

## H8DRM: Derivatives and Risk Management

Module Code:	H8DRM
Long Title	Derivatives and Risk Management <b>APPROVED</b>
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	
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner will be able to:</i>	
<b>#</b>	<b>Learning Outcome Description</b>
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
<b>Dependencies</b>	
<b>Module Recommendations</b>	
No recommendations listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Entry requirements</b>	Programme entry requirements

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Module Content & Assessment			
<b>Indicative Content</b>			
<b>Introduction to Derivatives</b> Exchange-traded markets; Over-the-counter markets; Forward contracts; Futures contracts; Options; Types of traders: Hedgers, Speculators, Arbitrageurs; Dangers.			
<b>Futures markets and central counterparties</b> 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.			
<b>Hedging strategies using futures</b> Basic principles; Arguments for and against; Basis risk; Cross hedging; Stock index futures; Stack and roll.			
<b>Interest rates</b> 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.			
<b>Determination of forward and futures prices</b> 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.			
<b>Mechanics of options markets</b> 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.			
<b>Properties of stock options</b> 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.			
<b>Trading strategies involving options</b> Principal-protected notes; Trading an option and the underlying asset; Spreads; Combinations; Other payoffs.			
<b>Binomial trees</b> 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.			
<b>The Black–Scholes–Merton model</b> 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.			
<b>Assessment Breakdown</b>			<b>%</b>
Coursework			30.00%
End of Module Assessment			70.00%
<b>Assessments</b>			
<b>Full Time</b>			
<b>Coursework</b>			
<b>Assessment Type:</b>	Continuous Assessment	<b>% of total:</b>	30
<b>Assessment Date:</b>	n/a	<b>Outcome addressed:</b>	1,2
<b>Non-Marked:</b>	No		
<b>Assessment Description:</b> Candidates are required to complete one in-class test, which is a mix of theoretical and problem-based questions.			
<b>End of Module Assessment</b>			
<b>Assessment Type:</b>	Terminal Exam	<b>% of total:</b>	70
<b>Assessment Date:</b>	End-of-Semester	<b>Outcome addressed:</b>	1,2,3,4
<b>Non-Marked:</b>	No		
<b>Assessment Description:</b> Final Examination, which will consist of an Excel-based exam.			
No Workplace Assessment			
<b>Reassessment Requirement</b>			
<b>Repeat examination</b> <i>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.</i>			
<b>Reassessment Description</b> Candidates will attempt the repeat assessment for the module, if they do not successfully pass the module. Learners are required to attempt all assessments attaching to a module. For those modules where all learning outcomes are assessable with a final examination, the student does not have to re-sit failed individual CA components.			

## H8DRM: Derivatives and Risk Management

Module Workload				
Module Target Workload Hours 0 Hours				
Workload: Full Time				
Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	Classroom and demonstrations	2	Every Week	2.00
Lecturer Supervised Learning	Mentoring and small-group tutoring	1	Every Week	1.00
Directed Learning	Directed e-learning	3	Every Week	3.00
Directed Learning	Independent learning	8	Every Week	8.00
Total Weekly Contact Hours				14.00

Module Resources	
<i>Recommended Book Resources</i>	
Hull, J. C. Options Futures and Other Derivatives, 11th. Pearson Prentice Hall.	
<i>Supplementary Book Resources</i>	
Hull, J. C. Risk Management and Financial Institutions, 5th Ed. Wiley.	
<i>This module does not have any article/paper resources</i>	
<i>This module does not have any other resources</i>	
Discussion Note:	