EF5050: DERIVATIVES AND RISK MANAGEMENT

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Derivatives and Risk Management

Subject Code
EF - Economics and Finance
Course Number
5050

Academic Unit
Economics and Finance (EF)

College/School
College of Business (CB)

Course Duration
One Semester

Credit Units
3

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
EF5052 Investments

Equivalent Courses
EF5156 Financial Risk Management (From the old curriculum)

Exclusive Courses
Nil

Part II Course Details

Abstract

This course aims to introduce the students to the use, pricing and hedging of basic financial derivatives such as futures, forwards, options and swaps and the principles of financial 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.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Demonstrate the ability to price basic financial derivative products.	35	x	x	
2	Demonstrate the ability to use basic financial derivative products to hedge market risk.	35		x	x
3	Demonstrate the ability to design strategies that alter the risk exposure of companies or institutions exposed to financial risk.	30	x	x	x

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 real-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.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will engage in formal lecture which will explain 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.	1, 2, 3	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Coursework (homework problems/ quiz(zes)/project(s) etc.)	1, 2, 3	60	For Assignments and Group Project, students can use Generative Artificial Intelligence Tools to help them understand the concepts/ questions/ problems, or analyze data. But the final version must be their own work, e.g., students cannot copy and paste the AI answers as their own answers. Students are not allowed to use Generative Artificial Intelligence Tools in mid-term examination(s)/ quiz(zes).	Yes

Continuous Assessment (%)

60

Examination (%)

40

Examination Duration (Hours)

2

Additional Information for ATs

Students are required to pass both coursework and examination components in order to pass the course.
Students are not allowed to use Generative Artificial Intelligence Tools in the final examination.

Assessment Rubrics (AR)

Assessment Task

Coursework (homework problems/quiz(zes)/project(s) etc.) (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Demonstrate the understanding of course materials by completing problem solving questions and exercise as assigned / applying derivatives models to real-life risk-management.

Excellent

(A+, A, A-) Demonstrate very strong knowledge in derivatives pricing & hedging, a superior grasp of the critical issues, and strong capability in applying different models.

Good

(B+, B, B-) Demonstrate good knowledge in derivatives pricing & hedging, a good grasp of the critical issues, and strong capability in applying different models.

Fair

(C+, C, C-) Demonstrate adequate knowledge in derivatives pricing & hedging, some knowledge of the critical issues, and sign of awareness of using different pricing schemes.

Marginal

(D) Demonstrate marginal knowledge in derivatives pricing & hedging, limited knowledge of the critical issues, and no awareness of using different pricing models.

Failure

(F) Demonstrates very little knowledge in derivatives pricing & hedging, no awareness of the critical issues and the use of different pricing models.

Assessment Task

Final Examination (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Demonstrate the capability of mastering theories and a variety of derivatives models and the capability of applying them in managing the risk of financial assets.

Excellent

(A+, A, A-) Demonstrate very strong knowledge in derivatives pricing & hedging, a superior grasp of the critical issues, and strong capability in applying different models.

Good

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Fair

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Marginal

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Failure

(F) Demonstrates very little knowledge in derivatives pricing & hedging, no awareness of the critical issues and the use of different pricing models.

Assessment Task

Coursework (homework problems/quiz(zes)/project(s) etc.) (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Demonstrate the understanding of course materials by completing problem solving questions and exercise as assigned / applying derivatives models to real-life risk-management.

Excellent

(A+, A, A-) Demonstrate very strong knowledge in derivatives pricing & hedging, a superior grasp of the critical issues, and strong capability in applying different models.

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Assessment Task

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Part III Other Information

Keyword Syllabus

Futures, Options, Swaps, Options Pricing, Hedging, Risk Management, Market Risk, Value at Risk, Stochastic Processes

Reading List

Compulsory Readings

	Title
1	Options, Futures and Other Derivatives, by John Hull, Pearson.

Additional Readings

	Title
1	Paul Wilmott Introduces Quantitative Finance, by Paul Wilmott, Wiley.
2	A Course in Derivative Securities: Introduction to Theory and Computation, by Kerry Back, Springer.
3	Dynamic Hedging: Managing Vanilla and Exotic Options, by NN Taleb, Wiley.
4	My Life as a Quant: Reflections on Physics and Finance, by Emanuel Derman, Wiley.