Microeconomics I
Lecture 1: Introduction

Mohammad Vesal
Graduate School of Management and Economics
Sharif University of Technology

44715
Fall 1397
Outline

What is this course about?

Administrative issues
What is Microeconomics?

Microeconomics is the analysis of the behavior of individual economic agents in various institutional frameworks.

- Main theme: economic activity as interaction of agents pursuing their private interests.
- Key objectives:
  - How behavior is affected by the institutional framework.
  - Provide a benchmark for understanding behavior.
  - Whether/How to intervene in markets.
Key elements

- **Agents**
  - Individuals, firms, government, ...

- **Theories of decisions**
  - How do agents decide what to choose/do?

- **Institutional framework**
  - What are the restrictions imposed on interactions?
  - Feasible alternatives.

- **Equilibrium**
  - How do we define the equilibrium?
Example 1

- **Agents**: individuals
  - own labor and capital
  - earn wages and profits
  - produce and consume commodities

- **Decision rule**: maximize utility

- **Institutional framework**: competitive markets

- **Equilibrium**: demand and supply equate in all markets
Example 2

- Agents: firm 1 and 2
- Decision rule: maximize profits
- Institutional framework: firms set prices and produce enough output to meet demand (Bertrand competition)
- Equilibrium: Nash equilibrium
Individual decision making (in competitive markets)

- What is a plausible characterization of the decision process?
- What are the outcomes?
  - Demand: Individual consumers decide how much to consume of various commodities.
  - Supply: Firms decide how much to produce of various commodities.
Overview: Microeconomics I

Individual decision making (in competitive markets)

- What is a plausible characterization of the decision process?
- What are the outcomes?
  - Demand: Individual consumers decide how much to consume of various commodities.
  - Supply: Firms decide how much to produce of various commodities.

Market equilibrium

- Aggregation of individual demand and supply
- Equilibrium price and allocation
Our goals in Microeconomics I

- to build/solve economic models of individual/firm decision making
- to discuss the possibility of aggregating individual demand/supply
- to solve for market equilibrium and characterize its properties
Overview: Microeconomics II

• Decision making under conditions of uncertainty
• Game theory, a.k.a. strategic interaction of rational agents
• Market power: monopoly, oligopoly
• Externalities
• Public goods
• Signaling and screening
• Principal-agent framework
Overview: Microeconomics II

- Decision making under conditions of uncertainty
- Game theory, a.k.a. strategic interaction of rational agents
- Market power: monopoly, oligopoly
- Externalities
- Public goods
- Signaling and screening
- Principal-agent framework

- Main theme: market failures
Rationality

Throughout we assume agents are rational optimizers (will clarify this later).

- NOT because we believe this is the best representation of the world
- But because this is the *simplest* and the most *natural* beginning
Rationality

- Throughout we assume agents are rational optimizers (will clarify this later).
  - NOT because we believe this is the best representation of the world
  - But because this is the simplest and the most natural beginning

- One way to be rational but many ways to be irrational
  - If we learn how rational optimizers behave, then we can think about different ways of irrationality.
Rationality

- Throughout we assume agents are rational optimizers (will clarify this later).
  - NOT because we believe this is the best representation of the world
  - But because this is the *simplest* and the most *natural* beginning

- One way to be rational but many ways to be irrational
  - If we learn how rational optimizers behave, then we can think about different ways of irrationality.

- Examples of irrational behavior: inertia, default bias, ...
Outline

What is this course about?

Administrative issues
List of topics

- Main text is Varian
  - Consumer theory (Ch 7, 8, 9, 10)
  - Producer theory (Ch 1, 2, 3, 4, 5, 6)
  - General equilibrium (Ch 17, 18)
  - Partial equilibrium (Ch 13)

MWG is also very useful.
List of topics

- Main text is Varian
  - Consumer theory (Ch 7, 8, 9, 10)
  - Producer theory (Ch 1, 2, 3, 4, 5, 6)
  - General equilibrium (Ch 17, 18)
  - Partial equilibrium (Ch 13)

- Proofs?
List of topics

• Main text is Varian
  ■ Consumer theory (Ch 7, 8, 9, 10)
  ■ Producer theory (Ch 1, 2, 3, 4, 5, 6)
  ■ General equilibrium (Ch 17, 18)
  ■ Partial equilibrium (Ch 13)

• Proofs?

• MWG is also very useful.
Teaching

• Lectures
  ■ deliver the content, flag important concepts, raise discussion
  ■ Saturday and Monday 11-12:30 (class 7)
  ■ Office hours: Saturday/Monday 10-11 or by appointment
  ■ contact: m.vesal AT sharif . edu
Teaching

- Lectures
  - deliver the content, flag important concepts, raise discussion
  - Saturday and Monday 11-12:30 (class 7)
  - Office hours: Saturday/Monday 10-11 or by appointment
  - contact: m.vesal AT sharif . edu

- Classes
  - for discussion of assignments (one per week), starts week 2
  - Teachers: Mahyar Habibi, Mohammad Reza Nafisi, Mahtab Karimi.
  - time and location: TBA.
Teaching

- Lectures
  - deliver the content, flag important concepts, raise discussion
  - Saturday and Monday 11-12:30 (class 7)
  - Office hours: Saturday/Monday 10-11 or by appointment
  - contact: m.vesal AT sharif . edu

- Classes
  - for discussion of assignments (one per week), starts week 2
  - Teachers: Mahyar Habibi, Mohammad Reza Nafisi, Mahtab Karimi.
  - time and location: TBA.

- Attendance in both lectures and classes are mandatory and will be monitored closely.
Evaluation

- Midterm exam (30%), Wednesday 30 Aban 1397, 9:00
- Final exam (40%): 26 Dey 1397, 9:00
- Assignments (10%):
  - You’ll get 13 assignments. Submission is mandatory.
  - Encouraged to work in teams but will need individual submission
- Essays (10%): 2 essays, the max will be counted.
- Quizzes (10%): 5 quizzes, the lowest will be eliminated.
- Class participation (5%): bonus!
Short questionnaire

1. Have you ever had a micro course before? If yes, let me know the textbook you studied.

2. What is your plan after you finish your MSc here? a) PhD abroad, b) PhD in Iran, c) work, d) no plans

3. Math test:
   3.1 Briefly explain what it means to say set A is “a convex set”.
   3.2 Consider $f : \mathbb{R}^2 \rightarrow \mathbb{R}$, with $f(x, y) = x^\alpha y^{1-\alpha}$, assuming $\alpha \in [0, 1]$. First, calculate the first derivatives of $f$. Second, plot the contour line when $f = 1$ (assume $\alpha = 0.5$)?
   3.3 Have you ever heard of Lagrangian?

4. Writing test: in a short paragraph (preferably in Farsi) explain “Poverty can be eliminated if the rich each contribute a dollar to the poor”.