

**City University of Hong Kong
Course Syllabus**

**offered by Department of Economics and Finance
with effect from Semester A 2018/19**

Part I Course Overview

Course Title: Derivatives and Risk Management

Course Code: EF 4321

Course Duration: 1 Semester

Credit Units: 3

Level: B4

Arts and Humanities

Proposed Area:
(for GE courses only)

Study of Societies, Social and Business Organisations

Science and Technology

Medium of Instruction:

English

Medium of Assessment:

English

Prerequisites:
(Course Code and Title)

CB3410 Financial Management or FB3410 Financial Management

AND

EF3320 Security Analysis and Portfolio Management

Precursors:
(Course Code and Title)

EF3333 Financial Systems, Markets and Instruments

Equivalent Courses:
(Course Code and Title)

Nil

Exclusive Courses:
(Course Code and Title)

EF4420 Derivatives Analysis and Advanced Investment Strategies

Part II Course Details

1. Abstract

This course aims to facilitate students' learning of financial derivative instruments, and the practice of risk management. Upon completion of this course, students will be able to apply a variety of derivatives models; use options, futures contracts, and swaps to do arbitrage and to form hedging portfolios; and use derivative securities to manage the risk of financial assets.

The first part of the course concentrates on the practice of risk management. It will address various types of risks that firms are exposed to, how to estimate the risk exposure of firms, and the costs and benefits associated with risk management. Students are required to apply the risk management methodology to real market data and compare various measures of risks.

The second part of the course will focus on financial derivative instruments, including a discussion of the nature of various derivative instruments, how they can be used for investment and hedging purposes, and how they are priced. Students are encouraged to develop their discovery and innovative ability by creating various hedging solutions.

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.	Identify the basic knowledge of derivative securities and risk management; compare and contrast the different characteristics and purposes of use for various derivatives; explain the risk exposures of companies in various industries.	60%	√	√	
2.	Apply options, futures, forwards, swaps, and etc. to do arbitrage and to form hedging portfolios; discover the arbitrage opportunities by analyzing historical and recent data and test the effectiveness of hedging portfolio in different kinds of scenarios.	20%	√	√	√
3.	Use derivatives to manage the risk of financial assets; develop innovative skills by structuring solutions to manage the risk exposure of financial assets of the company.	10%		√	√
4.	Identify the VAR in risk management; compare the VAR in various portfolios and interpret the difference creatively and critically.	10%	√	√	√
		100%			

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

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	4	
Lectures	To provide basic concepts and structure. The lecturer encourages students to think critically and logically, to solve the problems by themselves rather than giving away the solutions without engaging students.	√	√	√	√	3 hrs/wk
Assignments	The assignments consist of short questions and calculation questions, with a focus on the prevailing risk management strategies adopted by companies. Students are expected to apply the risk-management theories and to critically analyse the related issues in the financial market.	√	√	√	√	1 hr/wk
Mid-Term Exam	The Mid-Term examination which covers the topics in lectures and coursework will reflect the learning outcomes of students as well as their accomplishments of discovery and innovation.	√			√	
Final Exam	The final examination which covers the topics in lectures and coursework will reflect the learning outcomes of students as well as their accomplishments of discovery and innovation.	√	√	√	√	

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%						
Assignments	√	√	√	√	20%	
Mid-term Exam	√			√	30%	
Examination: 50% (duration: 2 hours, if applicable)						
Final Exam	√	√	√	√	50%	
					100%	

* The weightings should add up to 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-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Final Exam (2 hour exam)	Capacity for: (i) understanding different kinds of derivatives; (ii). Using different derivatives and assets to form hedging portfolios; (iii) managing different risk with different derivatives; (iv) discovering arbitrage opportunities; and etc.	High	Significant	Moderate	Basis	Not even reaching marginal levels
Assignments	Ability to explain different instrument, methodology, procedure, and etc.	High	Significant	Moderate	Basis	Not even reaching marginal levels
Mid-term Exam	Capacity for: (i) understanding different kinds of derivatives; (ii). Using different derivatives and assets to form hedging portfolios; (iii) managing different risk with different derivatives; (iv) discovering arbitrage opportunities; and etc.	High	Significant	Moderate	Basis	Not even reaching marginal levels

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

1. Keyword Syllabus

Introduction: Derivative Instruments and Risk Management

Derivative Instruments and Fundamentals of Hedging

- Forward and Futures
- Determination of Forward and Futures Prices
- Hedging with Forward and Futures
- Swaps
- Mechanics of Options Markets
- Properties of Stock Options
- Trading Strategies and Risks with Options
- Binomial Trees for Pricing Options
- Option Prices, Delta and the Black-and-Scholes Model
- Hedging in Practice: Case Studies
- Using the Greeks, Delta Hedging and Portfolio Insurance

Topics in Risk Management

- Fundamentals of Risk Management
- Market Risk and the Value-at-Risk Framework
- Alternative Risk Measures
- Credit Risk and Credit Risk Management
- Derivatives Mishaps and What We Can Learn from Them

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.	<i>Options, Futures, and Other Derivatives</i> , Global Edition 8th, by HULL, John C. Published by Prentice Hall, 2012, 847 pages.
2.	<i>Lecture Notes</i> , available on the Canvas

2.2 Additional Readings

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

1.	Supplementary textbook: <i>Financial Risk Manager Handbook</i> , Sixth Edition, by JORION, Philippe. Published by Wiley 2011
2.	Books for fun: <i>A Random Walk Down Wall Street</i> by Burton Malkiel; <i>When Genius Failed. The Rise and Fall of Long-Term Capital Management</i> by Roger Lowenstein; <i>Big Bets Gone Bad</i> by Philippe Jorion.
3.	Recommended periodicals and newspapers: <i>Economist</i> , <i>Wall Street Journal</i> , and <i>Business Week</i> . (Most of the web editions are free, though online-registration might be needed)
4.	Recommended web sites: Yahoo! Finance, Bloomberg, CNN Money, Smart Money, MSNBC Stocks & Economy, and USA Today Money Sections.