
Microeconomic Theory (II)

Wei James Chen

2026 Spring Fri. 345

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Course Web: [NTU COOL](#)

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Classroom: AgEcon 3

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Course Description

This course offers an introduction to noncooperative game theory. The course is intended both for graduate students who wish to develop a solid background in game theory in order to pursue research in the applied fields of economics and related disciplines, and for undergraduate students wishing to specialize in economic theory. Meanwhile, we will also extend the discussion to auction theory and basic mechanism design.

Course Objective

This course aims to enable students to:

- Become familiar with various types of game theory models.
- Use game theory to analyze economic issues.
- Analyze agent decisions using a formal theoretical framework.
- Enhance the rigor of decision-making and avoid logical fallacies through mathematical analysis.
- Understand the fundamental theories and applications of auction theory and mechanism design.

Prerequisites

- Microeconomics
- Microeconomic Theory (I)
- Calculus
- Statistics

Expected weekly study hours before and/or after class

Before the class: 2 – 3 hours

After the class: 6 – 7 hours

Office Hours

Fri. 13:20 –14:20 (By appointment only)

Textbooks

Strategy: An Introduction to Game Theory, 3rd Edition by J. Watson (華泰文化代理)

Reading Materials

Auction Theory, 2nd Edition by V. Krishna – Chapter 2,3 and 5.

Grading Policy

- 30% Assignments
- 35% Midterm
- 35% Final
- 10% Group Presentation (Optional)

Note:

- If your final-exam grade is higher than your midterm grade, then the final will count for 70% of your course grade and the midterm will count for 0%.
- 4 volunteer groups present [Barrett \(1994\)](#); [Latacz-Lohmann and Van Der Hamsvoort \(1997\)](#); [Cason, Gangadharan and Duke \(2003\)](#) and [Houba and Tomori \(2023\)](#), 35 mins each.

Course Videos

- Past lectures in Chinese (WJC)
 - [Course Videos](#)
- English lecture videos from Prof. Selcuk Ozyurt (SO)
 - [Game Theory 1: Introduction to Game Theory](#)
 - [Game Theory 2: Basic Solution Concepts and Applications](#)
 - [Game Theory 3: Nash Equilibrium](#)
 - [Game Theory 4: Mixed Strategy Nash Equilibrium](#)
 - [Game Theory 6: Extensive Form Games with Perfect Information](#)
 - [Game Theory 7: Extensive Form Games with Imperfect Information](#)
 - [Game Theory 9: Bayesian Nash Equilibrium](#)
 - [Advanced Game Theory 10: Auction Theory](#)
 - [Advanced Game Theory 11: Mechanism Design](#)

Course Schedule

Week	Date	Topic
Week 1	2/27	(No Class) National Holiday
Week 2	3/6	About this Class Extensive Form (SO 1-1,2,3)
Week 3	3/13	Strategies and the Normal Form (SO 1-4, 5, 6) Beliefs, Mixed Strategies, and Expected Payoffs (SO 1-10, 11)
Week 4	3/20	Dominance and Best Response (SO 1-13 & 2-1, 2, 3, 7 & WJC 6-3 21:57 to 32:59)
Week 5	3/27	Rationalizability and Iterated Dominance (SO 2-8, 9, 10) Nash Equilibrium (SO 3-1, 2, 3, 4, 5, 6, 7 & WJC 9-2 22:23 to 43:34)
Week 6	4/3	(No Class) National Holiday
Week 7	4/10	Midterm
Week 8	4/17	Mixed-Strategy Nash Equilibrium (SO 4-1, 2, 3, 4, 5, 6)
Week 9	4/24	Details of the Extensive Form (SO 6-1,2,3) Sequential Rationality and Subgame Perfection (SO 6-4,5,6,10 & 7-1,2,3)
Week 10	5/1	(No Class) National Holiday
Week 11	5/8	Random Events and Incomplete Information Bayesian Nash Equilibrium and Rationalizability (SO 9-1,2,3,4,5)
Week 12	5/15	General Auction (SO A10-1,2,3,4,5,6,7, WJC GA-1 , WJC GA-2)
Week 13	5/22	General Auction (SO A10-8,9,10,11, WJC GA-3 , WJC GA-4) Mechanism Design (SO A11-1,2,3,4, WJC MD-1 , WJC MD-2)
Week 14	5/29	Mechanism Design (SO A11-6,7,8,12,13,14, WJC MD-3)
Week 15	6/5	Group Presentation
Week 16	6/12	Final

References

- Barrett, Scott.** 1994. "Self-Enforcing International Environmental Agreements." *Oxford Economic Papers*, 46(Supplement_1): 878–894.
- Cason, Timothy N., Lata Gangadharan, and Charlotte Duke.** 2003. "A laboratory study of auctions for reducing non-point source pollution." *Journal of Environmental Economics and Management*, 46(3): 446–471.
- Houba, Harold, and Françeska Tomori.** 2023. "Stackelberg Social Equilibrium in Water Markets." *Games*, 14(4): 54.
- Latacz-Lohmann, Uwe, and Carel Van Der Hamsvoort.** 1997. "Auctioning Conservation Contracts: A Theoretical Analysis and an Application." *American Journal of Agricultural Economics*, 79(2): 407–418.