Spring Break

Apr 2 – Apr 6	• Topics: Using Multivariable Derivatives, Practice • Sections: 11.8, 14.1
Apr 9 – Apr 13	• Topics: Review, Introduction to Integrals; **Midterm 3: Apr. 11** • Sections: Ch. 11 review, 9.1; **Homework 3 due: Apr. 9**
Apr 16 – Apr 20	• Topics: Anti-derivatives and Their Interpretations • Sections: 9.1, 9.2, 9.4
Apr 23 – Apr 27	• Topics: Definite Integrals • Sections: 9.3, 9.6
Apr 30 – May 4	• *No Class May 4;* **Final Exam** • Sections: Ch. 9, semester review

5 University Policies

Students with Disabilities

If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu. If you have a temporary medical condition or injury, see Temporary Injuries guidelines under the Quick Links at the Disability Services website and discuss your needs with your professor.

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. In this class, 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.

Classroom Behavior Policy

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 www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code.

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, gender expression, age, disability, and nationalities.

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 enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the academic integrity policy of the institution. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at honorcode.colorado.edu.