

**City University of Hong Kong  
Course Syllabus**

**offered by Department of Economics and Finance  
with effect from Semester A 2017/18**

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**Part I Course Overview**

<b>Course Title:</b>	<b>Principles of Option Pricing</b>
<b>Course Code:</b>	<b>EF4520</b>
<b>Course Duration:</b>	<b>1 Semester</b>
<b>Credit Units:</b>	<b>3</b>
<b>Level:</b>	<b>B4</b>
<b>Proposed Area:</b> <i>(for GE courses only)</i>	<input type="checkbox"/> Arts and Humanities <input type="checkbox"/> Study of Societies, Social and Business Organisations <input type="checkbox"/> Science and Technology
<b>Medium of Instruction:</b>	<b>English</b>
<b>Medium of Assessment:</b>	<b>English</b>
<b>Prerequisites:</b> <i>(Course Code and Title)</i>	<b>CB3410 Financial Management or FB3410 Financial Management</b>
<b>Precursors:</b> <i>(Course Code and Title)</i>	<b>Nil</b>
<b>Equivalent Courses:</b> <i>(Course Code and Title)</i>	<b>Nil</b>
<b>Exclusive Courses:</b> <i>(Course Code and Title)</i>	<b>Nil</b>

## Part II Course Details

### 1. Abstract

This course aims to provide a framework of the pricing of financial securities in the discrete-time setting and to present formal approaches to the valuation of financial securities.

### 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.	Describe the basic framework of the pricing of financial securities		√		
2.	Master two basic pricing approaches, namely, the arbitrage-based valuation and the equilibrium-based valuation.			√	
3.	Apply the methods of arbitrage, optimality, and equilibrium to value financial securities, and to build valuation models.			√	√
		100%			

\* If weighting is assigned to CILOs, they should add up to 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 real-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	
Lectures	Class discussions lead students to design models that match the theoretical framework with real markets.	√			
	Class discussions motivate students to discover new and innovative insights on the two valuation approaches.		√		
	Class discussions encourage students to explore the use of the pricing methods for real-world contingent claims.			√	

### 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%					
Midterm Exam	√	√	√	30%	
Group Project	√	√	√	20%	
Examination: 50% (duration: 2 hours, if applicable)					
Final Exam	√	√	√	50%	
				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)
Mid-term Exam	Test the materials covered in the sessions prior to midterm exam.	High	Significant	Moderate	Basic	Worse than Marginal
Group Project	Applying learned numerical methods to solve real-world problems, and effectively communicate the results.	High	Significant	Moderate	Basic	Worse than Marginal
Final Exam	Comprehensive examination of all covered knowledge and techniques.	High	Significant	Moderate	Basic	Worse than Marginal

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

**1. Keyword Syllabus**

Options Market, No Arbitrage and Risk Neutral Pricing, Binomial Model, Monte Carlo Simulation, The BSM Model, Greek Letters.

**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.	John C. Hull, Options, Future, and Other Derivatives (8th Edition).
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**2.2 Additional Readings**

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

1.	Nil
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