

EF5212: INTEREST RATE DERIVATIVES

Effective Term

Semester B 2024/25

Part I Course Overview

Course Title

Interest Rate Derivatives

Subject Code

EF - Economics and Finance

Course Number

5212

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

EF5052 Investments

Precursors

EF5050 Derivatives and Risk Management

EF5210 Option Pricing

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to further develop student's analytical skills in financial engineering with respect to interest rate derivatives.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Getting familiar with interest rate model.		x		
2	Calibrate interest rate model from market prices.		x	x	
3	Use various numerical techniques to price interest rate derivatives.		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	Discuss interest rate models and apply various numerical techniques to price interest rate derivatives.	1, 2, 3
			-

Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Coursework	1, 2, 3	60
			-

Continuous Assessment (%)

60

Examination (%)

40

Examination Duration (Hours)

3

Assessment Rubrics (AR)

Assessment Task

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

Criterion

Demonstrate the capability of applying the interest rate models and numerical techniques to tackle some problem-solving questions or exercises as assigned by the lecturer.

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

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

Criterion

Demonstrate having good understanding of interest rate models and the capability of applying various numerical techniques to price interest rate derivatives.

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

Criterion

Demonstrate the capability of applying the interest rate models and numerical techniques to tackle some problem-solving questions or exercises as assigned by the lecturer.

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

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

Criterion

Demonstrate having good understanding of interest rate models and the capability of applying various numerical techniques to price interest rate derivatives.

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**

Rendleman-Barter Model, Black-Derman-Toy Model, Vasicek Model, Cox-Ingersoll-Ross Model, No-arbitrage Model, Ho-Lee Model, Hull-White Model, Heath-Jarrow-Morton Model, Brace-Gatarek-Musiela Model

Reading List**Compulsory Readings**

Title	
1	John C. Hull, "Options, Futures, and Other Derivatives", Seventh Edition, Pearson.

Additional Readings

Title	
1	Nil