

Course Outline

EE415 GAME THEORY

Semester 2/2024

Class Time and Logistic

Class day: Wednesday

Class time: 13.00 – 16.00

Venue: Room 201

Teaching Materials Platform: Google classroom using code x4joyc3

<https://classroom.google.com/c/NzQ2MDM5MTIzNzg1?cjc=x4joyc3>

Instructor:

Name: Asst. Prof. Dr. Pornthep Benyaapikul

Office Hours: Monday, 13.30 – 14.30 or By Appointment

Email: pornthep@econ.tu.ac.th

Course Description

The application of game theory under complete and incomplete information including strategic games, Nash Equilibrium; Mixed-Strategies Equilibrium; Extensive games; Subgame perfect equilibrium; Bayesian game; Extensive game of incomplete information; other applications of game theory.

Prerequisites: EE311 and EE320 (or EE421)

Course Objective:

1. To equip students with essential mathematical concepts and tools in studying economics
2. To expose students to the application of mathematical concepts in analysing economic problems.

Expected Learning Outcomes

CLOs	PLOs	Activities	Assessment
CLO1 Demonstrate a thorough understanding of key concepts in game theory, including Nash equilibrium, dominant strategies, and mixed strategies.	K1 S1 E1 C1,C2	- Lectures - Class Assignment	Midterm Exam 30% Final Exam 40% Class Assignment 30%
CLO2 Analyze strategic interactions in various economic, political, and social settings using formal game-theoretic models.	K1 S1 E1 C1, C2	- Lectures - Class Assignment	Midterm Exam 30% Final Exam 40% Class Assignment 30%
CLO3: Evaluate the implications of strategic behavior on policy design and economic outcomes.	K1 S1 E1	- Lectures - Class Assignment	Midterm Exam 30% Final Exam 40% Class Assignment 30%
CLO4: Develop critical thinking skills by identifying assumptions, limitations, and alternative approaches within game-theoretic models.	K1 S1 E1 C1, C2	- Lectures - Class Assignment	Midterm Exam 30% Final Exam 40% Class Assignment 30%

Evaluation

Midterm Exam	30%
Final Exam	40%
Class Assignment	30%

Main Text

1. Avinash Dixit, Susan Skeath and David McAdams. (2021) Games of Strategy, 5th edition, W.W. Norton & Company. (ASD)
2. Joel Watson (2013) Strategy: An Introduction to Game Theory, 3rd edition, W.W. Norton & Company. (W)
2. Prajit K. Dutta (1999) Strategis and Games : Theory and Practice, 1st edition, MIT Press (PD)

Week	Date	Course Content	Reading References
1	Jan 22	Introduction Math reviews	ASM Ch 1-2
2	Jan 29	Micro Issues and Solution Concept	ASM Ch 1-2
3	Feb 5	Sequential Move Game	ASM Ch 3

Week	Date	Course Content	Reading References	
4	Feb 12	Public Holiday No Class		
5	Feb 19	Simultaneous Move Game	ASM Ch4-5	
6	Feb 26	Coordination Games & Multiple Equilibria	ASM Ch4.7, 5.3	
7	Mar 5	Mixed Strategy	ASM Ch7	
8	Mar 12	Midterm Exam	Time: 12.00-14.00	Venue: Faculty of Economics, Thammasat University
9	Mar 19	Repeated Game	ASM Ch 10	
10	Mar 26	Subgame and Subgame Perfection	ASM Ch 6	
11	Apr 2	Application: Threat and Commitment	ASM Ch 8	
12	Apr 9	Games with Incomplete Information and Bayes-Nash Equilibrium	ASM Ch 9	
13	Apr 16	Songkran Holiday No Class		
14	Apr 23	Games with Incomplete Information and Bayes-Nash Equilibrium		
15	Apr 30	Perfect Bayesian Equilibrium	W Ch.28	
16	May 7	Signaling Games and The Lemons Problem	W Ch 29	
16	May 14	Other Applications and Review Session		
17	May 24	Final Exam	Time 9.00-12.00	Venue Faculty of Economics, Thammasat University