ECON 1088-001 Mathematical Tools for Economists 2
Spring Semester 2022
University of Colorado Boulder

Course Homepage: https://canvas.colorado.edu/courses/74556

Course Monday, Wednesday and Friday 9.05am-9.55am, ECON 117. First two weeks of the semester: Meet online during regular class time: https://cuboulder.zoom.us/j/4608807288
Instructor Anja Gruber (anja.gruber@colorado.edu, https://cuboulder.zoom.us/j/4608807288) **Office Hours:** Tuesday 10-11am and Wednesday 11am-1pm or by appointment. **Email Policy:** I will reply to emails that include "ECON 1088" in the subject line, are professional, follow standard email format, and include your full name within 12 hours during the week and within 24 hours on weekends.

Course Objective

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 and 11 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.

Required Text

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

Pre-Test • Due at the beginning of class on Wednesday, January 12th. Graded for completion.	**2%**
4 Homework Assignments • Due at the beginning of the last class prior to each exam.	**18%**
2 (best of 3) in-class Midterm Exams • Friday, February 4th; Friday, March 4th; Friday, April 8th, 2022.	**25% each**
Final Exam • Tuesday, May 3rd 1.30-4pm in ECON 117	**30%**

Accommodations
If you need any disability accommodations for this course, please contact me within the first two weeks of class via email, in addition to providing the documentation through the portal. If you are dealing with circumstances that prevent you from completing your work on time, please contact me immediately. I will not accept late assignments or reschedule exams unless you contact me prior to the due date or exam date.

Final Grade Allocation
A: >=94, A-: 90-93.9, B+: 87-89.9, B: 83-86.9, B-: 80-82.9, C+: 77-79.9, C: 73-76.9, C-: 70-72.9, D+: 67-69.9, D: 63-66.9, D-: 60-62.9, F: <60.
Final grades will be calculated based on the percentage of possible points you achieved in the course. I may curve individual assignments. I will round up to the next higher letter grade if you are within 0.1 percentage points of reaching the grade. I will reserve the right to adjust your grade to the next higher/lower grade for exceptionally constructive/disruptive classroom behavior.

Course Expectation

You are expected to attend class regularly and refrain from using your phone or laptop during class. I will post lecture notes at the end of each week, but you can expect to benefit from attending lecture. I expect that we use the class time to collaboratively work on problems, and that you actively participate.

Homework

You will submit a homework assignment each at the beginning of the last class period prior to an exam. I will not accept late submissions, as I may go over the solutions during class and will post solutions to aid preparation for the exam. If you cannot attend class, feel free to email me an electronic (scanned) version by 9am. You may collaborate with your peers but you have to hand in your own work.

Exams

Three Midterm Exams will be given during lecture on the dates indicated below. I will drop your lowest Midterm Exam score. Consequently, no make-up exams will be allowed. The final exam is cumulative and will be held on Tuesday, May 3rd at 1.30pm in ECON 117.

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 Code of Conduct.

Requirements for COVID-19

As a matter of public health and safety due to the pandemic, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements, and public health orders in place to reduce the risk of spreading infectious disease. Required safety measures at CU Boulder relevant to the classroom setting include:

- maintain 6-foot distancing when possible,
- wear a face covering in public indoor spaces and outdoors while on campus consistent with state and county health orders,
- clean local work area,
- practice hand hygiene,
- follow public health orders, and
- if sick and you live off campus, do not come onto campus (unless instructed by a CU Healthcare professional), or if you live on-campus, please alert CU Boulder Medical Services.

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 policies on COVID-19 Health and Safety. and classroom behavior. and the . If you require accommodation because a disability prevents you from fulfilling these safety measures, please see the "Accommodation for Disabilities" statement on this syllabus.

Students who have tested positive for COVID-19, have symptoms of COVID-19, or have had close contact with someone who has tested positive for or had symptoms of COVID-19 must stay home and complete the Health Questionnaire and Illness Reporting Form remotely. If you are sick or quarantined, please contact me immediately via email.

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 websiteLinks to an external site.. 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. Violations of the policy may include: 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 at the Honor Code Office website.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

The University of Colorado Boulder (CU Boulder) is committed to fostering an inclusive and welcoming learning, working, and living environment. CU Boulder 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 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 cureport@colorado.edu. Information about the OIEC, university policies, anonymous reporting, and the campus resources can be found on the OIEC website.

Please know that faculty and instructors have a responsibility to inform OIEC when 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 options for reporting and support resources.

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. See the campus policy regarding religious observances for full details.

<h2 style="text-align:center">Course Schedule</h2>

Week	Class Dates	Topic	Chapters	Due
Week 1	M 1/10 W 1/12 F 1/14	Course Introduction, Pre-Test Derivatives	6.1-6.2, 6.4-6.6	**Pre-Test**
Week 2	W 1/19 F 1/21	Rules of Derivatives: Sum, Product, Quotient and Chain Rules	6.3, 6.7-6.8	
Week 3	M 1/24 W 1/26 F 1/28	Rules of Derivatives: Logarithmic, Exponential and Higher Order Derivatives	6.9-6.11	
Week 4	M 1/31 W 2/2 F 2/4	Catch up, Review & Exam Prep	6	**HW 1 Exam 1**
Week 5	M 2/7 W 2/9 F 2/11	Using Derivatives	7.1-7.2,7.7-7.8,7.10-7.11	
Week 6	M 2/14 W 2/16 F 2/18	Introduction to Optimization	8.1-8.3	
Week 7	M 2/21 W 2/23 F 2/25	Tools for Optimization in Economics	8.4-8.7	
Week 8	M 2/28 W 3/2 F 3/4	Catch up, Review & Exam Prep	7, 8	**HW 2 Exam 2**
Week 9	M 3/7 W 3/9 F 3/11	Multivariable Functions	11.1-11.2, 11.5-11.6	
Week 10	M 3/14 W 3/16 F 3/18	Using Partial Elasticities	11.7-11.8	
Spring Break				
Week 11	M 3/28 W 3/30 F 4/1	Constrained Optimization	14.1-14.4	
Week 12	M 4/4 W 4/6 F 4/8	Catch up, Review & Exam Prep	11, 14	**HW 3 Exam 3**
Week 13	M 4/11 W 4/13 F 4/15	Introduction to Integrals	9.1-9.2	
Week 14	M 4/18 W 4/20 F 4/22	Anti-derivatives, Definite Integrals	9.3-9.5	**Tentative: New Instructor**
Week 15	M 4/25 W 4/27	Catch up, Review & Exam Prep	6, 7, 8, 9, 11, 14	**HW 4**
Final	**T 5/3 1.30-4pm**	**Cumulative Final Exam**		

Please note that this syllabus is subject to change. Any changes will be announced on the Canvas Course homepage.