ECON-L2300 - Advanced Microeconomics 3: Game theory
Spring 2024
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Microeconomics 3 focuses on game theory and its application in microeconomic analysis. The students should become familiar with the central concepts of non-cooperative game theory, and they should learn how to apply those in microeconomic applications. After this course they should be able to read research articles that use game theory as the method of analysis.

The topics to be covered include:

- Strategic form games: pure and mixed strategies, dominant and dominated strategies, iterated strict dominance, rationalizable strategies, Nash equilibrium
- Extensive form games: behavior strategies, sequential rationality, backward induction, sub-game perfect equilibrium, sequential equilibrium
- Dynamic games of complete information: bargaining games, repeated games
- Games of incomplete information: Bayesian Nash equilibrium, perfect Bayesian equilibrium

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TA
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Lectures and study material:

The course consists of 24 lecture hours. The time schedule is posted on the course web page.

As the main text for the course one can use:

- Mas-Colell, Whinston and Green: "Microeconomic Theory", Oxford University Press (MWG) and/or
- Mailath "Modeling Strategic Behavior: A Graduate Approach to Game Theory and Mechanism Design", World Scientific Publishing, available free here: https://web.sas.upenn.edu/gmailath/books/modeling-strategic-behavior/

These sources cover most of the material of the lectures. However, there are many excellent specialized books that can be helpful as supplementary material:

- Fudenberg and Tirole: "Game Theory", MIT Press.
- Osborne and Rubinstein: "A Course in Game Theory", MIT Press.
- Myerson: "Game Theory. Analysis of Conflict", Harvard University Press.
- Maschler, Solan, and Zamir: "Game Theory", Cambridge University Press.

I will post lecture notes on the course web-site as the course proceeds. These will give a good idea about the contents of the lectures, but they will not be self-contained: proofs, illustrations, further discussions, etc. will be done in the class. The lecture notes will also point out the relevant parts in the other study materials where one can study the topics further.

Graded work:

The grading will be based on two components:

1. **Exam (70% of the grade):**

The final exam will be on 4.3. at 10:00 – 12:00 (Re-take exam on 26.4. at 12:00 – 14:00)

2. **Assignments (30% of the grade):**

There are 4 problem sets, one for each exercise session of the course. The students are expected to work out solutions to the problems and return to the return box before the corresponding session.

For passing the course, 50% of the points are required. There are no separate point thresholds for the exam or the assignments. This means that it is possible to pass the course doing only the exam, but the maximal number of points is then only 70/100.