ECON 1088-581 Mathematical Tools for Economists 2
Summer 2024
University of Colorado Boulder

Course Homepage:https://canvas.colorado.edu/courses/104456

Course

Takes place online and asynchronously. Students are expected to complete work on every day of the week at a time that works best for them. Some assignments require use of the online proctoring software Proctorio.

First day of class: Monday, June 3rd, 2024.
Last day of class: Friday, July 26th, 2024.

Instructor

Anja Gruber

Office Hours: Monday 12-3PM or by appointment on Zoom.
https://cuboulder.zoom.us/j/4608807288

Email Policy: This is the best way to get in touch with me. I 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. Please be sure to send all emails from your @colorado.edu email so that they do not end up in my spam folder.
anja.gruber@colorado.edu

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. 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.

Course Prerequisites

Requires prerequisite course of ECON 1078 or MATH 1011 or MATH 1071 or MATH 1150 or MATH 1160 (minimum grade C-) or an ALEKS math exam taken in 2016 or earlier, or placement into pre-calculus based on your admission data and/or CU Boulder coursework.

Required Text

Textbook (required): College Mathematics for Business, Economics, Life Sciences, and Social Sciences, 14th edition with MYLAB MATH. Published by Pearson, Copyright 2019. By Barnett, Ziegler, Byleen, and Stocker. You have automatic access to the online platform (including the e-book) through CU's Day 1 Digital Access. You will automatically be billed $72.28 (before taxes) on your tuition fee bill. This is a low price discounted by the publisher, and not available outside this course. You can opt out of this to avoid the charge but will not have access to the online platform required to complete the course work if you do.

Online Course Structure

This course is organized in daily topics that are taught through a combination of assigned textbook readings, instructional videos, practice questions and graded online homework. Students are tested on the content of the previous week through an online quiz each Monday and are required to complete a proctored final exam at the end of the course. Students are expected and encouraged to utilize the instructor's office hours to get any extra help they need throughout the semester.

Grading

All assignments are based on questions that you have the opportunity to practice ahead of time. Any assignment can be submitted up to 48h late for a penalty of 10%. If you are experiencing extenuating circumstances that warrant a longer grace period, please email your instructor immediately.

Course Logistics Assignments • Syllabus Quiz, Plan My Summer Quiz, MyLab Quiz, Proctoring Quiz • Beginning of Semester and End of Semester Zoom Check-in • 2 attempts each. • Designed to ensure your success in the course.	**5%**
20 (best of 26) Daily Homework Assignments • Due at 12.59PM on the day a topic is covered. • Open book, open note. • 1 attempt each. • Designed to help your learning of each topic.	**40%**
6 (best of 7) Weekly Quizzes • Due at 12.59PM on Mondays. • Require Proctorio. • 60-minute time limit, 1 attempt each. • Designed to test your understanding of the topics covered throughout the previous week.	**25%**
4 Review Videos • Due at 12.59PM on the day of a review. • Graded based on completion only. • Each video requires you to work on and answer a number of in-video questions. • Designed to help you review topics already covered.	**5%**
Final Exam • Open from Friday 7/26 to Sunday 7/28 at 11.59PM. • Requires Proctorio or in-person proctoring.	**25%**

Accommodations

If you need any disability accommodation for this course, please contact me within the first week 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.

Final Grade Allocation

A: >=94, A-: 90-93.99, B+: 87-89.99, B: 83-86.99, B-: 80-82.99, C+: 77-79.99, C: 73-76.99, C-: 70-72.99, D+: 67-69.99, D: 63-66.99, D-: 60-62.9, F: <60.

Final grades will be calculated based on the percentage of possible points you achieved in the course. I will round up to the next higher letter grade if you are within 0.1 percentage points of reaching the grade. Extra credit assignments may be assigned by the instructor to the whole class prior to the start of the final exam period.

Proctoring

The weekly quizzes in this course require the use of the online proctoring software “Proctorio” which is available to students at no charge. Students can choose between using Proctorio or in-person proctoring at the Department of Economics at CU Boulder (for free) or an accredited college or university testing center for the final exam.

Administrative Drops

Students who do not submit any of the graded assignments in the first week of classes will be dropped from the course on Friday, June 6th.

Netiquette

All students should be aware that their behavior impacts other people, even online. I hope that we will all strive to develop a positive and supportive environment and will be courteous to fellow students and your instructor. Due to the nature of the online environment, there are some things to remember.

1. Always think before you write. In other words, without the use of nonverbals with your message, your message can be misinterpreted. So please think twice before you hit submit.

2. Keep it relevant. There are places to chat and post for fun everyday stuff. Do not stray from the discussion in the assigned questions.

3. Never use all caps. This is the equivalent of yelling in the online world. It is not fun to read. Only use capital letters when appropriate.

4. Make sure that you are using appropriate grammar and structure. In other words, I don't want to see anyone writing "R U" instead of "are you". There are people in the class that may not understand this type of abbreviation, not to mention it does nothing to help expand your writing and vocabulary skills. Emoticons are fine as long as they are appropriate. A smile is welcome, anything offensive is not.

5. Treat people the same as you would face-to-face. In other words, it is easy to hide behind the computer. In some cases, it empowers people to treat others in ways they would not in person. Remember there is a person behind the name on your screen. Treat all with dignity and respect and you can expect that in return.

6. Respect the time of others. This class is going to require you to work in groups. Learn to respect the time of others in your group and your experience will be much better. Always remember that you are not the only person with a busy schedule, be flexible. Do not procrastinate! You may be one that works best with the pressures of the deadline looming on you, but others may not be that way. The same is true for the reverse. The key to a successful group is organization, communication and a willingness to do what it takes to get it done.

[Website: http://www.albion.com/netiquette/corerules.html, Compiled by Melissa Landin, Instructor, Dept. of Communication, Inver Hills Community College, mlandin@inverhills.edu]

Technology Requirements

Computer requirements for Canvas:

Visit the official Canvas Computer Specifications Page and Supported Browsers Page for the latest list of recommended system requirements and detailed the detailed list of internet browsers in Windows, MacOS, iOS and Android.

Requirements for Proctorio:

Visit https://proctorio.com/support#minReqs to ensure your device meets the minimum technical requirements. You cannot use a phone to complete Proctorio assignments. You must use Google Chrome, have a working webcam, microphone, and speakers (built in or external). You must have access to a quiet location where you can take the assignment alone and with good internet connectivity.

Required computer skills:

- Using a web browser and word processor.
- Sending and receiving email.
- Locating files and attaching them to an email or upload a file into the course.
- Copy and paste, basic typing skills and keyboard commands.
- Knowledge of basic computer terminology

Technological Support

Canvas technical support:

If you are experiencing issues with Canvas, please contact:

- CU Boulder's Help desk at 303-735-4357 (5-HELP) or help@colorado.edu. 5-Help will answer your call: Monday through Friday from 7:30 a.m. to 7:00 p.m., Saturday and Sunday from noon to 6:00 p.m., Closed during University Holidays
- On your computer, click the “help” (?) icon on the left side of Canvas, once logged in.
- Within the Canvas App, you can search the Canvas support guides, Report a Problem or chat with Canvas Support 24 hours a day, 7 days a week.

MyLab tech support:

- https://help.pearsoncmg.com/ccng/ccng_instr/ccng_xmel_instr_help_support_bridge.html
- https://support.pearson.com/getsupport/s

Proctorio support

- https://proctorio.com/support

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.

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.

Course Withdrawal Policy

Any student who wishes to withdraw from the course must do so by July 25th. For complete information, please visit https://ce.colorado.edu/resources/topics/dates-and-deadlines-online-credit/.

Additional Support Services

A variety of instructional support services, such as the writing center, guidance on personal or educational issues, tutoring questions and library resources are available to the students. For more information about their services, visit their websites linked under modules on Canvas.

Please note that this syllabus is subject to change. Any changes will be announced via email and on the Canvas Course website under "Announcements".

Course Schedule

Date	Topic	Textbook	Due at 11.59PM
Week 1			
M 6/3	Class Introduction		Syllabus Quiz Plan My Summer Quiz Schedule Zoom Check-in
T 6/4	Math Tools 1 Review		Review Video 1 Proctoring Quiz MyLab Quiz
W 6/5	1-Introduction to Limits	9.1	HW1
Th 6/6	2-Infinite Limits and Limits at Infinity	9.2	HW2
F 6/7	3-Continuity	9.3	HW3
Week 2			
M 6/10			Quiz 1
T 6/11	4-The Derivative	9.4	HW4
W 6/12	5-Basic Differentiation Properties	9.5	HW5
Th 6/13	6-Differentials	9.6	HW6
F 6/14	7-Marginal Analysis in Business and Economics	9.7	HW7
Week 3			
M 6/17			Quiz 2
T 6/18	8-The Constant e and Continuous Compound Interest	10.1	HW8
W 6/19	Holiday – No Work Assigned		
Th 6/20	9-Derivatives of Exponential and Logarithmic Functions	10.2	HW9
F 6/21	10-Derivatives of Products and Quotients	10.3	HW10
Week 4			
M 6/24			Quiz 3
T 6/25	11-The Chain Rule	10.4	HW11
W 6/26	12-Elasticity of Demand	10.7	HW12
Th 6/27	13-First Derivative and Graphs	11.1	HW13
F 6/28	14-Second Derivative and Graphs	11.2	HW14
Week 5			
M 7/1			Quiz 4
T 7/2	15-Absolute Maxima and Minima	11.5	HW15
W 7/3	16-Optimization	11.6	HW16
Th 7/4	Holiday – No Work Assigned		
F 7/5	Review Day		Review Videos 2 and 3 Schedule Zoom Check-in
Week 6			
M 7/8			Quiz 5
T 7/9	17-Functions of Several Variables	14.1	HW17
W 7/10	18-Partial Derivatives	14.2	HW18
Th 7/11	19-Maxima and Minima	14.3	HW19
F 7/12	20-Maxima and Minima Using Lagrange Multipliers	14.4	HW20
Week 7			
M 7/15			Quiz 6
T 7/16	21-Antiderivative and Indefinite Integrals	12.1	HW21
W 7/17	22-Integration by Substitution	12.2	HW22
Th 7/18	23-The Definite Integral	12.4	HW23
F 7/19	24-Fundamental Theorem of Calculus	12.5	HW24
Week 8			
M 7/22			Quiz 7
T 7/23	Review Day		Review Video 4
W 7/24	Review Day		HW25 (Practice Final)
Th 7/25	Review Day		HW26 (Practice Final)
F 7/26	Cumulative Final Exam		Complete between F-S 12.59PM