
應用賽局理論

陳暉 (Wei James Chen)

2022.9

E-mail: jamesweichen@ntu.edu.tw 課程網站 (Web): [NTU COOL](#)

辦公室 (Office): 農業綜合館 216 室 教室 (Classroom): 綜合大講堂

課程概述 (Course Description)

This is an introductory course to game theory. I will discuss what game theory is and isn't, and why we need to understand formal theory even in the era of big data. I will cover the fundamental concepts of game theory, including Nash Equilibrium in pure and mixed strategies, Subgame Perfect Nash Equilibrium, Bayesian Nash Equilibrium, Perfect Bayesian Nash Equilibrium, information asymmetry, signaling games and reputation. We will discuss applications of game theory in many fields throughout the semester. Student will learn to read formal notations and solve simple games.

課程目標 (Course Objective)

本門課旨在讓學生能夠:

- 熟悉各種類型的賽局理論模型
- 運用賽局理論分析經濟議題
- 以形式理論架構分析行為者決策
- 運用數理分析提升決策的嚴謹程度、避免邏輯盲點

課程要求 (Prerequisites)

- 個體經濟學 (建議, 非必要)
- 微積分 (建議, 非必要)

Office Hours

週一 11:00 – 13:00 (採預約制)

參考書目 (Textbooks)

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

指定閱讀 (Reading Materials)

尚無。

評量方式 (Grading Policy)

分數比例如下：

- 10% 課程參與
- 30% 作業
- 30% 期中考
- 30% 期末考

如果期末考考得比期中考高，期末考分數就會取代期中考。學期末會再依據全班表現調分。

課程進度 (Schedule)

第 1 週	9/5	About this Class
	9/9	中秋節停課
第 2 週	9/12	Introduction
	9/16	The Extensive Form
第 3 週	9/19	Strategies and the Normal Form
	9/23	Beliefs, Mixed Strategies, and Expected Payoffs
第 4 週	9/26	General Assumptions and Methodology
	9/30	Dominance and Best Response
第 5 週	10/3	Dominance and Best Response
	10/7	Rationalizability and Iterated Dominance
第 6 週	10/10	國慶日停課
	10/14	Nash Equilibrium
第 7 週	10/17	Mixed-Strategy Nash Equilibrium
	10/21	Mixed-Strategy Nash Equilibrium
第 8 週	10/24	Midterm Review
	10/28	期中考
第 9 週	10/31	Details of the Extensive Form
	11/4	Sequential Rationality and Subgame Perfection
第 10 週	11/7	Oligopoly, Tariffs, Crime, and Voting
	11/11	Topics in Industrial Organization
第 11 週	11/14	Repeated Games and Reputation
	11/18	Collusion, Trade Agreements, and Goodwill
第 12 週	11/21	Random Events and Incomplete Information
	11/25	運動會停課
第 13 週	11/28	Risk and Incentives in Contracting
	12/2	Bayesian Nash Equilibrium and Rationalizability
第 14 週	12/5	Lemons, Auctions, and Information Aggregation
	12/9	Lemons, Auctions, and Information Aggregation
第 15 週	12/12	Perfect Bayesian Equilibrium
	12/16	Perfect Bayesian Equilibrium
第 16 週	12/19	Final Review
	12/23	期末考
