EF5157: FIXED INCOME SECURITIES

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Fixed Income Securities

Subject Code
EF - Economics and Finance
Course Number
5157

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
EF5042 Corporate Finance and EF5052 Investments

Equivalent Courses
EF5154 Advanced Topics in Debt Markets

Exclusive Courses
Nil

Part II Course Details

Abstract

This course aims at introducing the analytical techniques, products, applications, and institutions in debt markets to students.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Demonstrate a solid understanding of the basics of fixed income securities and the main theories of the term structure of interest rates.	15	x	x	
2	Explain and apply the concepts of duration and convexity in the context of interest rate risk management.	15	x	x	
3	Explain interest rate derivatives (forwards, futures, swaps, options) and apply them for hedging purposes.	15	x	x	x
4	Explain and construct binomial trees and apply them for pricing interest rate derivatives (caps, floors, futures, European and American swaptions, callable bonds).	30	x	x	x
5	Explain Monte Carlo simulation on binomial trees and apply it to price path-dependent options and residential mortgage-backed securities.	15	x	x	x
6	Describe and apply the Black formula for pricing caps, floors, and swaptions.	10	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 in-class discussions	Students will engage in formal lectures that are designed to develop their discovery abilities through class discussions and circumstance simulation. Lectures will focus on basic concepts and frameworks. Students are expected to discover the methodology of interest rate models and applications. In-class discussions will motivate students' participation and enhance their communication skills, critical thinking, and creative and innovative skills.	1, 2, 3, 4, 5, 6	3 hours lecture per week

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Group assignments/ projects	1, 2, 3, 4, 5, 6	50	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 (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Additional Information for ATs

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

Assessment Rubrics (AR)

Assessment Task

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

Criterion

Demonstrate the capability of applying financial theories of fixed income securities and interest rate derivatives learned in the course by completing the various assigned group assignments and projects.

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

Criterion

Demonstrate good understanding of the financial theories and applications of fixed income securities and 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 (group assignments/projects) (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Demonstrate the capability of applying financial theories of fixed income securities and interest rate derivatives learned in the course by completing the various assigned group assignments and projects..

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

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

Criterion

Demonstrate good understanding of the financial theories and applications of fixed income securities and 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

Fixed income securities, Bond markets, Yield-to-maturity, Bond duration and convexity, Spot rates, Forward rates, Term-structure of interest rates, Mortgage-backed securities, Prepayment risk, Convertible bonds, Binomial-tree method, Credit derivatives, Structured products

Reading List

Compulsory Readings

	Title
1	Fixed Income Securities: Valuation, Risk and Risk Management by Pietro Veronesi. John Wiley & Sons, 2011. ISBN 978-0-470-10910-6 (paper) or 978-0-470-58689-1 (e-book).

Additional Readings

	Title
1	Nil