ECON 4070-001 TOPICS IN MICROECONOMICS

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Office hours: M 2-4pm, W 2-3pm, or by appointment
Class time and location: MWF 1-1.50pm, ECON 119

Course Description
Topics in Microeconomics develops and applies analytical techniques used by
economists to examine decision making with inter-dependence, uncertainty and
asymmetric information. The course comprises four parts. Part I reviews mathematical
concepts and discusses behavioral economics. Part II examines risk and information in
the context of utility maximization. Part III investigates problems with imperfect
information such as adverse selection and moral hazard. Part IV examines topics in law
and economics.

Objectives
Develop the economic tools learned in *ECON 3070 Intermediate Microeconomic Theory*
to understand how agents make optimal decisions when facing uncertainty and
asymmetric 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 and diagrams to develop models that explain
microeconomic questions.

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. Please note that the course meets a requirement for The Actuarial
Studies Certificate Program. The course will be taught with 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.

Textbooks
There is no required textbook for this class. Appropriate readings will be indicated during
lectures and updated on Desire2Learn. Outlines of lecture notes will also be provided on
Desire2Learn. 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 (any latter edition).

Class requirements
The class meets Monday, Wednesday and Friday from 1 to 1.50pm. Please be aware that the critical thinking required for successful completion of this course may not come naturally for many students. In-class exposure to model building, group exercises, applied problems and solutions via class attendance is the best way to become proficient in the application of microeconomic theory and the way economists think and solve problems.

Craig and Savage (2014) show that a ten percent increase in attendance is associated with a one percentage point improvement in final exam score for undergraduate industrial organization students, which could mean the difference between a grade of B- and C+. See "Instructor Attire and Student Performance: Evidence from an Undergraduate Industrial Organization Experiment," *International Review of Economics Education*, 2014, 17, 55-65.

Feel free to form study groups to review and discuss lecture/reading material, homework assignments etc., but you must submit individual work for grading (note: if you work with a study group or individual class mates on assignments, please list the names of these persons on the front page of your submitted assignment).

Students should:
- (a)   attend three 50 minute classes per week;
- (b)   review and augment notes after lectures;
- (c)   complete (a minimum of four out of five) homework assignments;
- (d)   complete one quiz;
- (e)   complete two mid-term examinations; and
- (f)   complete one final examination.

Students are expected to be punctual, polite and prepared to engage in discussion with the instructor and class mates. See http://colorado.edu/policies/classbehavior.html for University of Colorado polices on student classroom and course-related behavior.

There will be no cellular phones in this class. Cellular phone use by students distracts my teaching, and other student's learning. Please turn off your cellular phone before entering class and keep the phone out of sight, i.e., place it in your bag, pocket, or purse. If I see you using your phone without permission, you will be told to leave the class immediately.

There will be no open laptops or tablets in this class. Laptop and tablet use by students distracts my teaching, and other student's learning. I provide very detailed lecture notes on Desire2Learn which you can print out and bring to class. If I see you using your laptop or tablet without permission, you will be told to leave the class immediately.

If you have any suggestions for my cellular phone, laptop, and tablet policy, please discuss these with me during the first week of class. If you do not like the policy, no worries, don't come to class or, alternatively, find another class to enroll in. Thank you kindly.

Recent research highlights some of the negative impacts of laptops and tablets in the classroom. **Mueller and Oppenheimer (2014)** had 67 undergraduates watch lecture videos. Half were assigned to watching the lectures and taking notes on a laptop. The other half watched lectures while taking notes traditionally with paper and a pen. All students were then given an exam, and those who took notes with a laptop scored much lower on conceptual questions than those that did not. See "The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking", *Psychological Science*, 2014, 25, 1159-1168.

Grading

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

Homework assignments	$(4 \times 7.5\,\%)$	30 %
Quiz	$(1 \times 10\,\%)$	10 %
Mid-term examination	$(2 \times 20\,\%)$	40 %
Final examination	$(1 \times 20\,\%)$	20 %

Homework questions will consist of short-answer and problem solving questions that require students to use diagrammatic, mathematical and written skills to prove their answers (i.e., please provide an appropriate method and/or logical steps to prove your answer). The presentation of your homework solutions will count in your assignment grade. Please take the time to clearly and neatly write out mathematical and graphical answers. Basic requirements for presentation include: name on first page; staple pages; place page numbers on each page; clearly title and label any graphs, tables, etc.; and ensure mathematical notation is clearly legible and readable. An electronic word document helps to ensure neat presentation, but it is not necessary. Homework must be submitted before the beginning of the class lecture (i.e., within the first five minutes) on the due date. Late submissions will incur a 25 percent penalty. No homework will be accepted after the class on the due date.

The mid-term and final examinations will consist of short-answer and problem solving questions similar to homework questions and class applications. You will need a basic non-programmable calculator to perform calculations during the exams.

There will be no make-up homework assignments, quizzes or examinations unless there is a proven emergency or other unusual circumstances that have been discussed with the instructor prior to submission/completion dates. If you aware of any problems that may hinder your performance in the class please discuss with the instructor sooner than later. Any student that misses the mid-term examinations due to proven emergency or other circumstances may have their final exam weighted up with instructor approval.

The final examination is scheduled for May 4, 1.30pm. See https://www.colorado.edu/registrar/sites/default/files/attached-files/spring2015final_exam_schedule.pdf.

Important dates for assessment	
Feb 4	Homework 1
Feb 20	Mid-term exam I
Mar 4	Homework 2
Mar 18	Homework 3
Apr 3	Mid-term exam II
Apr 8	Homework 4
Apr 17	Quiz
Apr 22	Homework 5
May 4	Final examination

Campus and department policies
The Department of Economics enforces prerequisites. Students without appropriate prerequisites 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. See polices at http://www.colorado.edu/policies/classbehavior.html and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

The University of Colorado at Boulder policy on Discrimination and Harassment, the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships apply to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status 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, the above referenced policies and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at http://www.colorado.edu/odh.

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/.

Disability Services' letters for students with disabilities indicate legally mandated reasonable accommodations. The syllabus statements and answers to Frequently Asked Questions can be found at http://www.colorado.edu/disabilityservices.

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. In this class, please indicate by email, near the beginning of the semester, if there is a conflict. See full details at http://www.colorado.edu/policies/fac_relig.html.

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 term depending on how fast we work through the proposed topics. All changes will be announced in class and online via the class website through Desire2Learn.

Please check the website and syllabus regularly for changes.

Class lecture handouts, assignment questions, solutions and additional reading materials will be made available when appropriate via the website.

Table 1. Proposed course outline

Week	Date	Topic
1.	Jan 12 Jan 14, 16	**Part I. Review** - Introduction - Game theory
2.	Jan 19 Jan 21, 23	- *No class: Martin Luther King Day* - Game theory
3.	Jan 26, 28, 30	- Game theory
4.	Feb 2, 4, 6	- Behavioral economics
5.	Feb 9, 11, 13	**Part II. Risk & Information** - Utility maximization with certainty
6.	Feb 16, 18 Feb 20	- Uncertainty, risk - *Mid-term exam I*
7.	Feb 23, 25, 27	- Uncertainty, risk
8.	Mar 2, 4, 6	- Insurance and diversification
9.	Mar 9, 11, 13	- Risky assets
10.	Mar 16, 18, 20	**Part III. Imperfect Information** - Adverse selection
11.	Mar 23, 25, 27	- *No classes: Spring Break*
12.	Mar 30, Apr 1 Apr 3	- Adverse selection - *Mid-term exam II*
13.	Apr 6, 8, 10	- Moral hazard
14.	Apr 13, 15 Apr 17	- Contracts - *Quiz*
15.	Apr 20, 22 Apr 24	**Part IV. Law & Economics** - Crime and punishment - Liability law
16.	Apr 27, 29, May 1	- Topic to be determined
17.	May 4	- *Final exam*