

ECON 4070-001 TOPICS IN MICROECONOMICS

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Class time and location: MWF 10.20am to 11.10am, HLMS 211

Course Description

Topics in Microeconomics uses analytical techniques to examine optimal decision making with certainty, uncertainty and imperfect information. Part I of the course reviews the fundamental economics of consumer choice with certainty. Part II examines risk and information in the context of utility maximization. Part III investigates inefficiencies from imperfect information, such as adverse selection and moral hazard.

The course will ask advanced questions about the choices of firms, consumers and policy makers, and answers those questions through observation, theoretical modeling, and experiments. Theoretical models will be used to obtain intuitive insight on economic behavior and to conduct theoretical “experiments.” In these experiments, the economic model will be shocked with an economic or policy “treatment” and the pre- and post-treatment equilibria results will be compared.

Objectives

Develop the economic tools learned in *ECON 3070 Intermediate Microeconomic Theory* to understand how agents make optimal decisions when facing uncertainty and imperfect information.

Use economic tools to gain greater understanding of the economics of finance and insurance markets, where risk and imperfect information play a key role.

Become comfortable using algebra, calculus, diagrams and excel spreadsheets to develop models that explain microeconomic questions.

Understand the philosophy of economics. Identify errors in economic analysis in the popular press and the wider community.

Prerequisites

Available to students who have completed *ECON 3070 Intermediate Microeconomic Theory*. Completion of *ECON 4808 Introduction to Mathematical Economics*, or the equivalent, is desirable, but not necessary. Please note that the course meets a requirement for The Actuarial Studies Certificate Program and will be taught with some mathematical emphasis. Students should be familiar with microeconomic principles, algebra, calculus, optimization techniques and probability covered in prerequisite classes, and be comfortable expressing these concepts in short-answer questions in homework assignments and examinations.

You will also require a high-speed Internet connection, a printer and a scanner to upload your assignments to Canvas and complete this course.

Instruction Mode and Office Hours

ECON 4070 is an in-person class. I will conduct in-person classes on Monday, Wednesday and Friday that will include lectures, problems and answers to your questions. All class materials, e.g., lecture notes, homework, problem sets, solutions, etc. will be available through Canvas.

There will be no in-person office hours this semester. Virtual office hours will be Monday and Wednesday from 2 to 3pm by email and/or Zoom (if necessary).

Due to the uncertainty and unusual circumstances from COVID-19, I reserve the right to update and/or modify my instruction mode and syllabus, if necessary, as conditions change, and additional information is produced by the University of Colorado. Please check the syllabus and Canvas regularly throughout the semester for potential changes. Thank you and stay safe.

Textbooks

There is no required textbook for this class. Appropriate readings will be indicated during lectures and in my notes provided on Canvas. Your textbook from *ECON 3070 Intermediate Microeconomic Theory* will prove extremely useful for many topics. Alternatively, you may want to consider picking up a second-hand copy of *Microeconomics*, by David Besanko and Ronald Braeutigam, John Wiley & Sons and/or *Intermediate Microeconomics: A Modern Approach*, by Hal Varian, W.W. Norton and Company (5th or any other approximate edition).

Class requirements

Attend classes on Monday, Wednesday and Friday. The critical thinking required for successful completion of this course may not come naturally for many students. In-class (and online) exposure to model building, group exercises, applied problems and solutions is the best way to become proficient in the application of microeconomic theory and the way economists think and solve problems.

For safety and administration reasons, please try to sit in the same seat throughout the semester. I will take attendance for my administrative records, but there will be no formal penalty for non-attendance.

Please inform me immediately if an unforeseen emergency, illness or safety concern impacts your performance. I can help, but I need to know your circumstances as soon as possible to consider suitable alternative arrangements.

Feel free to form study groups to review and discuss lecture/reading material, homework assignments etc. However, you must submit your own individual work for grading. If you work with classmates on assignments, please list the names of these persons on the front page of your individually submitted assignment.

To successfully complete the class, each student should:

- (a) attend three 50-minute classes each week;
- (b) review and augment lecture notes after class;
- (c) be punctual, polite and respectfully engage in class discussion;
- (d) complete (a minimum of six out of seven) homework assignments;
- (e) complete one mid-term quiz;
- (f) complete one mid-term examination;
- (g) complete one final examination;
- (h) cooperate with your classmates and your Professor; and
- (i) carefully practice the University's health and safety measures.

Cellular phones, laptops, tablets and other devices. Personal use of these devices can distract my teaching and other student's learning. Please do not use your device to talk, text, go online, access social media, etc., in class. You may use your device for learning, e.g., electronic notes, photographs of the chalk board, etc., and to practice appropriate health and safety measures. If you use your device for activities that distract me or other students, I will ask you to leave the class immediately.

Grading

There will be seven homework assignments (with the lowest score dropped from the overall homework grade), one mid-term quiz, one mid-term examination, and one final examination. The weights for these assessments are:

Homework assignments	$(6 \times 10 \%)$	60 %
Mid-term quiz	$(1 \times 15 \%)$	15 %
Mid-term examination	$(1 \times 15 \%)$	15 %
Final examination	$(1 \times 10 \%)$	10 %

Homework will consist of short-answer and problem-solving questions that require you to use diagrammatic, mathematical and written skills to prove your answers (i.e., provide an appropriate method and/or logical steps). Homework presentation will count for 20 percent of each of your assignment grades. Please write your mathematical and graphical answers clearly and smartly. Basic requirements for presentation include page numbers, appropriate labels for figures, graphs, tables, etc., clear and transparent economic and mathematical notation, and good grammar and flow. You may use a word processor and/or write neatly with a pen (see Canvas for an example solution). Homework must be saved as a single pdf file and uploaded to Canvas by 5pm on the due date. Submissions after 5pm on the due date will incur a 25 percent penalty. No homework will be accepted after 11.59pm on the due date.

At this stage, the mid-term quiz, mid-term exam and final exam will be completed in class. I will provide more specific details later in the semester as we approach these key dates. The mid-term quiz will be a multiple-choice questionnaire. The mid-term and final examinations will consist of short-answer and problem-solving questions similar to homework questions and class applications. You may need a basic non-programmable

calculator and/or excel spreadsheet software to perform calculations during the quiz and examinations (I will let you know beforehand).

Make-up homework assignments, quizzes or examinations will only be given when there is a proven emergency, health or safety concern, or other unusual circumstance that are discussed with the instructor prior to submission/completion dates. If any issues hinder your performance in the class, please discuss with the instructor sooner than later. Any student that misses the quiz or mid-term exam due to a proven emergency or other circumstances may have their other assessments weighted up with instructor approval.

Important dates for assessment

Sep 1	Homework 1
Sep 15	Homework 2
Sep 29	Homework 3
Oct 11	Mid-term examination
Oct 20	Homework 4
Nov 3	Homework 5
Nov 15	Mid-term quiz
Nov 29	Homework 6
Dec 8	Homework 7
Dec 12	Final examination

The Department of Economics typically provides a free drop-in tutorial office which helps many courses in the major. Details for these tutorials have yet to be announced. Please check in with me after the semester starts.

Campus and department policies

The Department of Economics enforces prerequisites. Students without the appropriate prerequisite(s) may be administratively dropped.

Students and faculty each have responsibility for maintaining an appropriate learning environment. 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 differences of race, culture, religion, politics, sexual orientation, gender, 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. For more information, see the policies on classroom behavior at <https://www.colorado.edu/policies/student-classroom-course-related-behavior> and the student code of conduct at <https://www.colorado.edu/sccr/>.

The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (including sexual assault, exploitation, harassment, dating or domestic violence, and stalking), discrimination, and 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 (see https://cuboulder.qualtrics.com/jfe/form/SV_0PnqVK4kkIJZnf), and the campus resources can be found on the OIEC website at <https://www.colorado.edu/oiec/>.

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

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 who are 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 <https://www.colorado.edu/sccr/honor-code>.

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 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 at <https://www.colorado.edu/sccr/>. For more information, see the policy on classroom behavior and the student code of conduct in the “appropriate learning environment” statement on this syllabus. 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.

As of Aug. 13, 2021, CU Boulder has returned to requiring masks in classrooms and laboratories regardless of vaccination status. This requirement is a temporary precaution during the delta surge to supplement CU Boulder’s COVID-19 vaccine requirement. Exemptions include individuals who cannot medically tolerate a face covering, as well as those who are hearing-impaired or otherwise disabled or who are communicating with someone who is hearing-impaired or otherwise disabled and where the ability to see the mouth is essential to communication. If you qualify for a mask-related accommodation, please follow the steps in the “accommodation for disabilities” statement on this syllabus. In addition, vaccinated instructional faculty who are engaged in an indoor instructional activity and are separated by at least six feet from the nearest person are exempt from wearing masks if they so choose.

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. In this class, if you are sick or quarantined, please inform me as soon as possible.

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 discussed and addressed¹. Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located at <https://www.colorado.edu/disabilityservices/students>. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see <https://www.colorado.edu/disabilityservices/students/temporary-medical-conditions>.

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.

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. In this class, please indicate by email, by the end of the first week, if there is a conflict. See <https://www.colorado.edu/policies/observance-religious-holidays-absences-classes-or-exams> for full details.

Class schedule, lectures, homework etc.

Proposed topics are provided in the table over the page. Please note that the outline of topics is subject to change during the semester depending on how fast we work through the proposed topics (and the extent to which we are adversely impacted by external factors). Any changes will be announced in class and online through Canvas.

Please check Canvas and the syllabus regularly for changes.

Lecture notes and videos, assignment questions and solutions, and additional materials will be available through Canvas.

¹ For this class, "timely" means during the first week of the semester.

Table 1. Proposed course outline

Week	Date	Topic
1.	Aug 23 Aug 25, 27	Part I. Review - Introduction - Consumer choice theory
2.	Aug 30, Sep 1, 3	- Discrete choice
3.	Sep 6 Sep 8, 10	- <i>Labor day: campus closed</i> - Intertemporal consumer choice
4.	Sep 13, 15, 17	- Intertemporal consumer choice
5.	Sep 20, 22, 24	Part II. Risk & Information - Uncertainty
6.	Sep 27, 29, Oct 1	- Insurance and diversification
7.	Oct 4, 6, 8	- Contingent consumption
8.	Oct 11 Oct 13, 15	- <i>Mid-term examination</i> - Risky assets I
9.	Oct 18, 20 Oct 21	- Risky assets I - Risky assets II
10.	Oct 25, 27, 29	- Risky assets II
11.	Nov 1, 3, 5	Part III. Imperfect Information - Adverse selection
12.	Nov 8, 10, 12	- Adverse selection
13.	Nov 15 Nov 17, 19	- <i>Mid-term quiz</i> - Moral hazard
14.	Nov 22, 24, 26	- <i>Fall break: campus closed</i>
15.	Nov 29, Dec 1 Dec 3	- Moral hazard - Applications
16.	Dec 6, 8 Dec 10 Dec 12	- Review and conclude - Reading day - <i>Final examination</i> ²

² See:
https://www.colorado.edu/registrar/students/calendar/finals#classes_that_meet_daily_or_on_mondays_wednesdays_amp_fridays-833.