

H8STATMF: Statistical Methods for Finance

Module Code:	H8STATMF
Long Title	Statistical Methods for Finance DRAFT
Title	Statistical Methods for Finance
Module Level:	LEVEL 8
EQF Level:	6
EHEA Level:	First Cycle
Credits:	10
Module Coordinator:	
Module Author:	CORINA SHEERIN
Departments:	
Specifications of the qualifications and experience required of staff	
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
#	Learning Outcome Description
LO1	Apply statistical principles, theories and methods and appreciate how they apply in a range of business decision making situations.
LO2	Recognise and evaluate different types of data and their appropriateness in a range of scenarios.
LO3	Graphically tabulate, summarise and present information in a useful and informative manner suitable for presentation to senior management teams.
LO4	Describe key probability concepts and their application within real world context and hence select and apply probability distributions to utilise within various scenarios and compute probabilities based on practical situations using the, Normal and Binomial distributions.
LO5	Define a sampling distribution of the sample mean and apply the Central Limit theorem in the development of inferences about the population.
LO6	Synthesise, evaluate and interpret relationships between two variables through the use of correlation and regression analysis.
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			
The Role of Statistics in Finance (Week 1) • Definition and Role of Statistics • Descriptive versus Inferential Statistics • Primary and Secondary Data • Scales of Measurement			
Describing Data: Frequency Tables & Graphics (Week 2-3) • Frequency Data & Frequency Tables • Graphical Representation of Data: o Bar Charts o Pie Charts o Stem and Leaf Plots o Histograms o Scatter Plots			
Describing Data: Measures of Central Tendency (Week 4) • Mean: Arithmetic versus Geometric • Mode • Median • Calculating the mean of a portfolio			
Describing Data: Measures of Dispersion (Week 5-6) • Range • Mean Absolute Deviation • Variance & Standard Deviation • Skewness • Kurtosis • Calculating the variance and standard deviation of a two stock portfolio • Relationship between risk and return			
Probability (Week 7-8) • The role of probability in financial markets • Approaches to assigning probability • Addition and Multiplication Rule • Conditional Probability: Bayes Theorem, Probability Trees			
Probability Distributions (Week 9) • Normal distribution • Binomial Distribution			
Collecting Data (Week 10-12) • Sampling Methods • Sampling Error • Sampling Distribution of the Sample Mean • Central Limit Theorem			
Correlation & Regression (Week 13) • Correlation Coefficient • Calculating the covariance and correlation between two securities • Coefficient of Determination • Introduction to Regression Analysis			
Assessment Breakdown			%
Coursework			100.00%
Assessments			
Full Time			
Coursework			
Assessment Type:	Project	% of total:	50
Assessment Date:	n/a	Outcome addressed:	3,4,6
Non-Marked:	No		
Assessment Description: Learners will be presented with a financial or economic data set and/or case study. Learners will be expected to summarise the data graphically and statistically and must undertake a number of prescribed tests on the data. A number of questions will be presented to the learner and they will be expected to evaluate, combine and synthesise the information and develop and present a detailed report of the findings. Students may be required to undertake a formal presentation defending their findings.			
Assessment Type:	Assignment	% of total:	50
Assessment Date:	n/a	Outcome addressed:	1,2,3,4,5,6
Non-Marked:	No		
Assessment Description: Learners will be given two in class assessments worth 25% each The in class assessments may include a mix of: short answer questions, multiple choice, vignettes and or problem based questions. All questions presented to students will be within the context of financial services and its attendant fields.			
No End of Module Assessment			
No Workplace Assessment			
Reassessment Requirement			
Repeat examination <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>			

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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
Lab	No Description	4	Every Week	4.00
Independent Learning Time	No Description	198	Once per semester	16.50
Total Weekly Contact Hours				4.00
Workload: Part Time				
Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lab	No Description	4	Every Week	4.00
Independent Learning Time	No Description	198	Once per semester	16.50
Total Weekly Contact Hours				4.00

Module Resources	
<i>Recommended Book Resources</i>	
Lind D.A., Marchal W.G., and Wathen S.A.. (2015), <i>Statistical Techniques in Business and Economics</i>, 16th. McGraw Hill. Koop G.. (2013), <i>Analysis of Economic Data</i>, Wiley Publications.	
<i>Supplementary Book Resources</i>	
De Fusco R.A., Pinto J.E., Runkle D.E., and McLeavey D.W. (2007), <i>Quantitative Methods for Investment Analysis</i>, Wiley (CFA Institute). Moore, D.S., Notz, W.I., and Fligner, M.A. (2015), <i>The Basic Practice of Statistics</i>, 7th ed. Macmillan Education. Alexander, C.. (2008), <i>Market Risk Analysis Quantitative Methods in Finance</i>, Wiley.	
<i>This module does not have any article/paper resources</i>	
<i>Other Resources</i>	
[Website], http://epp.eurostat.ec.europa.eu/. [Website], http://www.ecb.int/home/html/index.en.html. [Website], www.cso.ie. [Website], www.bloomberg.com. [Website], www.reuters.com.	
Discussion Note:	