

14E024

Microeconomics II

Term 2 – 6 ECTS

Elective Course

Prof. Joan de Martí

Prerequisites to Enroll

Some elements of mathematics (probability theory, calculus) are recommended.

Overview and Objectives

This course extends the analysis of Microeconomics I to situations with strategic interactions, that is, of economic situations where the choice of an agent has an impact on the utility of other agents. This involves, for example, the analysis of public goods, and different mechanisms to allocate goods such as auctions or bargaining.

We will first provide the basic elements of (non-cooperative) game theory, the main tool to analyze strategic interactions in economics. This will include the basic notions of equilibrium and refinements (Nash, subgame perfection, Bayesian equilibrium, Perfect Bayesian Equilibrium...). As we proceed, we will apply this toolbox to the study of several economic questions including firms' decisions in oligopoly markets, individual provision to a public good, bidding behavior in several auction formats, bargaining decisions in negotiations, and the analysis of repeated interactions.

As we advance, we are also going to include some discussion of relevant families of games for applied work, like supermodular games or global games, for example. We are also going to introduce some basic ideas of cooperative game theory.

Finally, we are going to explore mechanism design theory, that deals with the question of the design of optimal institutions, given a particular set of goals, when individual information is private. The analysis in this section connects with a number of questions covered previously such as adverse selection problems, public good provision games, or auctions.

Course Outline

Strategic Interactions. Game Theory.

Normal and Extensive Form

Imperfect Information

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Incomplete Information

Repeated Games

Cooperative Games

Strategic Interactions. Applications.

Markets

Negotiation

Auctions

Signaling

Communication

Mechanism Design

The Adverse Selection Problem Revisited

Myerson-Satterthwaite Theorem

Auctions and Revenue Equivalence

Required Activities

There will be several problem sets that students must complete.

Evaluation

30% problem sets and 70% final exam.

Competences

- x Capacity of utilization of the theoretical instruments of the to analyze situations of coherent form.
- x Ability to use the appropriate (statistical and numerical) techniques.
- x Acquire a solid knowledge base for the study of quantitative issues.

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x Ability to work with microeconomic analysis tools and their empirical and theoretical applications.

Learning Outcomes

x Students should get an overview of economic and financial theory.

x Students must be able to recognize theories and present arguments with precise examples.

x Students will have the ability to understand how markets work and explain their weaknesses.

Materials

These textbooks can prove particularly useful:

Gibbons, R. (1992). A primer in game theory.

Jehle, G. and P. Reny (2001), *Advanced Microeconomic Theory*, Addison Wesley.

Osborne, M. (2003) *Introduction to Game Theory*, Oxford University Press

Tadelis, S. (2013) *Game Theory: An Introduction*, Princeton University Press

Vega-Redondo, F. (2003) *Economics and the Theory of Games*, Cambridge University Press.

Watson, J (2013) *Strategy*, WW Norton & Co

The following are more formal/advanced treatments:

Fudenberg, D. and J. Tirole (1991) *Game Theory*, MIT Press.

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

Myerson, R. (1991) *Game Theory: Analysis of Conflict*, Harvard University Press.

Osborne, M and A. Rubinstein (1994) *A Course in Game Theory*, MIT Press.