Syllabus 2018 System Information Sciences

Game Theory for Applied Economics

Japanese

Basic information

held this year:	yes
instructor(s)	Prof.Dao-zhi Zeng
room	GSIS-Mid Lecture Room 207
schedule	The first half year (Tuesday) 8:50-10:20
begins on:	04/10

Objectives and outline

Game theory studies how several intelligent and rational individuals make their decisions. In this lectrure, students will mainly learn the noncooperative game theory, which considers the case that different players have conflicting interests and they interact with each other. I will introduce the concepts of matrix game, extensive game, repeated game, Nash equilibrium, Subgame perfect equilibrium, Nash bargaining solution. Some applications in economics will be illustrated for students to deepen understanding of the essence.

Some specific aims
1. To be able to analyze the decision making of several individuals.
2. To be able to apply various equilibrium concepts.

Basically, the lectures are prepared in Japanese.

Class plan

1. Introduction
2. Matrix game
3. Equilibrium existence
4. Application
5. Stackelberg duopoly model
6. Repeated game
7. Extensive game
8. Subgame perfect Nash equilibrium
9. Bayesian Nash equilibrium
10. Double auction
11. Signaling game
12: Nash bargaining game
13: Cooperative game
14. Incomplete contract theory
15: Summation and examination

Evaluation

Students are evaluated on their homeworks (30%), the level of class participation, and the final examination.

Textbook(s)

Robert Gibbons, 1992. Game Theory for Applied Economists, Princeton University Press.

Web site

Lecture slides are available at
http://www.se.is.tohoku.ac.jp/~zeng/index.html

Office hours

Wednesday 16:30-18:00 or by appointment.

Other information

1. Students are required to prepare according to the lecture slides for each class. 2. Homeworks are used to review the lectures.

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