Subject Description Form

Subject Code	AMA568
Subject Title	Advanced Topics in Quantitative Finance
Credit Value	3
Level	5
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	This subject is to introduce students to some advanced topics in quantitative finance, including the pricing of exotic options, VIX, early decisions in structured products, optimal investment strategies, and relevant numerical methods.
Intended Learning Outcomes	Upon satisfactory completion of the subject, students should be able to: a. Gain a deep understanding of advanced models in quantitative finance; b. Learn how to price some structure products; c. Learn how to design trading strategies.
Subject Synopsis/ Indicative Syllabus	VIX, volatility products, convertible bonds, MBS, guaranteed minimum withdrawal benefits, models beyond the Black-Scholes world, momentum trading, optimal trading strategies, etc.
Teaching/Learning Methodology	The subject will be delivered mainly through lectures and tutorials. Assignments and projects will be also given.

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)		
		a	b	c
1. CA	50%	√	√	√
2. Exam	50%	√	√	√
Total	100%			

Explanation of the appropriateness of the assessment methods in assessingthe intended learning outcomes:

CA: help students understand the financial products and results and apply the pricing methods and trading strategies.

Examination: an overall examination of theoretical results and numerical methods studied in the whole semester.

Student Study Effort Required	Class contact:	
	▪ Lecture	26 Hrs.
	▪ Tutorial	13 Hrs.
	Other student study effort:	
	▪ Assignment	36Hrs.
	▪ Self-study	30Hrs.
	▪ Total student study effort	105Hrs.
Reading List and References	1. John Hull (2021), Options, Futures, and Other Derivatives, 11th edition, Pearson/Prentice Hall. 2. Steven Shreve (2008), Stochastic Calculus for Finance, Part I: The Binomial Asset Pricing Model; Part II: Continuous-Time Models; Springer-Verlag. 3. Paul Wilmott (2006), Paul Wilmott on Quantitative Finance. Wiley.	