INDUSTRIAL ORGANIZATION
(module 36158)

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Year 2015-2016

Course description and objectives

The course deepens into some of the concepts and definitions introduced in microeconomics and game theory. More specifically, we study strategic interactions among firms in imperfectly competitive markets. The course begins with a review of the classical models of oligopoly and a brief introduction to solving multi-stage games (lessons 1 and 2). Once the necessary tools to follow the course, we proceed and introduce two fundamental topics in industrial organization: product differentiation (lessons 3 and 4) and multiproduction (lesson 5).

Then we examine questions related with cartels (lesson 6), vertical relations (lesson 7), mergers (lesson 8), innovation (lesson 9) and international oligopolies (lesson 10). A final lesson is devoted to study the strategic value of commitment – a tribute to last year's Nobel Award Jean Tirole. During the course an emphasis will be made on the use of analytical tools to real world cases. Theory and evidence will be confronted to discuss implications for competition policy and managerial strategies.

The course requires a good command of basic algebra (systems of linear equations) and basic calculus (unconstrained and constrained optimization analysis, equilibrium analysis and comparative statics analysis). Students should review the basic concepts learnt in the game theory course.
Upon completion of the course, students should be able i) to conceptualise the keys to the working of imperfectly competitive markets, ii) to assess the the determinants of agents' strategic behaviour, iii) to analyse firm behaviour anticipating the strategies of rivals, and iv) to apply solution concepts to particular market situations and evaluate their viability and efficiency. Students should understand the topics covered on several different levels: mathematical as well as graphical and heuristic or verbal. They should have a critical appreciation of the approach taken to economic issues and policies.

Structure of the course and course materials

The structure of the course consists of lectures (on Thursdays, room 310), classes (on Tuesdays, room 310), three problem sets assignments, and a final exam. Lectures will cover the presentation of the concepts, the theories and the modelling of non-competitive markets; exercises will be solved during classes.
Course materials (notes, slides, problem sets and assignments) are available at aula virtual.

The textbooks employed in this course are

Luis Cabral, *Introduction to Industrial Organization*. 2000. The MIT Press. [C]

George Norman, Dan Richards and Lynne Pepall. *Industrial Organization: Contemporary Theory and Empirical Applications*, 4th Edition. 2008. Wiley-Blackwell. [NPR]

Other textbooks that cover the material explained in the course are

Xavier Martínez-Giralt, *Organització industrial. Comportament estratègic i competencia*. 2006. Servei de Publicacions de la Universitat Autònoma de Barcelona. [XMG]
Julio Segura, *Teoría de la Economía Industrial*. 1993. Editorial Civitas. [S]

Grading

The plan is to spend one and a half lectures/classes per lesson. The deadlines for handing in the problem sets will be announced in due course.
The grade of the course will be divided into 30% for three problem set assignments, and 70% for the final written examination. Each part is graded over 10; it is compulsory to achieve a score of 5 in each part. These rules apply to any call.

Program

►LESSON 1. INTRODUCTION.

• What is Industrial Organization? • The firm • Game theory and strategy

XMG-1, C-1-3-4 , NPR-1-2-7, S-1

►LESSON 2. MONOPOLY AND OLIGOPOLY.

• Concentration and market power • Social cost of monopoly • Natural monopoly and regulation • Oligopoly models with homogeneous products: Bertrand, Cournot and Stackelberg

XMG-2-7, C-5-7-9, NPR-2-4-7-8, S-2-5

►LESSON 3. PRODUCT DIFFERENTIATION I.

• Consumer representative models • Cournot vs Bertrand • Monopolistic competition • Excess capacity

XMG-4, C-12-14, NPR-7-8, S-5-8

►LESSON 4. PRODUCT DIFFERENTIATION II.

• Horizontal differentiation: Hotelling's model • Vertical differentiation: product positioning • Natural oligopolies

XMG-4, C-12, NPR-7-8, S-8

►LESSON 5. MULTIPRODUCTION.

• Concepts and definitions: subadditivity and scope economies • Shaked and Sutton's model

XMG-7, C-2, NPR-3, S-2-3

►LESSON 6. CARTELS

• The incentives to cooperate • Stability in a static game with production quotas • Price leadership models

XMG- 5, C-8, NPR-10, S-6

►LESSON 7. VERTICAL RELATIONS MERGERS

• The successive monopoly • Externalities and distribution systems • Managerial incentives

XMG-7, C-11, NPR-12-13, S-9

►LESSON 8. MERGERS

• Concepts, nature and motives for merger • Horizontal and vertical mergers • Effects on social welfare • Competition policy towards mergers

XMG- 5, C-15, NPR-11-12, S-6

►LESSON 9. INNOVATION

• The incentive to innovate • The efficiency effect and the replacement effect • Patents: breadth and length • Compatibility, standards and network effects

C- 16-17, NPR-15-16-17

►LESSON 10. INTERNATIONAL OLIGOPOLIES.

• International trade in a model with imperfect competition • Trade liberalization: individual and social effects • Tariff policy and trade volumes • Strategic trade policy

NPR-18

►LESSON 11. A TRIBUTE TO JEAN TIROLE.

• Introduction • Strategic complements and substitutes: Cats, Dogs, and the Lean and Hungry Look. • Strategic commitments in: international markets, R&D investments and managerial incentives

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