

University of Colorado - Boulder
Spring 2020
Syllabus ECON1088 - Math Tools for Economists II

Instructor: Shawn Swanson

Class Meetings: MWF 12:00 – 12:50 in ECON 117

Office: ECON 14

Office Hours: MW 11:00 – 12:00, or by appointment if you have a scheduling conflict with these times.

Email: shawn.swanson@colorado.edu

Course Description

This class is the second of a two course sequence. It is a continuation of ECON 1078, and builds upon the algebraic foundation developed in that course. We will cover parts of chapters 6, 7, 8, 9, 11, and 14 in the textbook. We will study derivatives, optimization, and integrals, which are important mathematical tools used in economics. These tools will be used extensively in your subsequent economics courses.

Prerequisites

Econ 1078 or equivalent. College level algebra skills are necessary for success in this course.

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

- Problem sets 10%
- Midterms 60% (30% each)
- Final 30%

Problem Sets:

There will be 11 problem sets. Many of these problems will be solved in during class. It is strongly suggested you attempt additional problems. Problem sets will be graded on completion. 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.

Exams:

There are 3 midterm exams, and while they are not explicitly cumulative, material does naturally build upon itself. 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. Note your lowest midterm will be dropped. 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.

Participation:

Class attendance is strongly encouraged. Students that attend classes regularly do significantly better than those that do not. The students who do not regularly attend class, do not pass.

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	2/14/20	During class time
Midterm II	Friday	3/13/20	During class time
Midterm III	Friday	4/10/20	During class time
Final Exam	Wednesday	5/6/20	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 Canvas.

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 : 1/13 - 1/17	<ul style="list-style-type: none"> • Topics: Administration, Introducing Derivatives • Sections: 6.1, 6.2, 6.5
Week 2 : 1/20 - 1/24	<ul style="list-style-type: none"> • Topics: Derivatives • Sections: 6.2, 6.6 • No class Labor Day (9/2) • Pretest due 1/24
Week 3 : 1/27 - 1/31	<ul style="list-style-type: none"> • Topics: Derivatives • Sections: 6.3, 6.4, 6.7 • PS1 due 1/29
Week 5 : 2/3 - 2/7	<ul style="list-style-type: none"> • Topics: Rules of Derivatives • Sections: 6.8, 6.9, 6.10 • PS2 due 2/3, PS3 due 2/7
Week 6 : 2/10 - 2/14	<ul style="list-style-type: none"> • Topics: Review, Rules of Derivatives • Sections: Ch 6 review, 6.11 • Midterm 1 (2/14); PS4 due 2/12
Week 7 : 2/17 - 2/21	<ul style="list-style-type: none"> • Topics: Derivatives • Sections: 7.1, 7.2, 7.7
Week 8 : 2/24 - 2/28	<ul style="list-style-type: none"> • Topics: Introduction to Optimization • Sections: 7.8, 8.1, 8.2 • PS5 due 2/28
Week 9 : 3/2 - 3/6	<ul style="list-style-type: none"> • Topics: Tools for Optimization in Economics • Sections: 8.3, 8.6, 8.7 • PS6 due 3/6
Week 10 : 3/9 - 3/13	<ul style="list-style-type: none"> • Topics: Review, Multivariable Functions • Sections: Ch. 7/8 review, 11.1 • Midterm 2 (3/13); PS7 due 3/11
Week 11 : 3/16 - 3/20	<ul style="list-style-type: none"> • Topics: Partial Derivatives • Sections: 11.3, 11.5, 11.2, 11.6
3/23 - 3/27	Spring Break - Woot! Woot! (No Classes)
Week 12 : 3/30 - 4/3	<ul style="list-style-type: none"> • Topics: Using Multivariable Derivatives, Constrained Optimization • Sections: 11.7, 11.8, 14.1 • PS8 due 4/3
Week 13 : 4/6 - 4/10	<ul style="list-style-type: none"> • Topics: Review, Constrained Optimization • Sections: Ch. 11, 14.1 review, 14.1 • Midterm 3 (4/10); PS9 due 4/8
Week 14 : 4/13 - 4/17	<ul style="list-style-type: none"> • Topics: Integration • Sections: 9.1, 9.2, 9.3
Week 15 : 4/20 - 4/24	<ul style="list-style-type: none"> • Topics: Applications of Integration, Review • Sections: 9.4, 9.5, Review • PS10 due 4/22
Week 16 : 4/27 - 5/1	<ul style="list-style-type: none"> • Semester review • Reading Day (5/1 - No class) • PS11 due 4/29