ECON 4070-001 TOPICS IN MICROECONOMICS

Instructor: Prof. Anna Rubinchik

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1 General Information

Office: ECON 11,

Department of Economics, 256 UCB, Boulder, CO 80309-0256. Email: annarubinchik@gmail.com Web site: https://sites.google.com/edu.haifa.ac.il/arubinchik/ Office hours: MW 2:00pm-3:00pm, or by appointment Class time and location: MWF 1-1:50pm, CLUB 4.

2 Course Description

Topics in Microeconomics uses analytical techniques to examine optimal decision making under uncertainty including analysis of strategic situations. 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 common fallacies in making decisions under uncertainty, while offering neuro-economic explanations for some such phenomena.

The course meets a requirement for The Actuarial Studies Certificate Program.

3 Objectives

Develop the economic tools 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 observed phenomena.

4 Prerequisites

The required prerequisite is ECON 3070, Intermediate Microeconomic Theory. The Department of Economics enforces prerequisites. Students without the appropriate prerequisite(s) may be administratively dropped.

Completion of ECON 4808 Introduction to Mathematical Economics, or the equivalent, is recommended.

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.

5 Textbook

Bolton, Patrick, and Mathias Dewatripont. Contract theory. The MIT press, 2005. Selected chapters. (BD)

6 Class requirements

1. 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 is the best way to become proficient in the application of microeconomic theory and the way economists think and solve problems.

Lecture notes contain a list of basic concepts and formal statements. The definitions of the concepts, examples and proofs of the formal statements should be completed by the student after each lecture.

However, roll will not be called and attendance will not be directly factored into the final grade.

2. Homework assignments. The students are strongly encouraged to complete homework assignments by the due date. On the due date we solve the assignment and all the relevant questions will be answered. The assignments are not to be handed in and will not be factored in the final grade. The assignments are there to make you understand and master the material and be prepared for the exams. Students are encouraged to form study groups to review and discuss lectures, reading material and homework assignments. However, assignments and exams should be completed by each student independently.

- 3. Midterm Examination.
- 4. Final Examination.

Both the midterm and the final exams are administered in class.

Students are expected to be punctual, polite and prepared to engage in discussion with the instructor and classmates. See the CU Student Classroom and Course-Related Behavior guidelines.

Please turn off your cellular phone, laptop, tablet and any other personal electronic device before entering class and keep it out of sight, i.e., place it in your bag, pocket, or purse. Use of the electronic device will result in a request to leave the classroom.

7 Grading



Final exam

To get bonus points (up to 10) a student can choose to present in class a research paper from the list offered by the instructor. Please, contact the instructor for details. The mid-term and final examinations will consist of short-answer questions and problems similar to homework assignments and class applications. You are welcome to use a basic calculator during the exams. The arguments in the solutions have to be precise and formal whenever possible. Formal argument requires a full list of underlying assumptions and a clear sequence of steps leading to the conclusion stated in the answer. The steps might involve some basic algebra and calculus. Diagrams can be used to illustrate the answer and the steps. However, a diagram can not replace a proof (formal argument).

There will be no make-up examinations.

If you aware of any problems that may hinder your performance in the class please discuss them with the instructor.

Any student who misses the mid-term examination due to proven medical emergency may have their final exam weighted up with instructor's approval.

Assignment	Due date
Homework 1	Week 3, Friday, September 14
Homework 2	Week 5, Friday, September 28
Homework 3	Week 7, Friday, October 12
Midterm exam	Week 9, Friday, October 26
Homework 4	Week 11, Friday, November 9
Homework 5	Week 14, Friday, November 30
Final exam	Monday, December 17, 1:30 p.m.– 4:00 p.m.

8 Important dates for assessment

Students who have three or more final exams on the same day are entitled to reschedule all exams after the first two. The deadline for making these arrangements is November 2.

In this class, every effort was made to avoid scheduling the assessment dates on religious holidays. Nevertheless if, because of religious observances, you detect a conflict with the assessment dates, please contact the instructor by email during the first two weeks of the semester.

9 Class schedule

Lecture notes and homework assignment questions will be available in class. Homework assignments will be solved in class on the due date.

Week	Topic
1	Part I. Review.
	Introduction. Basic Concepts from Probability and Statistics
2	Part II.
	Risk and Information. Decision Making Under Uncertainty: What is 'rational'?
3	Behavior Under Uncertainty: What is 'irrational'?
4	Risk, attitudes towards risk.
5	Risky assets, basic problem of an investor, diversification.
6	Market risk premium in financial and labour markets.
7	Markets with uncertainty, coinsurance in 'perfect markets' (BD 1.2.1, 1.2.2)
8	Part III. Imperfect Information.
	Overview of static bilateral contracting. Adverse selection, signalling (BD 1.3.1)
9	Moral hazard (BD 1.3.2)
	Midterm.
10	Game theory. Nash Equilibrium. Perfect Bayesian Nash Equilibrium.
11	Optimal contracts under asymmetric information: hidden information (BD 2, 3).
12	Optimal contracts under asymmetric information: hidden actions (BD 4).
13	Disclosure of Private Certifiable information (BD 5).
14	Dynamic Contracts, an overview (BD 9, 10)
15-16	Part IV. Neuroeconomics and decision-making under uncertainty
	Can we identify patterns of common mistakes?

10 Campus and department policies

- The complete up-to-date required syllabus statements can be found at https://www.colorado.edu/academicaffairs/policies-customs-guidelines/
 required-syllabus-statements.
- Disability Services can be contacted by telephone at 303-492-8671, or in person at the Center for Community. University policies regarding disabilities are available at http://www.colorado.edu/disabilityservices.
- University policies regarding Discrimination and Harassment, Sexual

Misconduct and Amorous Relationships are available at http://www.colorado.edu/institutionalequity/policies.

• The Honor Code is enforced by the Office of Student Conduct & Conflict Resolution. It can be contacted by email at

studentconduct@colorado.edu

or by telephone at 303-492-5550. Additional information regarding the University Honor Code is available at http://www.colorado.edu/policies/student-honor-code-policy and at https://www.colorado.edu/osccr/honor-code.

- The Office of Victim Assistance can be reached at 303-492-8855. http: //www.colorado.edu/ova/.
- The webpage http://www.colorado.edu/undocumented contains information regarding campus counseling resources available for students and employees with DACA Status.
- The repository of all campus policies is http://www.colorado.edu/policies/.
- The Economics Department provides a free drop-in tutorial office which provides assistance on all core courses in the major, and occasionally on other undergraduate courses in the Department. Its website is https://www.colorado.edu/economics/undergraduate/drop-tutorial-lab.