EF5210: OPTION PRICING

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Option Pricing

Subject Code
EF - Economics and Finance
Course Number
5210

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
EF5050 Derivative and Risk Management

Precursors
EF5250 Stochastic Calculus for Finance

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract
This course aims to develop students' analytical and quantitative skills in derivatives pricing models.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the idea of no-arbitrage pricing of options, and assess its practicality in real market.		x	x	x
2	Explain a variety of option pricing models, and apply or integrate the analytics to real market products.		x	x	x
3	Explain the key features of derivative products on different asset classes.		x		
4	Identify the pricing of nonstandard features in real-world exotic options, and design effective analytical and numerical solutions.		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 and class discussions	Students will engage in formal lecture that will describe the idea of no-arbitrage pricing of options, compare a variety of option pricing models, identify the key features of derivative products on different asset classes, and analyse the pricing of nonstandard features in real-world exotic options, and design effective analytical and numerical solutions.	1, 2, 3, 4	3 hours per week

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Coursework (such as, assignments)	1, 2, 3, 4	40	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 (%)

40

Examination (%)

60

Examination Duration (Hours)

3

Additional Information for ATs

Coursework: Students should be able to apply the analytics, and design numerical procedure.

Students are not allowed to use Generative Artificial Intelligence Tools in the final examination.

Assessment Rubrics (AR)

Assessment Task

Coursework (such as, assignments) (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Demonstrate understanding the course materials by completing problem solving questions and exercise as assigned.

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

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

Criterion
Demonstrate the capability of mastering theories and models of option pricing and the capability of applying them in analysing various real-life options products.

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Coursework (such as, assignments) (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Demonstrate understanding the course materials by completing problem solving questions and exercise as assigned.

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task

Final Exam (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Demonstrate the capability of mastering theories and models of option pricing and the capability of applying them in analysing various real-life options products.

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

Exotic Options, American Options, Interest Rate Models, Risk Neutral Pricing, Numerical Methods in Derivatives pricing

Reading List

Compulsory Readings

	Title
1	John C. Hull, Options, Futures, and Other Derivatives, Prentice Hall (ISBN 0-13-046592-5).
2	P. Wilmott, Paul Wilmott Introduces Quantitative Finance, Wiley.

Additional Readings

	Title
1	Nil