The Hong Kong University of Science and Technology

UG Course Syllabus

[Course Title] Systems Risk Management

[Course Code] IEDA4510

[No. of Credits] 3

[Any pre-requisites] IEDA3010, IEDA3250

Instructor: Allen Wu

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Office Hours: By appointment

Course Description

Risk management has drawn tremendous amount of attention from various industries. This course focuses on the risks within financial institutions. This course covers the basic concepts of financial risks and provides analytical approaches to quantify and control various types of risks in finance.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. Understand the basic concepts and principles in risk management.

2. Understand the functions of financial institutions such as banks, mutual funds, ETFs, and hedge funds.

3. Develop quantitative models for trading in financial markets.

4. Understand the role of interest rates in risk management.

5. Use valuation and scenario analysis to quantify risks, and apply value at risk and expected shortfall to measure risks.

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

Assessment Task	**Contribution to Overall Course grade (%)**	**Due Date**
Homeworks	20%	Week 3, 6, 9, 12
Mid-term	35%	Week 7
Final	45%	Week 14

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Homeworks	ILO1, ILO2, ILO3, ILO4, ILO5	Homeworks will cover all lecture materials.
Mid-term	ILO1, ILO2, ILO3	Mid-term will cover major topics such as banks, insurance and pension plans, and trading in financial markets.
Final	ILO4, ILO5	Final will cover major topics such as valuation and scenario analysis, hedging risks, interest rate risks, and value at risk and expected shortfall.

Grading Rubrics

Rubrics for each individual assignment will be provided. These rubrics clearly outline the criteria used for evaluation. Students can refer to these rubrics to understand how their work will be assessed.

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking.
B	Good Performance	Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues.
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking.
D	Marginal Pass	Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic judgments.
F	Fail	Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals.

Course AI Policy

The use of generative artificial intelligence tools to is permitted with proper acknowledgement.

Required Texts and Materials

Risk Management and Financial Institutes, Fifth Edition, by John C. Hull, Wiley

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic Integrity | HKUST – Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.