

Module Title:	Mathematics and Statistics I
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	2 programme(s)
Teaching & Learning Strategies:	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 Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Describe basic concepts in statistics.
LO2	Apply statistical skills to explore data numerically and graphically.
LO3	Calculate probabilities.
LO4	Interpret and apply probability distribution functions to appropriate experiments.
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

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 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 addressed	% of total	Assessment Date
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

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
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