

# Microeconomics: Markets, Strategies and Information

6 ECTS

TERM 1

MANDATORY COURSE

## Professor

Prof. Fernando Payró

## Prerequisites to enroll

None.

## Overview and objectives

The course aims at providing students with the basic tools of Game Theory and Microeconomic Analysis, while bearing in mind the main objectives of the MCR and EPP programs. Applications to these areas will be given to illustrate the predictive power of these tools, with the final objective of making policy recommendations.

## Course outline

- 1. Game theory: simultaneous-move games.** A) Formalizing strategic situations (players, actions, payoffs). B) Best response, dominant strategies, Nash equilibrium.

2. **Game Theory: sequential games.** A) Eliminating non-credible threats. B) Backward induction, subgame perfect Nash equilibrium.
3. **Game Theory: repeated prisoner's dilemma.** a) Repetition of the one-shot Nash equilibrium. B) Trigger strategies: sustaining cooperation.
4. **Game Theory: Games of Incomplete Information (Examples)** A) Simultaneous-move game. B) Signaling game.
5. **Consumer theory:** A) Utility, budget constraints, choice. B) Demand analysis, aggregate demand, elasticity, consumer surplus.
6. **Market failures:** Externalities.
7. **Market failures:** Public goods.
8. **Applications of consumer theory:** A) Risk aversion. B) Insurance.
9. **Producer theory:** A) Technology, cost minimization. Long-run vs short-run. B) Profit maximization in perfectly competitive markets: a firm's supply and aggregate supply, short-run vs long-run equilibrium. Producer surplus.
10. **Equilibrium in perfectly competitive markets:** A) Short-run vs long-run equilibrium. B. Welfare Analysis. C) Tax Burden.
11. **Hidden information: Akerlof's model.** A) equilibrium with rent transfers. B) Equilibrium with adverse selection: inefficient trade, market collapse. C) Constrained efficiency, public intervention.
12. **Hidden Information: Spence's model.** A) Separating equilibria: education as a signaling device. B) Pooling equilibria. C) Constrained efficiency, public intervention.
13. **Hidden action: Moral hazard in the credit market.** A) Informational rents. B) Inefficient effort.

## Required activities

Problem sets will be distributed regularly. Some selected problems will be graded. Solutions for all problems will be published in the intranet.

## Materials

### Units 1-4

Harrington, J. (2009), *Games, Strategies and Decision Making*. Worth Publishers.

Watson, J. (2013), *Strategy: An Introduction to Game Theory*. Norton. 3th edition.

### Units 5-10

Varian, Hal, *Microeconomic Analysis*, Norton

Mas-Colell, A., Whinston, M., and Green, J. (1995), *Microeconomic Theory*, Oxford University Press

### Units 11-13

Macho-Stadler, I. and D. Perez-Castrillo (2005), *An Introduction to the Economics of Information*. Oxford University Press, 2<sup>nd</sup> edition.

Mas-Colell, A., Whinston, M., and Green, J. (1995), *Microeconomic Theory*, Oxford University Press

## Evaluation

Problem sets (20%) Final Assignment (10%) Final Examination (70%)

## Competencies

- ☒ To (be able to) communicate with determination and in the English Language, the results and implications of the required analytical study using a language that the receiver can relate to.
- ☐ To work within a heterogeneous team of researchers as economic analyst using specific group techniques.
- ☐ To fit in diverse professional environments and varied types of collaborations in different professional projects

- ☒ To possess and understand the knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context.
- ☒ That students know how to apply the acquired knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
- ☐ That the students be able to integrate knowledge and face the complexity of making judgments based on information that, being incomplete or limited, include reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.
- ☒ That the students be able to communicate their conclusions and the knowledge and the ultimate reasons that sustain them to both, specialized and non-specialized publics in a clear and unambiguous way.
- ☒ That students possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.
- ☒ To identify and apply the insights of the theory, the models, and the analytical tools of modern economy to its global dimension

## Learning outcomes

- ☒ Knows the quantitative economy
- ☒ Knows the different specific fields in economy
- ☒ Knows the theory, practice, fundamentals and applications of economic policies
- ☐ Knows the theory and practice of financial markets
- ☐ Analyzes the problems of banking management and other financial institutions using economic theory.