

## Subject Description Form

<b>Subject Code</b>	AMA572
<b>Subject Title</b>	Fixed-income and Credit Risk
<b>Credit Value</b>	3
<b>Level</b>	5
<b>Pre-requisite/ Co-requisite/ Exclusion</b>	Nil
<b>Objectives</b>	To introduce students some advanced topics in interest rate theory and credit risk modelling and emphasizes their analogies.
<b>Intended Learning Outcomes</b>	Upon completion of the subject, students will be able to: <ul style="list-style-type: none"> <li>(a) Comprehensively understand and describe financial instruments for managing interest rate risk and credit risk.</li> <li>(b) Identify the key elements of quantitative methods in pricing and hedging fixed income securities and derivatives.</li> <li>(c) Apply the quantitative methods and skills to price and hedge complex structured financial products.</li> </ul>
<b>Subject Synopsis/ Indicative Syllabus</b>	<p><u>Fixed-income models</u> Products of fixed income markets, short-rate models, Heath-Jarrow-Morton models, LIBOR market models</p> <p><u>Financial instruments in credit risk management</u></p> <p><u>Models of default</u> Firm value, first passage time models, intensity-based models, models of credit rating migrations</p> <p><u>Synthetic credit-linked instruments</u></p> <p><u>Modelling dependence structure of default events and default contagion</u></p>
<b>Teaching/Learning Methodology</b>	The subject will mainly be delivered through lectures and exercise-based tutorials. The teaching and learning approach is mainly problem-solving oriented. The approach aims at the development of mathematical techniques and how the techniques can be applied to solving problems. Students are encouraged to adopt a deep study approach by employing high level cognitive strategies, such as critical and evaluative thinking, relating, integrating and applying theories to practice.

<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)			
			a	b	c	d
	1. Assignments/Project	20%	✓	✓	✓	✓
	2. Midterm Test	20%	✓	✓	✓	
	3. Examination	60%	✓	✓	✓	✓
Total	100%					
Continuous Assessment comprises of assignments/project and a midterm test. A written examination is held at the end of the semester.						
<b>Student Study Effort Required</b>	Class contact:					
	▪ Lecture					26 Hrs.
	▪ Tutorial					13 Hrs.
	Other student study effort:					
	▪ Assignments/Projects					58 Hrs.
	▪ Self-study					40 Hrs.
	Total student study effort					137 Hrs.
<b>Reading List and References</b>	<u>References:</u>					
	Anthony Saunders and Linda Allen	Credit risk management in and out of the financial crisis: New approaches to value at risk and other paradigms	Wiley Finance, 2010			
	B. Tuckman and Angel Serrat	Fixed income securities: Tools for today's market, third edition	Wiley 2011			
	Darrell Duffie	Measuring corporate default risk	Oxford University press, 2011			
	Darrell Duffie and Kenneth Singleton	Credit risk	Princeton University Press, 2003			