

MATH C1503: Mathematics and Statistics I

Module Title	:	Mathematics and Statistics I		
Language of	f Instruction:	English		
Credits:	5	•		
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NFQ Level:	6			
Module Deli	vered In	2 programme(s)		
Teaching & Strategies:	Learning	Lectures, Tutorials and Private study		
Module Aim	:	The aim of the module is to develop further students' mathematical and statistical skills and reasoning and to enable them to apply these skills to engineering applications.		
Learning Ou	itcomes			
On successfu	ul completion c	f this module the learner should be able to:		
LO1	Describe bas	escribe basic concepts in statistics.		
LO2	Apply statistic	ply statistical skills to explore data numerically and graphically.		
LO3	Calculate probabilities.			
LO4	Interpret and apply probability distribution functions to appropriate experiments.			
Pre-requisit	e learning			
Module Rec This is prior I	ommendation earning (or a p	s ractical skill) that is recommended before enrolment in this module.		
No recomme	ndations listed			
Incompatible	e Modules odules which h	ave learning outcomes that are too similar to the learning outcomes of this module.		
No incompati	ible modules lis	sted		
Co-requisite	Modules			
No Co-requis	ite modules lis	ted		
Requiremen This is prior l	ts earning (or a p	ractical skill) that is mandatory before enrolment in this module is allowed.		
No requireme	ents listed			



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Module Content & Assessment

Indicative Content

Statistics (15 hours lectures)

(a) Calculations of the correlation coefficient, rank order correlation coefficient and the regression line equation. Plotting scatter points and the regression line, Interpolating and extrapolating using the equation and or the regression line. Using Excel to generate regression lines and correlation data. (b) Draw and interpret the shape of histograms, ogives and boxplots. Calculate and interpret the variance and standard deviation.

Probability (21 hours lectures) (a) Use the laws of probability. Interpret contingency tables. Calculate conditional probability. (b) Describe Normal, Binomial and Poisson distributions and determine probabilities for appropriate experiments/events using them as an appropriate model.

Assessment Breakdown	%
Continuous Assessment	40.00%
End of Module Formal Examination	60.00%

Continuous Asses	ntinuous Assessment				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date	
Short Answer Questions	Short answer homework questions and supporting videos that enable students to practice and consolidate mathematical concepts	1,2,3,4	20.00	n/a	
Examination	2 x Class examinations covering questions from the material covered.	1,2,3,4	20.00	n/a	

No Project

No Practical End of Module Formal Examination Assessment Type Assessment Description Outcome % of Assessment Date addressed total Formal Exam No Description 1,2,3,4 60.00 End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



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Module Workload

Workload: Full Time		
Workload Type	Frequency	Average Weekly Learner Workload
Lecture	Every Week	3.00
Estimated Learner Hours	Every Week	3.00
	Total Hours	6.00

Module Delivered In					
Programme Code	Programme	Semester	Delivery		
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering	1	Mandatory		
CW_CMCIV_D	Bachelor of Engineering in Civil Engineering	3	Mandatory		