

Syllabus for MICROECONOMICS I

Lecturers: Anna Yurko

Class Teachers: Anna Yurko

Course Description

Microeconomics I is the first part of the two-semester graduate-level course which provides a rigorous treatment of microeconomic theory and its applications. We first study the decisions of individual economic agents, beginning with the theory of consumer choice and the producer theory. We introduce the concept of duality and analyze it in the context of consumption and production decisions. Afterwards, we study decision-making under uncertainty and introduce the expected utility theory. We also discuss its critiques. The course proceeds with the study of competitive equilibrium and its welfare properties in a general equilibrium setting.

Teaching Objectives

The objective of the course is to provide the students with a thorough knowledge and understanding of the foundations of modern economic analysis. The students will be introduced to the classical results and recent developments in microeconomic theory but the main focus will be on developing their modeling skills and encouraging them to think analytically about real-world phenomena.

Prerequisites:

Intermediate Microeconomics, Calculus, Linear Algebra, Probability

Teaching Methods

Lectures, discussions, and problem-solving sessions.

Grade determination, first semester

The students should regularly hand in assignments selected problems of which will be discussed in class. The grade for the first semester of the course will be based on the final exam (55%), a midterm exam (35%), homeworks (5%), and class attendance (5%).

Main reading

- Varian, Hal (1992): *Microeconomic Analysis, Third Edition*, W. W. Norton & Company, Inc, New York.
- Mas-Colell, Andreu, Whinston, Michael and Jerry Green (1995): *Microeconomic Theory*, Oxford University Press, Oxford, New York.
- Gibbons, Robert (1992): *Game theory for Applied Economists*, Princeton University Press, Princeton, New Jersey.

Varian (1992) [hereafter, V] is the main book of the course. Mas-Colell et al. (1995) [hereafter, MWG] is more formal but less intuitive than V and may be consulted by the more technically inclined.

Additional reading

- Simon, Carl and Lawrence Blume (1994): *Mathematics for Economists*, W. W. Norton & Company.
- Kreps, David (1990): *A Course in Microeconomic Theory*, Princeton University Press, Princeton, New Jersey.
- Rubinstein, Ariel (2006): *Lecture Notes in Microeconomic Theory*, Princeton University Press, Princeton and Oxford, <http://arielrubinstein.tau.ac.il/Rubinstein2007.pdf>

Simon and Blume (1994) is an excellent reference book for the mathematical tools used in this course. Kreps (1990) is a more intuitive textbook on microeconomic theory than MWG and can also be used to study the material. Rubinstein (2006) is available on-line; it is based on Rubenstein's lecture notes for the graduate-level microeconomics course. The book provides good intuition and thorough treatment of the following topics: consumer choice, producer theory and choice under uncertainty.

Course outline

[Required readings are marked by an asterisk (*)]

1. Consumer Choice Theory (5 lectures, 3 seminars)

This chapter studies in detail the individual decisions of consumers. First, we consider individual decision making in an abstract setting: the preference-based vs. the choice-based approach. Then, we focus on the optimal decisions of individual consumers. We derive individual demands and work out their properties. We further discuss the duality of utility maximization and expenditure minimization, study the problem of integrability, and analyze the relation between the earlier results and the choice-based approach. We conclude with the issues of demand aggregation.

- V, Chapters 7-10.*
- MWG, Chapters 1-4.*
- Rubinstein (2006), Lectures 1-6.
- **Simon and Blume (1994)**, Chapters 16-21.

2. Producer Theory (3 lectures, 1 seminar)

This part of the course studies the behavior of the firm and develops a theory parallel to the theory consumption analyzed earlier. We study profit maximization and cost minimization, work out the properties of firm's supply, discuss efficiency in production. The chapter finishes with supply aggregation.

- V, Chapters 1-6, 13.3.*
- MWG, Chapter 5.*

- Rubinstein (2006), Lecture 7.

3. Choice Under Uncertainty (4 lectures, 2 seminars)

We start by learning how to represent risky alternatives by means of lotteries. Then, by imposing rationality, continuity, and independence on individual preferences we obtain a central result known as the expected utility theorem. We analyze the attitude of different individuals towards risk and discuss some classical measures of risk aversion. We then move to comparing alternative distributions of monetary returns in terms of stochastic dominance. We consider the limitations of the expected utility theory and we provide Savage's foundation for subjective expected utility theorem. Violations of Savage axioms lead to a brief discussion of Ellsberg's paradox and ambiguity aversion.

- MWG, Chapter 6 (A-D). *
- Handout on savage axioms. *
- Rubinstein (2006), Lectures 8-9.

4. General Equilibrium (4 lectures, 2 seminars)

In this part of the course we consider a competitive market economy in a general equilibrium setting. We formally introduce the notions of Pareto optimality and competitive (or Walrasian) equilibrium and analyze their interrelation summarized in the two fundamental theorems of welfare economics. We study in detail the 2 by 2 exchange economy model and the 2 by 2 (two products, two factors) production economy model.

- MWG, Chapters 15 (A-D), 16 (C), 17 (A-B), 19 (A-D). *

Distribution of hours

№	Topic	Total (hours)	Contact hours		Self-study
			Lec- tures	Semi- nars	
1.	Consumer Choice Theory	36	10	6	20
2.	Producer Theory	20	6	2	12
3.	Choice under Uncertainty	27	8	4	15
4.	General Equilibrium	27	8	4	15
	Total:	110	32	16	62