

ECON 1078-004: Math Tools for Economists 1

Instructor: Lauren Schechter, lauren.schechter@colorado.edu
Time: MWF 3:00 – 3:50 P.M.
Location: VAC 1B88 & Zoom
Office Hours: Monday 9:00 – 11:00 A.M.
Tuesday 10:00 – 11:00 A.M.
& by appointment (on Zoom)

Please give me 24 hours to respond to all emails. If you need help with course material, I recommend visiting my office hours instead of asking questions over email, as it is difficult to explain math over email.

Course Description: In order to succeed in economics, a student must be well-versed in a variety of mathematical concepts. The purpose of the two Math Tools courses (1078 and its counterpart 1088) is to prepare students for the math they will encounter in future economics courses. Math will help you understand and describe the way firms and consumers optimize decisions subject to constraints. It will also provide the building blocks you will use in your statistics and econometrics courses, which will enable you to apply economics concepts to real-world data. These skills are crucial to the study of economics.

Required Materials

- Textbook: Essential Mathematics for Economic Analysis. Knut Sydsaster and Peter Hammond with Arne Strom. 4th Edition.
- Computer or other device to connect to Zoom.
- Camera (the camera on a smartphone is fine) or scanner to turn in homework.
- If you have any trouble acquiring the necessary course materials, please let me know ASAP.

Grading

Homework	20%
Participation Quizzes	10%
Exam 1	20%
Exam 2	20%
Final	30%

Note: Any emails after the final exam asking for a grade bump will go unanswered. Please work hard throughout the semester to earn the grade you want. The squeaky wheel does not get the grease in this class, as that is not fair to other students who have worked hard to earn their grades.

Exams: I write the exams such that they can be completed without the use of a calculator. However, you may use a basic, four-function calculator (no graphing calculators and no calculators with an equation solver). Exams will be administered using Proctorio, a software that will monitor your audio, video, and screen during the exam to prevent cheating. If you do not have a device with a webcam and microphone to take the exam, please contact me in advance to

work something out. Nonetheless, since students are very creative in their attempts to cheat, exams will be written such that the answers cannot be easily googled. For example, I may ask you to fill in an intermediate step in a problem rather than asking you for the final answer. In preparation for this, I will always show detailed steps for in-class examples and you will be required to show all work on your homework.

Homework: I will be assigning weekly homework. I do this because mathematics is not a spectator sport. The only way to succeed when it comes to learning mathematics is practice, practice, practice. The weekly homework will be assigned on Monday and due the following Wednesday in class. I will drop the lowest two homework grades. I do not accept late homework. You are required to show all of your work. *No work = no credit.* Homework will be submitted via Canvas – upload a PDF with all of your work each week. I recommend taking pictures of your work and using CamScanner (available for iPhone or Android) or a similar app to upload your work if you do not have access to a scanner. If you have an iPad/tablet and would like to write your work with a stylus, that is fine too. Any way that shows all of your work in a PDF. Please clearly label which work is for which problem, and submit problems in order if possible. Help me help you. Don't make it difficult for me to find your work.

Note: Your cumulative homework grade is the same portion of your grade as one exam. Please take advantage of this and take the homework seriously! You are welcome to work with classmates and see me in office hours if you are having trouble completing the assignments.

Participation: This portion of your grade will come from the Participation Quizzes on Canvas. There will be a Canvas quiz after each lecture, due at the start of the next lecture. It will be a few simple questions about the concepts covered in the lecture. This part of your grade is based on *completion*. This means that whether or not you answer the questions correctly, you will get the points. Although there will be no grade penalty for answering a question wrong, I will monitor your performance on these quizzes and contact you if you appear not to be keeping up with the course. I will everyone's lowest 5 participation quizzes.

Attendance: You will likely attend this class in three ways throughout the semester: in person, remote synchronous, and remote asynchronous.

In person: If, in your pre-semester survey, you opt to be assigned days to attend class in person, you will be given an attendance group. I will post the schedule on Canvas detailing which group is assigned to attend class on which day. *Please do not show up to class when it is not your assigned day – you will be asked to leave due to health and safety constraints.* Only 12 students can attend safely at one time. Per university and Boulder County public health guidance, masks are required for in-person attendance. *If you refuse to wear a mask, you will be asked to leave class.* Students will also be required to maintain six feet of physical distance between each other and the instructor. When you enter the classroom, please try to fill in the seats away from the door first so that others can find a seat without getting within six feet of you.

Note: You will never be required to attend class in person. If you are not feeling well or if you have recently been in contact with someone who tested positive for COVID-19, please stay home.

Remote synchronous: Each day that you are not attending in person, you will have the opportunity to participate live via Zoom. Links are posted on Canvas for the Zoom lectures. I recommend participating synchronously if you can, since I will take questions from both the in-person class and the Zoom class.

Remote asynchronous: All lectures will be recorded and posted for you to watch later in case you are unable to participate synchronously.

Tentative Course Outline

Week	Date	Mode	Content
1	8/24 – 8/28	Hybrid	1.1, 1.2
2	8/31 – 9/4	Hybrid	1.3, 1.4, 1.5
3	<i>(Labor Day)</i> 9/9 – 9/11	Hybrid	1.6, 1.7
4	9/14 – 9/18	Hybrid	2.1, 2.2
5	9/21 – 9/25	Hybrid	2.3, 2.4, 2.5
6	9/28 – 10/2	Hybrid	4.1, 4.2, <i>Review</i>
7	10/5 – 10/9	Hybrid	<i>Exam 1</i> , 4.3, 4.4
8	10/12 – 10/16	Hybrid	4.5, 4.6, 4.7
9	10/19 – 10/23	Hybrid	4.8, 4.9, 4.10
10	10/26 – 10/30	Hybrid	5.1, 5.2, 5.3
11	11/2 – 11/6	Hybrid	5.4, 5.5, 5.6
12	11/9 – 11/13	Hybrid	3.1, 3.2, <i>Review</i>
13	11/16 – 11/20	Hybrid	<i>Exam 2</i> , 3.3, 3.4
14	11/23 – 11/25 <i>(Fall Break)</i>	Hybrid/Remote	3.5, 3.6
15	11/30 – 12/4	Remote	2.7, 15.1, 15.2
16	12/7 Final Exam 12/11 1:30-4 P.M.	Remote Remote	<i>Final Review</i> Comprehensive

Note: The university will be going completely remote after Fall Break at the latest. However, this may happen earlier if required by public health conditions. In light of the shorter Fall Break this year, we will have a fully asynchronous (pre-recorded) lecture on Wednesday 11/25, which you can watch at your convenience. There will be no participation quiz for that day.

Students with Disabilities: If you qualify for accommodations because of a disability, please submit to me a letter from disability services in a timely manner so that your needs can be addressed. Disability services determine accommodations based on documented disabilities. Contact: 303-492-8671, Center for Community N200.

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/>

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 cloth face covering (over nose and mouth), especially when unable to maintain a distance of at least 12 feet,
- Clean local work area, practice hand hygiene, and follow public health orders
- If sick and you live off campus, do not come onto campus (unless instructed by a CU Healthcare professional).
- If sick and 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 Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please see the “Accommodation for Disabilities” statement on this syllabus.