

ECON 1088 – MATH TOOLS FOR ECONOMISTS II

Summer 2022, Term A

Instructor:	Joseph Fry	Time:	M-F 1pm – 2:35pm
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Office Hours:	Monday 2:45pm-4:45pm	Office:	ECON 309A

1 Course Information

Office Hours Zoom Link: <https://cuboulder.zoom.us/j/96550609177>

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).

Prerequisites: ECON 1078 or equivalent.

Course Description: This class is the second of a two course sequence, building upon the basic foundation developed in ECON 1078. We will study derivatives, optimization, and integrals (chapters 6, 7, 8, 9, 11 and 14 in the textbook). These tools will help you understand the mathematical structure of modern economics and the models used to explain human behavior. A strong grasp of these concepts is **necessary** (but not sufficient) to succeed in later economics courses.

2 Course Policies

General policies

- Class periods will be devoted to lecture and practice.
- Please allow 24 hours for me to respond to emails. This means that if you email me with a question the night before an exam, I may not be able to respond until after the exam has been administered, so please ask questions early and often.
- As the topics build on each other sequentially, attendance is vital to your success in this class.
- *No makeup assignments will be given.*

Grades

- **Distribution:** Below is the weight given to each of the assignments you are expected to complete:
For the midterms, your lowest grade will be dropped and your remaining two midterm grades will receive equal weight. Similarly, your lowest homework grade will be dropped and equal weight will be given to the remaining three.

Pre-test	2.5%	Homework	15%	Midterms	50%
Participation	7.5 %	Final	25%		

- **Reporting:** Grades will be uploaded to Canvas as assignments are graded.
- **Curving:** Exams *may* be curved individually, and a curve *may* be applied to the overall course grade to conform to departmental standards. I will automatically increase final course grades that are 0.5% below any grade cutoff after any final grading curve has been applied.
- **Letter Grade Cutoffs:** Below is the letter grade you will receive for the final score given in the class:

≥ 93	A	87-89.9	B+	77-79.9	C+	67-69.9	D+	≤ 59.9	F
90-92.9	A-	83-86.9	B	73-76.9	C	63-66.9	D		
		80-82.9	B-	70-72.9	C-	60-62.9	D-		

- **Grade Adjustments:** Other than the 0.5% bump discussed above, *I will not grant any request to increase your grade to meet a certain cutoff.* You will receive the grade that *you* earned throughout the course. If you are concerned about your grade(s) you should immediately come talk to me. I will do everything I can to help you be successful in this course.

2.1 Participation

- Participation points will be given using iClicker Cloud for attending class and submitting answers to problems done during lecture

Homework

- A pre-test assignment due **June 1st** will check your ability to use the prerequisite material. This assignment is graded only for completion.
- You will submit one graded homework assignment at the start of class the day before each exam (for a total of 4). Late assignments will receive a 50% penalty if submitted before solutions have posted or a 75% penalty if submitted after solutions have been posted. The problems will mirror the types of questions appearing on the exams. Working in groups is encouraged, however each student must turn in an individual assignment with the names of group members written at the top of the page. Groups may have at most 3 members.
- **3Blue1Brown's** YouTube series *Essence of Calculus* has a series of videos of the deep intuition behind calculus and will help answer the question "What am I even doing?".
- **Khan Academy** is another great supplementary resource which has videos on nearly every topic we cover in this course.

Exams

- **Midterms:** Three midterms 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 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. You will be allowed a 3-by-5 inch notecard on the final to remember important formulas.
- Partial credit will be awarded on all graded assignments.

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. Please consult the University policies below for more detail.

3 University Policies

- **Classroom Behavior:** Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. 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 race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the policies on classroom behavior and the Student Conduct Conflict Resolution policies.
- **Requirements for COVID-19:** As a matter of public health and safety, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements and all public health orders in place to reduce the risk of spreading infectious disease. Students who fail to adhere to these requirements will be asked to leave class, and students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct and Conflict Resolution. For more information, see the policy on classroom behavior and the Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please follow the steps in the “Accommodation for Disabilities” statement on this syllabus. If you feel ill and think you might have COVID-19, if you have tested positive for COVID-19, or if you are unvaccinated or partially vaccinated and have been in close contact with someone who has COVID-19, you should stay home and follow the further guidance of the Public Health Office (contacttracing@colorado.edu). If you are fully vaccinated and have been in close contact with someone who has COVID-19, you do not need to stay home; rather, you should self-monitor for symptoms and follow the further guidance of the Public Health Office (contacttracing@colorado.edu).
- **Accommodation for Disabilities:** If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition, see Temporary Medical Conditions on the Disability Services website.
- **Preferred Student Names and Pronouns:** CU Boulder recognizes that students’ legal information doesn’t always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors’ class rosters. In the absence of such updates, the name that appears on the class roster is the student’s legal name.

- **Honor Code:** All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code academic integrity policy. Violations of the Honor Code may include, but are not limited to: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found on the Honor Code website.
- **Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation:** CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. The university will not tolerate acts of sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, or protected-class discrimination or harassment by or against members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or email cureport@colorado.edu. Information about university policies, reporting options, and the support resources can be found on the OIEC website. Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of incidents of sexual misconduct, dating and domestic violence, stalking, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about their rights, support resources, and reporting options. To learn more about reporting and support options for a variety of concerns, visit Don't Ignore It.
- **Religious Holidays:** 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.

4 Tentative Schedule

The daily 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.

Dates	Content
May 31	<ul style="list-style-type: none"> • Topics: Administration, Introducing Derivatives • Sections: 6.1, 6.2, 6.5
June 1	<ul style="list-style-type: none"> • Topics: Uses of Derivatives • Sections: 6.3, 6.4, 6.6 Pre-test due by 5pm
June 2	<ul style="list-style-type: none"> • Topics: Basic Rules of Derivatives • Sections: 6.7, 6.8
June 3 / June 6	<ul style="list-style-type: none"> • Topics: More Rules of Derivatives • Sections: 6.9, 6.10, 6.11
June 7	<ul style="list-style-type: none"> • Topics: Review; Midterm 1 • Sections: Ch. 6 review Homework 1 by 1:30pm
June 8 / June 9	<ul style="list-style-type: none"> • Topics: Using Derivatives • Sections: 7.1, 7.2, 7.7, 7.8
June 10	<ul style="list-style-type: none"> • Topics: Stationary Points and Optimization • Sections: 8.1, 8.2
June 13 / June 14	<ul style="list-style-type: none"> • Topics: Tools for Optimization in Economics • Sections: 8.3, 8.6, 8.7
June 15	<ul style="list-style-type: none"> • Topics: Review Midterm 2 • Sections: Ch. 7/8 review Homework 2 due by 1:30pm
June 16 / June 17	<ul style="list-style-type: none"> • Topics: Multivariable Functions and Partial Derivatives • Sections: 11.1, 11.5
June 20 / June 21	<ul style="list-style-type: none"> • Topics: Using Partial Derivatives and Constrained Optimization • Sections: 11.7, 11.8, 14.1
June 22	<ul style="list-style-type: none"> • Topics: Review Midterm 3 • Sections: Ch. 11 Review Homework 3 by 1:30pm
June 23	<ul style="list-style-type: none"> • Topics: Introduction to Integrals • Sections: 9.1, 9.2
June 24 / June 27	<ul style="list-style-type: none"> • Topics: Anti-derivatives and Their Interpretations, Intro to Definite Integrals • Sections: 9.3, 9.4
June 28 / June 29	<ul style="list-style-type: none"> • Topics: Definite Integrals and Advanced Integral Rules • Sections: 9.3, 9.6
June 30	<ul style="list-style-type: none"> • Sections: Semester Review Homework 4 due by 1:30pm
July 1	<ul style="list-style-type: none"> • Final Exam Time: TBA