EF5560: FINTECH AND AI IN FINANCE

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Fintech and AI in Finance

Subject Code
EF - Economics and Finance
Course Number
5560

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
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract
This course offers a comprehensive introduction to Bitcoin, cryptocurrencies, and quantitative investment strategies powered by machine learning and AI. The first part demystifies the fundamentals of blockchain technology, Bitcoin

mechanics, and the evolving crypto ecosystem. The second part focuses on applying data-driven techniques, including machine learning models and AI algorithms, to analyze financial markets and build quantitative investment strategies. Designed for students without prior experience, this course blends theory, and practical insights to equip learners with foundational knowledge and hands-on skills in emerging financial technologies and advanced quantitative methods.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain blockchain and cryptocurrency basics.		x	x	
2	Describe cryptocurrency economics and security.		x	x	
3	Understand machine learning applications in quantitative investment.			x	x
4	Understand generative AI applications in financial markets.			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 lectures that explain fundamentals of the traditional financial system.	1, 2, 3, 4	3-hour seminar per week
2	Peer discussion	Students will engage in structured discussion with peers to identify areas to improve on in their returned assessment tasks.	1, 2, 3, 4	In-class and out-of-class preparation and participation

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Coursework (such as, case assignments, problem sets, etc.)	1, 2, 3, 4	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 not allowed to use Generative Artificial Intelligence Tools in the final examination.

Assessment Rubrics (AR)

Assessment Task

Coursework (such as, case assignments, problem sets, etc.)

Criterion

Demonstrate critical understanding of key economic concepts related to blockchain and cryptocurrency. Understand the fundamentals of how machine learning and AI are applied in quantitative investment strategies.

Excellent

(A+, A, A-) Outstanding

Good

(B+, B, B-) High

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not reaching marginal level

Assessment Task
Final examination

Criterion
Demonstrate critical understanding of key economic concepts related to blockchain and cryptocurrency. Understand the fundamentals of how machine learning and AI are applied in quantitative investment strategies.

Excellent
(A+, A, A-) Outstanding

Good
(B+, B, B-) High

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not reaching marginal level

Part III Other Information

Keyword Syllabus
Blockchain and Cryptocurrency Basics
Cryptocurrency Economics and Security
Supervised Learning Techniques for Return Prediction
Unsupervised Learning and Clustering in Market Data
Generative AI and Textual Analysis in Financial Markets

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Nil