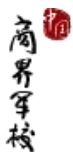




PHBS

北京大学汇丰商学院



Course Code Game Theory Module 3, 2023-2024

Course Information

Instructor: Chen Lyu

Office: PHBS Building, Room 751

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Email: clyu@phbs.pku.edu.cn

Office Hour: TBA

Classes:

Lectures: Mon & Thu, 13:30-15:20

Venue: PHBS Building, Room TBA

Course Website:

TBA

1. Course Description

1.1 Context

Course overview: Game theory studies strategic interplays among multiple agents. It is the basic tool for analyzing real-world problems involving more than one decision makers, and is the foundation for modern economic theories of many different topics including industrial organization, corporate finance, political economics, etc. In this course, we will cover major analytical frameworks and concepts in game theory. Important examples with practical implications will be emphasized.

1.2 Textbooks and Reading Materials

Main reference:

My slides or lecture notes

Other reference:

Lecture notes by William Sandholm (available at <https://users.ssc.wisc.edu/~whs/gtie.pdf>)

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	Objectives	Assessment (YES with details or NO)
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	No
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	No
2. Our graduates will be skilled in team work and leadership.	2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.	No

	2.2. Students will be able to apply leadership theories and related skills.	No
3. Our graduates will be trained in ethics.	3.1. In a case setting, students will use appropriate techniques to analyse business problems and identify the ethical aspects, provide a solution and defend it.	No
	3.2. Our students will practice ethics in the duration of the program.	No
4. Our graduates will have a global perspective.	4.1. Students will have an international exposure.	No
5. Our graduates will be skilled in problem-solving and critical thinking.	5.1. Our students will have a good understanding of fundamental theories in their fields.	Yes (The course covers fundamental theories of Game Theory.)
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	Yes (Game Theory can be applied to many practical problems in strategic and competitive situations, which they will commonly encounter in business settings.)
	5.3. Our students will demonstrate competency in critical thinking.	Yes (critical thinking is important if one wants to apply theories to the real-world situations.)

2.2 Course specific objectives

The main objectives of the course are to provide students with solid analytical frameworks for understanding strategic interplays among agents, and let them link the theories to practice.

2.3 Assessment/Grading Details

Grading is based on the following:

- 1) Midterm Exam (40%)
- 2) Final Exam (40%)
- 3) Class Participation (20%)

Note: Students must follow the class attendance policies of the school. Violations may cause consequences that I'm not able to waive. In particular, being absent for more than 30% of the classes will lead to failure of the course.

2.4 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

3. Topics, Teaching and Assessment Schedule (Tentative)

Topic	Sub-topic	Classes
Decision under uncertainty		1
Analyses based on the normal form of a game	Dominance and iterated dominance	2
	Nash equilibrium	3
	More examples and exercises	4
Analyses based on the extensive form of a game	Game tree and the idea of sequential rationality	5
	Games with perfect information and SPE	6
	Games with imperfect information and weak-sequential equilibrium	7
	Games with imperfect information and sequential equilibrium	8
	More examples and exercises	9
Midterm		10
Games with asymmetric information	Adverse selection	11
	Signaling	12-13
	Contracting with moral hazard	14
	More examples and exercises	15
Repeated game	Repeated prisoner's dilemma	16

Special topics (optional)	Population game, evolutionary game theory, experiments in game theory, etc	17
Final review		18
Final exam		Apr 21st

4. Miscellaneous