H8DRM: Derivatives and Risk Management

Module Code:	H8DRM
Long Title	Derivatives and Risk Management SUPERSEDED
Title	Derivatives and Risk Management
Module Level:	LEVEL 8
EQF Level:	6
EHEA Level:	First Cycle
Credits:	5
Module Coordinator:	JULIA REYNOLDS
Module Author:	JULIA REYNOLDS
Departments:	School of Business
Specifications of the qualifications and experience required of staff	

Learning Outcomes	
On successful completion of this module the learner will be able to:	
#	**Learning Outcome Description**
LO1	Demonstrate knowledge of all aspects of derivative market theory including an in-depth analysis of option characteristics and types
LO2	Identify how derivative instruments can be used to change or hedge risk and evaluate risks and pay-offs associated with trading such instruments and their implications for business success
LO3	Apply the techniques used to manage interest rate and foreign exchange exposures
LO4	Critically evaluate the techniques used to value options and the factors that determine valuation
LO5	Critically evaluate the different methodologies for measuring portfolio risk

Dependencies
Module Recommendations
No recommendations listed
Co-requisite Modules
No Co-requisite modules listed

Entry requirements	

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Module Content & Assessment

Indicative Content
Introduction to Derivatives Exchange-traded markets; Over-the-counter markets; Forward contracts; Futures contracts; Options; Types of traders: Hedgers, Speculators, Arbitrageurs; Dangers.
Futures markets and central counterparties Specification of a futures contract; Convergence of futures price to spot price; The operation of margin accounts; OTC markets; Market quotes; Delivery; Types of traders and types of orders; Regulation; Accounting and tax; Forward vs. futures contracts.
Hedging strategies using futures Basic principles; Arguments for and against; Basis risk; Cross hedging; Stock index futures; Stack and roll.
Interest rates Swap rates; The risk-free rate; Measuring interest rates; Zero rates; Bond pricing; Determining zero rates; Forward rates; Duration; Convexity; Theories of the term structure of interest rates.
Determination of forward and futures prices Investment assets vs. consumption assets; Short selling; Assumptions and notation; Forward price for an investment asset; Known income; Known yield; Valuing forward contracts; Are forward prices and futures prices equal? Futures prices of stock indices; Forward and futures contracts on currencies; Futures on commodities; The cost of carry; Delivery options; Futures prices and expected future spot prices.
Mechanics of options markets Types of options; Option positions; Underlying assets; Specification of stock options; Trading; Commissions; Margin requirements; The options clearing corporation; Regulation; Taxation; Warrants, employee stock options, and convertibles; Over-the-counter options markets.
Properties of stock options Factors affecting option prices; Assumptions and notation; Upper and lower bounds for option prices; Put–call parity; Calls on a non-dividend-paying stock; Puts on a non-dividend-paying stock; Effect of dividends.
Trading strategies involving options Principal-protected notes; Trading an option and the underlying asset; Spreads; Combinations; Other payoffs.
Binomial trees A one-step binomial model and a no-arbitrage argument; Risk-neutral valuation; Two-step binomial trees; A put example; American options; Delta; Matching volatility with u and d; The binomial tree formulas; Increasing the number of steps: Options on other assets.
The Black–Scholes–Merton model Lognormal property of stock prices; The distribution of the rate of return; The expected return; Volatility; The idea underlying the Black–Scholes–Merton differential equation; Derivation of the Black–Scholes–Merton differential equation; Risk-neutral valuation; Black–Scholes–Merton pricing formulas; Cumulative normal distribution function; Warrants and employee stock options; Implied volatilities; Dividends.

Assessment Breakdown	%
Coursework	30.00%
End of Module Assessment	70.00%

Assessments

Full Time

Coursework

Assessment Type:	Test	**% of total:**	30
Assessment Date:	n/a	**Outcome addressed:**	1,2,3,4
Non-Marked:	No		

Assessment Description:
The continuous assessment will be a mix of theoretical and problem-based questions.

End of Module Assessment

Assessment Type:	Terminal Exam	**% of total:**	70
Assessment Date:	End-of-Semester	**Outcome addressed:**	1,2,3,4,5
Non-Marked:	No		

Assessment Description:
The end of module assessment will consist of a two hours Excel-based exam.

No Workplace Assessment

Reassessment Requirement

Repeat examination
Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.

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Module Workload

Module Target Workload Hours 0 Hours

Workload: Full Time

Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	No Description	2	Every Week	2.00
Tutorial	No Description	1	Every Week	1.00
Independent Learning	No Description	7.5	Every Week	7.50
			Total Weekly Contact Hours	3.00

Module Resources

Recommended Book Resources
Hull, J. C. Options Futures and Other Derivatives, 9th. Pearson Prentice Hall.
Supplementary Book Resources
Hull, J. C. Risk Management and Financial Institutions, 5th Ed. Wiley.
This module does not have any article/paper resources
This module does not have any other resources

Discussion Note:	