

**City University of Hong Kong
Course Syllabus**

offered by College/School/Department of Mathematics
with effect from Semester A 20 22 / 23

Part I Course Overview

Course Title: Special Topics

Course Code: MA6631

Course Duration: 1 semester

Credit Units: 3 CUs

Level: P6

Medium of Instruction: English

Medium of Assessment: English

Prerequisites: MA5616 Financial Mathematics in Derivative Markets;
(Course Code and Title) MA5617 Statistical Data Analysis

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 may include one or two topics in a current or timely trend in mathematical finance. Topics may vary among big data analysis, stochastic control theory, and computing technology oriented to various financial applications. A successful student is expected to integrate mathematical knowledge and analytical techniques of diverse subjects to catch up new methodologies not available from the standard textbook, and shall complete independently an essay at the end.

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.	formulate the structure of one or two proposed topics in general terms, and outline several examples of real applications in economics and finance.	25	✓		
2.	explain the classical approaches and methodologies applicable to the aforementioned topics	25	✓	✓	
3.	digest current trend and new approaches from recent related literatures, and explore new discoveries independently if possible.	50	✓	✓	✓
		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.						Hours/week (if applicable)
		1	2	3	4	5	6	
take-home assignments	Learning through take-home assignments helps students implement advanced theory for better understanding	✓	✓					After-class
project/(s)	Learning through project(s) enables students to formulate more sophisticated problems related to the current topics			✓				After class

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	5	6		
Continuous Assessment: 100 %								
Test	✓	✓					25--50%	
Hand-in assignments	✓	✓					0 -- 25%	
Essay			✓				25--50%	
Examination: 0 % (duration: hrs, if applicable)								
							100%	

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. Test	Problem solving ability	High	Significant	Basic	Not even reaching marginal levels
2. Hand-in assignments	Comprehensive understanding	High	Significant	Basic	Not even reaching marginal levels
3. Essays	Creativity based on learning	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. Test	Problem solving ability	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Hand-in assignments	Comprehensive understanding	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Essays	Creativity based on learning	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.)

Key words may vary term by term

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.	Course materials provided
2.	
3.	
...	

2.2 Additional Readings

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

1.	
2.	
3.	
...	