City University of Hong Kong
Course Syllabus

offered by Department of Economics and Finance
with effect from Semester A 2022 /23

Part I Course Overview

Course Title:	Option Pricing
Course Code:	EF5210
Course Duration:	1 semester
Credit Units:	3
Level:	P5
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	EF5050 Derivative and Risk Management
Precursors: *(Course Code and Title)*	EF5250 Stochastic Calculus for Finance
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

This course aims to develop students' analytical and quantitative skills in derivatives pricing models.

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.	Describe the idea of no-arbitrage pricing of options, and assess its practicality in real market.	-	√	√	√
2.	Compare a variety of option pricing models, and apply or integrate the analytics to real market products.	-	√	√	√
3.	Identify the key features of derivative products on different asset classes.	-	√		
4.	Analyse the pricing of nonstandard features in real-world exotic options, and design effective analytical and numerical solutions.	-	√	√	√
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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	4	
Lectures and class discussions	Describe the idea of no-arbitrage pricing of options, compare a variety of option pricing models, identify the key features of derivative products on different asset classes, and analyse the pricing of nonstandard features in real-world exotic options, and design effective analytical and numerical solutions.	√	√	√	√	3 hours per week

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	4		
Continuous Assessment: 50 %						
Coursework (such as, assignments)	√	√	√	√	50 %	Students should be able to apply the analytics, design numerical procedure.
Examination: 50 % (duration: 3 hours, if applicable)						
Final Exam	√	√	√	√	50 %	
					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.)

Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Coursework (such as, assignments)	Demonstrate understanding the course materials by completing problem solving questions and exercise as assigned.	High	Significant	Basic	Not even reaching marginal levels
2. Final Exam	Demonstrate the capability of mastering theories and models of option pricing and the capability of applying them in analysing various real-life options products.	High	Significant	Basic	Not even reaching marginal levels

Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Coursework (such as, assignments)	Demonstrate understanding the course materials by completing problem solving questions and exercise as assigned.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Final Exam	Demonstrate the capability of mastering theories and models of option pricing and the capability of applying them in analysing various real-life options products.	High	Significant	Moderate	Basic	Not even reaching marginal levels

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.)

Exotic Options, American Options, Interest Rate Models, Risk Neutral Pricing, Numerical Methods in Derivatives pricing

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, Futures, and Other Derivatives, Prentice Hall (ISBN 0-13-046592-5).
2.	P. Wilmott, Paul Wilmott Introduces Quantitative Finance, Wiley.

2.2 Additional Readings

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