Microeconomics II

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Course outline

The course provides an introduction to game theory and strategic thinking. Topic covered are: **1. Static games of complete information:** Main solution concepts. Existence theorem for a Nash equilibrium. Applications: models of imperfect competition. **2. Dynamic games of complete information:** Representation through extensive form and backward induction. Subgame perfection. Introduction to repeated games. Applications: bargaining models, repeated oligopoly. **3. Games of incomplete information:** Bayesian equilibria. Applications: first and second-price auctions, revenue equivalence. **4. Dynamic games with incomplete information:** Perfect Bayesian equilibria. Applications: A model of screening in the labor market, reputational bargaining, political reputation and diplomatic brinkmanship.

Learning goals

The course provides an introduction to formal game theoretic analysis of social interactions where interacting agents have conflicting interests. The goal is to familiarize the students with the basic solution concepts in game theory and how they can applied to analyzing different socio-economic interactions with a special focus on interactions where agents have asymmetric information. As applications, the course covers many important, and commonly used applied models of economic and political interactions ranging from models of oligopolistic competition and bargaining to labor market screening.

Textbooks

Most of the material in the course can be found in

R. Gibbons, *A Primer in Game Theory*, 1992, Pearson Education Limited.

The application on Auctions can be found in

V. Krishna, *Auction Theory*, 2009, Academic Press.

Some material for the applications on reputations and repeated interactions can be found in

G. J. Mailath and L. Samuelson, *Repeated Games and Reputations: long-run relationships*, 2006, Oxford University Press.

Alternative textbooks for the main part include:

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

R. B. Myerson, *Game Theory: Analysis of Conflict*, 1997, Harvard University Press.

A good source for additional problems and simple explanations of the basics can be found in: M. J. Osborne, *An Introduction to Game Theory*, 2004, Oxford University Press.

Lectures and practice sessions

The course consists of in-person classes and practice/tutoring sessions covering problem sets assigned over the course.

Assesment

Students will be graded based on their final exam score (70%) and their graded problem sets (30%). The final exam is composed of 2-3 questions that are similar to the questions assigned in the problem sets with a strong focus on applying content from the lectures. There will be 4-5 problem sets.