UNIVERSITÀ DEGLI STUDI DI CAGLIARI

HR EXCELLENCE IN RESEARCH

Dipartimento di Scienze Economiche ed Aziendali
Direttore: Prof. Patrizio Monfardini
Dottorato in Scienze Economiche e Aziendali
Doctoral Program in Economics and Business
Coordinatrice: Prof.ssa Francesca Cabiddu

Industrial Organization in Digital Economics

Course leader: Elias Carroni

Aims of the course

This course aims to provide PhD students with the main theoretical and empirical tools used in Industrial Organization to analyze digital markets. The course introduces key frameworks such as asymmetric information, oligopoly with network goods, search models, and two-sided platforms, and discusses their application to digital environments.

By the end of the course, students will be familiar with the main economic mechanisms shaping competition, information, and market design in digital markets, as well as with selected empirical contributions from the recent literature.

Learning outcomes and competences

By the end of the course, students will be able to:

- Understand the main theoretical frameworks used in Industrial Organization to study digital markets.
- Analyze how network effects, information frictions, and platform interactions shape competition in digital environments.
- Apply models of search, asymmetric information, and two-sided markets to the study of online platforms and media markets.
- Critically evaluate selected empirical contributions in the literature on digital economics.
- Develop the ability to discuss and assess recent research in Industrial Organization and digital markets.

Pre-requisites

A solid background in microeconomic theory and basic game theory. Familiarity with industrial organization and applied microeconometrics is recommended.

Course contents and syllabus

The course introduces the main theoretical frameworks used in Industrial Organization to analyze digital markets. Topics covered include asymmetric information and strategic interaction, oligopoly with network goods, search and information frictions in markets, two-sided platforms, and media economics.

The course combines theoretical models with selected empirical contributions from the recent literature on digital markets.

Organization of the course

The course consists of **12 hours of lectures**, organized in four sessions of three hours each.

Lecture 1 – Asymmetric Information and Oligopoly with Network Goods Introduction to basic analytical tools used in Industrial Organization, including models of asymmetric information and strategic interaction. Oligopoly competition in markets with network effects and network goods.

Lecture 2 – Search and Information Frictions Search models and information frictions in markets. Comparison between traditional offline environments and online markets, with a focus on search costs, price dispersion, and consumer behavior.

Lecture 3– Two-Sided Markets and Platform Economics Economic analysis of platforms and two-sided markets. Indirect network effects, pricing strategies, and competition between platforms.

Lecture 4 – Media Economics Media markets and digital content platforms. Advertising markets, audience attention, and strategic interaction between platforms, advertisers, and consumers.

(note: it could be useful to create a specific folder for your course in the Teams class "PhD Programme in Economics and Business" where you can store the relevant course's material)

The relevant materials can be found in the *Teams class* "PhD Programme in Economics and Business" following this path: Documenti/General/Class Materials/[name of your course]. First year PhD students are made members by using their UniCa email account. Students can access the *Teams* application by using the same account.

The timetable of the course can be found in the Team class calendar.
(note: the course leaders or their delegates are responsible for booking the rooms for the course's lectures and filling in the timetable in the Teams class calendar)

Assessment method

Students are expected to actively participate in class discussions and to prepare a short written discussion of a research paper.

Reading list

Textbook

Belleflamme, P., and Peitz, M. (2021). *The Economics of Platforms: Concepts and Strategy*. Cambridge University Press.

Articles

Akerlof, G. (1970). *The Market for "Lemons": Quality Uncertainty and the Market Mechanism.* **Quarterly Journal of Economics.**

Diamond, P. (1971). *A Model of Price Adjustment.* **Journal of Economic Theory.**

Varian, H. (1980). *A Model of Sales.* **American Economic Review.**

Farrell, J., and Saloner, G. (1985). *Standardization, Compatibility, and Innovation.* **RAND Journal of Economics.**

Katz, M., and Shapiro, C. (1985). *Network Externalities, Competition, and Compatibility.* **American Economic Review.**

Anderson, S., and Renault, R. (1999). *Pricing, Product Diversity, and Search Costs.* **Review of Economic Studies.**

Rochet, J.-C., and Tirole, J. (2003). *Platform Competition in Two-Sided Markets.* **Journal of the European Economic Association.**

Anderson, S., and Coate, S. (2005). *Market Provision of Broadcasting.* **Review of Economic Studies.**

Armstrong, M. (2006). *Competition in Two-Sided Markets.* **RAND Journal of Economics.**

Armstrong, M., Vickers, J., and Zhou, J. (2009). *Prominence and Consumer Search.* **RAND Journal of Economics.**

Ellison, G., and Ellison, S. F. (2009). *Search, Obfuscation, and Price Elasticities on the Internet.* **Econometrica.**

Kamenica, E., and Gentzkow, M. (2011). *Bayesian Persuasion.* **American Economic Review.**

Lee, R. (2013). *Vertical Integration and Exclusivity in Platform and Two-Sided Markets.* **American Economic Review.**

Angelucci, C., and Cagé, J. (2019). *Newspapers in Times of Low Advertising Revenues.* **American Economic Journal: Microeconomics.**