

Microeconomics 3: Game Theory

FDPE Spring 2022

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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Office Hours: Thursday 12-2pm

Lectures and study material:

This course consists of three parts:

- Pre-recorded lectures
- Recitations
- In class session

In light of the ongoing pandemic, lectures will be asynchronous and distributed through Mycourses. Each week we will have two live, online sessions. In the first session, we'll work through problems together. In the second, there will be a "quiz", after which we'll discuss the solutions. Group work is encouraged in both sessions. Written solutions will not be posted for either of these sessions. In recitations, Eero will review selected questions from previous years problem sets (posted on mycourses).

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

Graded Work:

Assignments (40% of grade)

6 Exercises (each worth 20 points)

At the start of class on Friday I'll pass a brief exercise that covers material from the lectures for the week Monday of the previous week. This is due at 11am that Friday, when we will start discussing the exercise. 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.

Exam (60% of grade)

The final exam will be 4 hours, closed book, and in person.