

**THE UNIVERSITY OF HONG KONG  
HKU Business School**

**ECON2214-1A Games and Decisions  
Semester 1, 2021-2022**

**GENERAL INFORMATION**

Instructor: Stephen Ching  
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Office: KK1013  
Phone: +852 28578504  
Consultation:  
Semester 1, 4:30-5:20pm (Tuesday) and 1:30-2:20pm (Friday)

Lecture:  
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Consultation: TBA

Pre-requisites: ECON1001/1210 Introductory Microeconomics  
Mutually exclusive: STRA3709 Applications of Strategic Thinking in Business

Course Website: <https://moodle.hku.hk/course/view.php?id=86361>

**COURSE DESCRIPTION**

The first part of the course starts with sequential games and introduces the concept of subgame perfect equilibrium for solving sequential games. Then it introduces Nash equilibria through a series of concepts: dominant strategy, successive elimination of dominated strategies, and the minimax approach for simultaneous games. It also discusses the limitations of Nash equilibria and offers rationalizability as an alternative equilibrium concept. This forms the basic theory of the course, which is used to analyze repeated games and collective-action games in the second part of the course. Additionally, new solution (evolutionary stability) and equilibrium concept (perfect Bayesian equilibrium) are introduced to deal with applications that involve imperfect rationality or imperfect information. Mechanism/auction design are potential optional topics of the course.

**COURSE OBJECTIVES**

1. To introduce game theory at the undergraduate level
2. To help students appreciate how various equilibrium concepts in game theory are related
3. To illustrate how to apply game theory in different contexts

**FACULTY LEARNING GOALS (FLGs)**

**FLG1:** Acquisition and internalization of knowledge of the programme discipline

**FLG2:** Application and integration of knowledge

**FLG3:** Inculcating professionalism

**FLG4:** Developing global outlook

**FLG5:** Mastering communication skills

**FLG6:** Cultivating leadership

**COURSE LEARNING OUTCOMES**

Course Learning Outcomes	Aligned Faculty Goals*
CLO1. Formulate strategic problems as sequential and/or simultaneous games	Goal 1, 2

CLO2. Understand various equilibrium concepts in game theory and how they are related	Goal 2
CLO3. Apply game theory in specific contexts	Goal 2, 3, 6

\* Faculty Goal 1: Acquisition and internalization of knowledge of the programme discipline; Goal 2: Application and Integration of knowledge; Goal 3: Inculcating professionalism and leadership

COURSE TEACHING AND LEARNING ACTIVITIES			
Course Teaching and Learning Activities		Expected contact hour	Study Load (% of study)
T&L1. Lecture		36 hours	30%
T&L2. Tutorial		12 hours	10%
T&L3. Coursework		48 hours	40%
T&L4. Self study		24 hours	20%
Total		120 hours	100%
Assessment Methods	Brief Description	Weight	Aligned Course Learning Outcomes
A1. Tutorial Assignments	Consolidate your knowledge in tutorials; complete and submit <b>five</b> tutorial assignments to keep up with the progress of the course	25%	CLO1, CLO2
A2. Essays	Write three essays to demonstrate your understanding of specific topics covered in this course ( <b>students who submit less than two essays will receive an F grade in the course</b> )	30%	CLO1, CLO2, CLO3
A3. Individual Term Paper	Come up with your own topic and write an application of game theory covered in the course ( <b>students who do not submit the term paper will receive an F grade in the course</b> )	45%	CLO1, CLO2, CLO3
Total		100%	

STANDARDS FOR ASSESSMENT	
Course Grade Descriptors	
A+, A, A-	Strong evidence of superb ability to fulfill the intended learning outcomes of the course at all levels of learning: describe, apply, evaluate, and synthesize
B+, B, B-	Strong evidence of the ability to fulfill the intended learning outcomes of the course at all levels of learning: describe, apply, evaluate, and synthesize
C+, C, C-	Evidence of adequate ability to fulfill the intended learning outcomes of the course at low levels of learning such as describe and apply but not at high levels of learning such as evaluate, and synthesize
D+, D	Evidence of basic familiarity with the subject
F	Little evidence of basic familiarity with the subject
<b>Assessment Rubrics</b> for Assignments, Essays, and Individual Term Paper, and Final Examination are the same as in the Course Grade Descriptors.	

<b>COURSE CONTENT AND TENTATIVE TEACHING SCHEDULE</b>		
<b>Week</b>	<b>Course Content</b>	<b>Textbook</b>
<b>Part I Basic Theory</b>		
1	Sequential Games	Chapter 3
2-3	Simultaneous Games: Pure Strategies	Chapters 4, 5
4-5	Simultaneous Games: Mixed Strategies	Chapter 7
6	Sequential-Simultaneous Games	Chapter 6
Reading Week		
<b>Part II Extensions</b>		
7	Prisoners' Dilemma and Repeated Games	Chapter 10
8	Collective Actions	Chapter 11
9	Evolutionary Games	Chapter 12
10	Uncertainty and Information	Chapter 9
11-12	Mechanism/Auction Design	Chapter 14/15
<b>Textbook</b>		
Avinash Dixit, Susan Skeath, and David McAdams, Games of Strategy, Fifth Edition, 2021		

<b>MEANS/PROCESSES FOR STUDENT FEEDBACK ON COURSE</b>
<ol style="list-style-type: none"> <li>1. Direct response via lectures, tutorials, and consultation</li> <li>2. Online response via email and Moodle site</li> </ol>

**COURSE POLICY** (e.g. plagiarism, academic honesty, attendance, etc.)

The University Regulations on academic dishonesty will be strictly enforced! Please check the University Statement on plagiarism on the web: <http://www.hku.hk/plagiarism/>.

Academic dishonesty is behavior in which a deliberately fraudulent misrepresentation is employed in an attempt to gain undeserved intellectual credit, either for oneself or for another. It includes, but is not necessarily limited to, the following types of cases:

a. Plagiarism - The representation of someone else's ideas as if they are one's own. Where the arguments, data, designs, etc., of someone else are being used in a paper, report, oral presentation, or similar academic project, this fact must be made explicitly clear by citing the appropriate references. The references must fully indicate the extent to which any parts of the project are not one's own work. Paraphrasing of someone else's ideas is still using someone else's ideas, and must be **acknowledged**.

b. Unauthorized Collaboration on Out-of-Class Projects - The representation of work as solely one's own when in fact it is the result of a joint effort. Where a candidate for a degree or other award uses the work of another person or persons without due acknowledgement.

1. The relevant Board of Examiners may impose a penalty in relation to the seriousness of the offence.
2. The relevant Board of Examiners may report the candidate to the Senate, where there is *prima facie* evidence of an intention to deceive and where sanctions beyond those in (1) might be invoked.