

**City University of Hong Kong**  
**Course Syllabus**

**offered by Department of Economics and Finance**  
**with effect from Semester B 2019/2020**

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**Part I Course Overview**

**Course Title:** Economic Strategy and Game Theory

**Course Code:** EF 4484

**Course Duration:** 1 Semester

**Credit Units:** 3

**Level:** B4

**Proposed Area:**  Arts and Humanities  
*(for GE courses only)*  Study of Societies, Social and Business Organisations  
 Science and Technology

**Medium of Instruction:** English

**Medium of Assessment:** English

**Prerequisites:** Nil  
*(Course Code and Title)*

**Precursors:** Either one of the following  
*(Course Code and Title)* **EF3440 Microeconomics for Business Strategy**  
**EF3442 Intermediate Microeconomics**

**Equivalent Courses:** Nil  
*(Course Code and Title)*

**Exclusive Courses:** Nil  
*(Course Code and Title)*

## Part II Course Details

### 1. Abstract

This course is an introduction to game theory and strategic thinking. Ideas such as dominance, backward induction, Nash equilibrium, commitment, credibility, adverse selection, moral hazard and signalling are discussed and applied to games played in class and to real life examples drawn from economics, politics, sports and elsewhere.

The course also encourages discovery learning, which takes place when students use their knowledge and skills in game theory to discover solutions to problems in business and life.

### 2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs <sup>#</sup>	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Identify the core concepts, models and methodologies of game theory		√	√	
2.	Apply game theoretic tools to analyse market structure, competition, firm decisions and industry dynamics		√	√	
3	Apply game theoretic tools and strategic decision making to real life business situations				√

\* If weighting is assigned to CILOs, they should add up to 100%.

100%

<sup>#</sup> Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

### 3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.			Hours/week (if applicable)
		1	2	3	
Seminars	The seminars introduce fundamental concepts in game theory to students and encourage them to think critically and logically, with the goal to guide students to develop their ability to solve new problems of economic strategy by themselves.	√	√	√	3 hours/week
Discussion of Case Studies	Business case studies will be discussed in the lectures. Students will be encouraged to apply the various economic principles and basic theories of game theory to analyse specific industry problems and business practices.		√	√	incorporated in lectures

### 4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.			Weighting*	Remarks
	1	2	3		
Continuous Assessment: 50%					
Assignments	√	√	√	20%	
Assignments will allow the students to have in depth study of the material throughout the term. Assignments will consist of declared problems that students must solve independently					
Midterm Examination	√	√	√	30	
Students will be examined on the material studied up to that point in time.					
Examination: 50% (duration: 3 hours, if applicable)					
Final examination	√	√	√	50%	
Students will be assessed via the examination their understanding of concepts learned in class, textbooks, reading materials and their ability to apply subject related knowledge.					
				100%	

\* The weightings should add up to 100%.

**Students are required to pass both coursework and examination components in order to pass the course.**

## 5. Assessment Rubrics

*(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)*

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Final Examination	<b>Nil</b>	Strong evidence of superior grasp of subject matter and knowledge base.	Sufficient evidence of superior grasp of subject matter and knowledge base.	Some evidence of superior grasp of subject matter and knowledge base.	Marginal evidence of superior grasp of subject matter and knowledge base.	Little or no evidence of superior grasp of subject matter and knowledge base.
Midterm Examination	<b>Nil</b>	Strong evidence of original thinking; capacity to analyse and synthesize	Sufficient evidence of original thinking; capacity to analyse and synthesize  Sufficient evidence of original thinking; capacity to analyse and synthesize	Some evidence of original thinking; capacity to analyse and synthesize  Some evidence of original thinking; capacity to analyse and synthesize	Marginal evidence of original thinking; capacity to analyse and synthesize  Marginal evidence of original thinking; capacity to analyse and synthesize	Little or no evidence of original thinking; capacity to analyse and synthesize  Little or no evidence of original thinking; capacity to analyse and synthesize
Assignments	<b>Nil</b>	Strong evidence of original thinking; capacity to analyse and synthesize	Sufficient evidence of original thinking; capacity to analyse and synthesize	Some evidence of original thinking; capacity to analyse and synthesize	Marginal evidence of original thinking; capacity to analyse and synthesize	Little or no evidence of original thinking; capacity to analyse and synthesize

**Part III Other Information** (more details can be provided separately in the teaching plan)

**1. Keyword Syllabus**

Part I. Methodology

1. Static Games of Complete Information
2. Dynamic Games of Complete Information
3. Static Games of Incomplete Information
4. Dynamic Games of Incomplete Information

Part II. Applications

1. Sequential Bargaining
2. Price War
3. Cooperation and Defection
4. Harvard Business School Case Studies

**2. Reading List**

**2.1 Compulsory Readings**

*(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)*

1.	Harvard Business School Case Studies
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**2.2 Additional Readings**

*(Additional references for students to learn to expand their knowledge about the subject.)*

1.	Dixit, A.K and B.J. Nalebuff, 2008, <u>The Art of Strategy: A Game Theorist’s Guide to Success in Business and Life</u> . W.W.Norton
2.	J.Watson. 2002. <u>Strategy: An Introduction to Game Theory</u> . W.W.Norton.
3.	Avinash Dixit and Susan Skeath, <u>Games of Strategy</u> , W.W. Norton, current edition.
4.	Robert Gibbon, <u>Game Theory for Applied Economists</u> , Princeton University Press, current edition.
5.	Martin Osborne and Ariel Rubinstein, <u>A Course in Game Theory</u> , MIT Press, current edition.
6.	David Besanko, David Dranove, Mark Shanley and Scott Schaefer, 2003, <u>The Economics of Strategy</u> , New York: Wiley, Latest edition.