City University of Hong Kong
Course Syllabus

offered by Department of Economics and Finance
with effect from Semester A 2015 / 16

Part I   Course Overview

Course Title: **Topics in Microeconomics**

Course Code: **EF5407**

Course Duration: **1 semester (39 hours)**

Credit Units: **3**

Level: **P5**

Medium of Instruction: **English**

Medium of Assessment: **English**

Prerequisites: **EF5471 Advanced Microeconomics**
(Course Code and Title)

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

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

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

Part II   Course Details

1.   Abstract

This course covers fundamental tools of game theory, information economics and mechanism design, and provides students with solid skills to analyse strategic situations. Concepts such as dominance, rationality, backward induction, Nash equilibrium, subgame perfection, commitment, credibility, adverse selection, moral hazard and signalling will be discussed and applied to economic models, business cases and real-life examples drawn from economics, business, 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	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	think strategically;		✓	✓	
2.	understand basic concepts in game theory, information economics and mechanism design;		✓	✓	
3.	apply tools in game-theoretic analysis to identify the "equilibrium" situations, i.e. strategies that are mutual best responses for the players, in various types of games with different temporal and information structures;		✓		✓
4.	formalize real-life social, economic and business situations as well as research questions related to economics, finance and business strategy, into game-theoretic models in order to explain observed strategic behaviours and/or recommend strategies.		✓		✓
		100%			

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. 1	2	3	4	Hours/week (if applicable)
Lectures	The lectures introduce fundamental concepts in game theory, information economics and mechanism design 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.	√	√	√	√	
Homework	Homework will largely consist of applications of the material discussed in class, in which students will be asked to apply the basic tools of game theory to analyze e.g. specific industry problems, business practices etc.	√	√	√	√	
Team Paper	Each student needs to write a 10-page report on a case study that requires knowledge of game theory, information economics or mechanism design. The topic for the project can be any real-life application of game theory. The analysis should be based on facts, data, logical reasoning and economic principles.	√	√	√	√	

4. Assessment Tasks/Activities (ATs)
(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No. 1	2	3	4	Weighting	Remarks
Continuous Assessment: 100 %						
Midterm Examination	√	√	√	√	50%	3-hour written exam arranged towards the later weeks of the semester
Term Paper	√	√	√	√	40%	
Homework	√	√	√	√	10%	
Examination: 0 % (duration: , if applicable)						
					100%	

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-)	Adequate (C+, C, C-)	Marginal (D)	Failure (F)
1. Midterm Examination 2. Team Paper 3. Homework		Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.	Student who is profiting from the university experience; understanding of the subject; ability to develop solutions to simple problems in the material.	Sufficient familiarity with the subject matter to enable the student to progress without repeating the course.	Little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited, or irrelevant use of literature.

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

1. **Keyword Syllabus**
   (An indication of the key topics of the course.)

   1. Games with Simultaneous Moves and Complete Information
      a. Normal-form Representation
      b. Nash Equilibrium
      c. Mixed Strategies
   2. Games with Sequential Moves and Complete Information
      a. Extensive-form Representation
      b. Subgame-perfect Nash Equilibrium
      c. Repeated Game
      d. Stationary Equilibrium
   3. Games with Simultaneous Moves and Incomplete Information
      a. Static Bayesian Games
      b. Bayesian Nash Equilibrium
      c. Auctions
   4. Games with Sequential Moves and Incomplete Information
      a. Perfect Bayesian Equilibrium
      b. Signalling
      c. Cheap Talks

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.	R. Gibbons (1992) *A primer in game theory*, Prentice Hall
2.	Salanie, B. (2005) *The economics of contracts: a primer*, second edition, MIT press

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

1.	Fudenberg, D. and J. Tirole (1991). *Game theory*. MIT press.
2.	Bolton, P. and M. Dewatripont (2004) *Contract theory*, MIT press