Microeconomics 3: Game Theory
FDPE Spring 2021
Daniel Hauser

Microeconomics 3 focuses on game theory and its applications 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 strategies, iterated dominance, rationalizability, Nash equilibrium
- Extensive form games: Behavior strategies, backwards induction, one-shot deviation principal, subgame perfection, sequential rationality
- Dynamic games of complete information: Bargaining, repeated games
- Games of incomplete information: Bayesian Nash equilibrium, Perfect Bayesian equilibrium, Sequential equilibrium

Instructor
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TA
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Lectures and study material:

This course consists of three parts:
- Pre-recorded lectures: Posted Mondays
- Recitations: Mikael reviews that week's problem set.
- "In class" exercises: Friday from 10-12 on Zoom

As the main text for the course one can use:

- Mailath "Modeling Strategic Behavior: A Graduate Approach to Game Theory and Mechanism Design", World Scientific Publishing, available free here

This book covers much of the material of the lectures. However, there are many more specialized books that can be very 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 the slides from the videos on mycourses as the course proceeds. These will give a good idea about the contents of the lectures, but they will not be self-contained. **No live sessions will be recorded**

Graded Work:

Assignments (40% of grade)

There are two types of assignments

4 Problem sets (each worth 15 points)
There are two types of assignments for this course. There are four problem sets, due in recitation.

6 Exercises (each worth 5 points)
In addition, each Friday at 10am I'll post a brief exercise that covers material from the lectures posted the Monday of the previous week. This is due at 11am that Friday, when we will start discussing the exercise. Starting at 10am, I'll be on zoom to answer any questions.

These will be graded "for completion," if you submit something that shows you attempted to solve the problem, you get full credit. You may work in and submit solutions as a group of up to 5, and you are free to discuss these problems with anyone in the course.
A completely correct solution is worth 1 bonus point.

Exam (60% of grade)
The final exam will be 4 hours, run through Mycourses. It's an open book exam. Please work on it independently.