University of Colorado - Boulder
Fall 2019
Syllabus ECON1088 - Math Tools for Economists II

Instructor: Shawn Swanson
Class Meetings: MWF 2:00 – 2:50 in ECON 119
Office: ECON 14
Office Hours: MW 1:00 – 1:50, or by appointment if you have a scheduling conflict with these times.
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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.

Prerequisites

Econ 1078 or equivalent.

Required Textbook

Required Textbook: Knut Sydsaeter, Peter Hammond, Arne Strom and Andres Carvajal, *Essential Mathematics for Economic Analysis* , Pearson, 5th ed., 2016 (3rd or 4th edition are also acceptable).

Grading

There will be no makeup work or makeup exams in this class, period. I drop 2 problem sets, 1 midterm, and 1 group exercise, to accommodate for life's events, excused or otherwise. In fairness to everyone, there are no exceptions to this rule. Your total grade in this course will be determined as follows:

• Pretest	2%
• Participation	8%
• Problem sets	10%
• Midterm	25%
• Midterm	25%
• Final	30%

Problem Sets:
There will be 11 problem sets. They will be issued on Mondays and due the following Wednesday before class. Many of these problems will be solved in during class. It is strongly suggested you attempt additional problems. Two problems from each problem set will be graded at random. Feel free to work in groups, but you must turn in your own work. Unsubstantiated or illegible answers will receive partial credit at most. *Late work submitted prior to 5p.m on the date due will receive half credit at most. At 5 p.m. detailed solutions will be released on Canvas, and no further work will be accepted; you will receive a zero for the assignment. Note your two lowest problem set scores will be dropped.*

Participation:
Class attendance is required. There will be 5-6 unannounced in class group exercises throughout the semester, which you will work on in small groups of 3-4 students. These are intended to help prepare you for midterms, and will be graded on completion only. Detailed solutions will be released on Canvas. No make-up work will be accepted under any circumstances. *Note your lowest group exercise will be dropped*.

Midterm Exams:
There are 3 midterm exams, and while they are not explicitly cumulative, material does naturally build upon itself. Unsubstantiated or illegible answers will receive partial credit at most. Exams will be closed book, closed notes. Only basic scientific calculators will be permitted, no computers, cell phone, or graphing calculators. *There will be no makeup exams. Note your lowest midterm will be dropped*.

Final Exam:
The final exam will be *cumulative* and must be held per university policy. The University's final exam policy can be found at http://www.colorado.edu/policies/final-examination-policy. Unsubstantiated or illegible answers will receive partial credit at most. Exams will be closed book, closed notes. Only basic scientific calculators will be permitted, no computers, cell phone, or graphing calculators. *There will be no makeup exams. If you miss the final and have appropriate documentation your other coursework will be appropriately reweighted, otherwise you will receive a zero for the exam.*

Letter Grades:
Scores may be curved at the instructor's discretion. Your (curved) final course grade will automatically be increased up to 0.5% to meet any grade cutoff. No further grade adjustments are available. There will be no extra credit. Letter grades will be assigned as follows:

Percentage	**Grade**	**Percentage**	**Grade**
94-100	A	73-76	C
90-93	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	0-59	F

Exam Dates (tentative)

Midterm I	Friday	9/27/19	During class time
Midterm II	Friday	10/25/19	During class time
Midterm III	Friday	11/15/19	During class time
Final Exam	Monday	12/16/19	1:30pm – 4:00pm

All exams will take place in the regular classroom unless otherwise noted.

Canvas

Problems sets will be released on Canvas, Mondays at 8a.m. Solutions to group exercises and problems sets will be posted on Canvas, as well. Grades will be posted on Canvas as soon as they are available.

Office Hours

Office hours are the best way to get extra help if needed. I would be happy to schedule a time outside of office hours if a scheduling conflict prevents you from coming during the assigned hours.

Cheating

Don't do it, either on exams or homework. You will get caught. You will fail the course. Your case will be reported to the Honor Code Council.

Communication Policy

Email will be my primary form of communication with the class:

- I will use your CU email address for class communications, so check your CU mailbox frequently.
- I will answer you as soon as possible. Please allow 24 hours for a response.
- Please refer to the syllabus to answer questions, before contacting me.
- Questions on course material are often more easily and thoroughly answered in person. Please use my office hours as your primary means of obtaining help with course material.
- Under no circumstances can I provide grades through email due to Family Educational Rights and Privacy Act (FERPA) regulations, since emails are not considered secure. Grades will be available on D2L.

Electronic Device Policy

Please silence electronic devices during lectures. You are welcome to use electronic devices for note taking and accessing learning materials online. However, do not use electronic devices during class time for non-class activities (i.e. social media, etc), or you will be asked to turn it off and put it away.

Disability Accommodations

If you qualify for accommodations because of a disability, please submit 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

Classroom Behavior Policy

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 has 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_cod

Religious Observance Policy

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 you have a conflict, please contact me at the beginning of the term so we can make proper arrangements.

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/

Discrimination & Harassment Policy

The University of Colorado Policy on Sexual Harassment applies to all students, staff and faculty. Sexual harassment is unwelcome sexual attention. It can involve intimidation, threats, coercion,
or promises or create an environment that is hostile or offensive. Harassment may occur between members of the same or opposite gender and between any combinations of members in the campus community: students, faculty, staff, and administrators. Harassment can occur anywhere on campus, including the classroom, the workplace, or a residence hall. Any student, staff or faculty member who believes s/he has been sexually harassed 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 who believe they have been sexually harassed can be obtained at: http://www.colorado.edu/odh/

Course Schedule

Week	Lecture
Week 1 - 8/26 - 8/30	• Topics: Administration, Introducing Derivatives • Sections: 6.1, 6.2, 6.5
Week 2 - 9/2 - 9/6	• Topics: Uses of Derivatives • Sections: 6.3, 6.4, 6.6 • **No class Labor Day (9/2)** • PS1 due 9/4; Pretest due 9/4;
Week 3 - 9/9 - 9/13	• Topics: Rules of Derivatives • Sections: 6.7, 6.8 • PS2 due 9/11
Week 5 - 9/16 - 9/20	• Topics: More Rules of Derivatives • Sections: 6.9, 6.10, 6.11 • PS3 due 9/18
Week 6 - 9/23 - 9/27	• Topics: Review, Using Derivatives • Sections: Ch 6 review, 7.1 • **Midterm 1 (9/27)**; PS4 due 9/25
Week 7 - 9/30 - 10/4	• Topics: Using Derivatives • Sections: 7.2, 7.7, 7.8
Week 8 - 10/7 - 10/11	• Topics: Introduction to Optimization • Sections: 8.1, 8.2, 8.3 • PS5 due 10/9
Week 9 - 10/14 - 10/18	• Topics: Tools for Optimization in Economics • Sections: 8.6, 8.7 • PS6 due 10/16
Week 10 - 10/21 - 10/25	• Topics: Review, Multivariable Functions • Sections: Ch. 7/8 review, 11.1, 11.5 • **Midterm 2 (10/25)**; PS7 due 10/23
Week 11 - 10/28 - 11/1	• Topics: Partial Derivatives • Sections: 11.2, 11.6, 11.7
Week 12 - 11/4 - 11/8	• Topics: Using Multivariable Derivatives, Practice • Sections: 11.8, 14.1 • PS8 due 11/6
Week 13 - 11/11 - 11/15	• Topics: Review, Introduction to Integrals • Sections: Ch. 11 review, 9.1 • **Midterm 3 (11/15)**; PS9 due 11/13
Week 14 - 11/18 - 11/22	• Topics: Anti-derivatives and Their Interpretations • Sections: 9.1, 9.2, 9.4
11/25 - 11/29	Fall Break - Thanksgiving **No Classes**
Week 15 - 12/2 - 12/6	• Topics: Definite Integrals • Sections: 9.3, 9.6 • PS10 due 12/4
Week 16 - 12/9 - 12/13	• Sections: Ch. 9 and semester review • **No class Reading Day (12/13)** • PS11 due 12/11