City University of Hong Kong
Course Syllabus

offered by Department of Management Sciences
with effect from Semester A 2022/23

Part I Course Overview

Course Title:	Statistical Modelling in Risk Management
Course Code:	MS6211
Course Duration:	One Semester
Credit Units:	3
Level:	P6
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

This course aims to

- Prepare students with business knowledge of risk management with emphasis on operational risk management, credit risk management, and financial risk management.
- Develop students' modelling and computing skills to create and evaluate credit scorecards.

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.	Define credit, financial, and operational risks;	20%		✓	
2.	Interpret various basic concepts and principles related to risk management;	30%		✓	
3.	Create appropriate models to measure risk and to provide solutions or recommendations for managing and mitigating risk;	30%		✓	
4.	Align risk mitigation strategy with the needs of particular organizations.	20%			✓
		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			
Lecture	Interactive lectures, case studies, group discussions	✓	✓	✓	✓			3
Case studies & group discussions	Students are given tasks to discover various risk control strategies and apply them to different industries.		✓	✓	✓			
Project	Students work in teams to construct models from real data, summarize their findings in a report and make in class presentation.			✓	✓			2

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: __100__ %								
Project			✓	✓			30%	
Assignments	✓	✓	✓	✓			30%	
Tests	✓	✓	✓	✓			30%	
Class Participation	✓	✓	✓	✓			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.)

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. Project	Clear presentation with good understanding of risk management concepts and methodologies	High	Significant	Moderate	Not even reaching marginal levels
2. Assignments	Correctly solve the problems with good understanding of concepts and methodologies	High	Significant	Moderate	Not even reaching marginal levels
3. Tests	Correctly solve the problems with good understanding of concepts and methodologies	High	Significant	Moderate	Not even reaching marginal levels
4. Class Participation	Attend at least 80% of the lectures	High	Significant	Moderate	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. Project	Clear presentation with good understanding of risk management concepts and methodologies	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Assignments	Correctly solve the problems with good understanding of concepts and methodologies	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Tests	Correctly solve the problems with good understanding of concepts and methodologies	High	Significant	Moderate	Basic	Not even reaching marginal levels
4. Class Participation	Attend at least 80% of the lectures	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.)

1. Introduction

Nature, scope and terminology of risk management topics. The burden of risk. Measurement of risk. Management of risk.

2. The Risk Management Process

Risk classification and evaluation. Methods of handling risk. Selecting risk management techniques. Insurance as a risk management tool.

3. Risk and Insurance

Pooling of losses. Payment of accidental losses. Risk transfer. Indemnification. Requirements of insurable risk. Adverse selection.

4. Credit Risk Management

Introduction to Credit Risk. Scorecard Development Roles. Risk Scorecard Development Planning. Defining project parameters, e.g., good/bad, exclusions, indeterminates.

5. Credit Risk Model and Strategy Management

Development Database Creation. Model Development: creating a scorecard. Scorecard Management Reports. Strategy Development. Post-Implementation.

6. Operational Risk Management

Introduction to Operational Risk. Aims of Operational Risk Management. Key Components of Operational Risk Management. Hedging Strategies.

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.)

Nil

2.2 Additional Readings

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

1.	Thomas, L., Edelman, D., and Crook, J., Credit Scoring and Its Applications, SIAM, 2002.