

16E032

## Industrial Organization

Term 3 – 6 ECTS

Elective Course

Prof. Sandro Shelegia

Prof. Christian Michel

Prof. Rosa Ferrer

### Prerequisites to Enroll

Students should be familiar with graduate microeconomics and statistics.

### Overview and Objectives

From its origins, Industrial organization (IO) primary focus has been the study of imperfect competition and the organization of markets. However, IO models and tools have also been used in a much wider range of topics such as Health Economics, Law & Economics, Finance, Economics of Innovation, etc. In particular, IO focuses on how firms and consumers behave in various market structures ranging from monopoly to different types of oligopoly. Therefore, IO is also closely related to Managerial Economics and Marketing.

The course is designed to familiarize students with classic as well as recent developments in IO. The first part focuses on the theory of IO predominantly using game theoretical tools. The second part covers empirical work in IO, which has grown exponentially in the recent decades thanks to the combination of modern econometric tools with serious economic theory models and the availability of consumer and firm level datasets.

A wide variety of students may be interested in the class. Students interested in strategic behavior and issues related to information will benefit. These skills are useful well outside IO, with recent uptake in Macro and International Trade where careful modeling of market imperfections as well as strategic consideration has become a norm. The empirical part introduces students to several estimation techniques and possible applications.

### Course Outline

First Part: Theory Taught by Sandro Shelegia

1. Monopoly
  - 1.1 Single- and multi-product pricing.
  - 1.2 Price discrimination.
2. Competition

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2.1 Homogeneous goods (Bertrand, Cournot, Kreps-Scheinkman).

2.2 Differentiated goods (Horizontal: Hotelling, Salop, Perloff-Salop, Vertical: pricing, quality choice).

3. Vertical relations

3.1 Double-marginalization.

3.2 Exclusive dealing.

4. Asymmetric information (optional)

4.1 Quality disclosure and certification.

4.2 Quality signaling.

Second Part: Empirical Industrial Organization and Applications

Taught by Rosa Ferrer, and Christian Michel.

1. Introductory application: Economics of Innovation

1.1. Theoretical predictions and reduced form analysis

1.2. Structural analysis

2. Marginal Cost and Measures of Market Power

3. Demand Estimation

3.1. Demand estimation in homogeneous products industries

3.1. Demand estimation in differentiated products industries: Logit, Nested Logit

3.2. Extensions of the standard demand model (dynamics and unobservable characteristics)

4. Estimation of Market Power

4.1. Conduct estimation in homogeneous products industries

4.2. BLP and marginal cost estimation

4.3. Instrumental variables in the context of empirical industrial organization

4.4. Estimation of markups and counterfactual policy simulations

4.5. Estimation of Industry Conduct in differentiated products industries

4.6. Alternative approaches for estimating market power

### Required Activities

Students will hand in 3-4 problem sets and write a final exam consisting of two parts. Problem sets count 30% of the grade, the exam counts 70%, each part splits equally between theory and empirics-applications.

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### Evaluation

Problem sets, 30%. Exam, 70%.

### Prerequisites to enroll

Game theory, Introduction to Microeconomics.

### Competences

- Capacity of utilization of theoretical instruments to analyze situations in coherent form.
- Ability to use the appropriate (statistical and numerical) techniques.
- Acquire a solid knowledge base for the study of quantitative issues.
- Ability to recognize and know how to use the principles of econometrics and statistics.
- Ability to work with microeconomic analysis tools and their empirical and theoretical applications.

### Learning Outcomes

- Students must be able to recognize theories and present arguments with precise examples.
- Students will have the ability to understand how markets work and explain their weaknesses.

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### Main textbooks

- Belleflamme, Paul, and Martin Peitz. "Industrial organization: markets and strategies," Cambridge University Press, 2015.
- Davis, Peter, and Eliana Garcés. Quantitative techniques for competition and antitrust analysis. Princeton University Press, 2009.
- Tirole, Jean. "The theory of industrial organization," MIT press, 1988.

### Other materials

- Andersen, de Palma and Thisse, "Discrete Choice Theory of Product Differentiation"
- Armstrong, Mark, and Robert H. Porter, eds. "Handbook of industrial organization," Vol. 3. Elsevier, 2007.

\*Leading academic articles on the topics covered in class such as:

- Berry, S., Levinsohn, J., & Pakes, A. (1995). Automobile prices in market equilibrium. *Econometrica: Journal of the Econometric Society*, 841-890.
- Wolinsky, A. (1986). True monopolistic competition as a result of imperfect information. *The Quarterly Journal of Economics*, 101(3), 493-511.