MATH C2502: Mathematics and Statistics II

Module Title:	Mathematics and Statistics II
Language of Instruction:	English

Credits:	5

NFQ Level:	7

Module Delivered In	2 programme(s)

Teaching & Learning Strategies:	Lectures, private study

Module Aim:	The aim of the module is to develop students' mathematical and statistical skills and reasoning so that they can apply these skills to engineering applications.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Use vector methods to solve simple problems involving forces and motion.
LO2	Use Gaussian elimination to solve sets of linear equations.
LO3	Assess the reliability of estimates of means from sample data.
LO4	Construct and interpret hypothesis tests for sample data.

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is recommended before enrolment in this module.*
No recommendations listed
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*
No requirements listed

MATH C2502: Mathematics and Statistics II

Module Content & Assessment

Indicative Content
Probability and statistics (a) Review of the normal distribution probabilities (b) Sampling and sampling distributions (c) Confidence intervals and confidence limits for the mean (b) Hypothesis tests for the mean and the difference between two means (e) Chi-square goodness-of-fit test.
Introduction to vectors (a) Definition of vectors and scalars (b) Vector algebra (c) Cartesian component vectors (d) Applications involving forces and motion.
Matrix methods (a) Review of matrix algebra (b) Solving systems of linear equations using Gaussian and Gauss-Jordan elimination (d) Engineering applications.

Assessment Breakdown	%
Continuous Assessment	50.00%
End of Module Formal Examination	50.00%

Continuous Assessment

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Short Answer Questions	Quiz questions	1,2,3,4	20.00	Ongoing
Examination	Class test	1,2	15.00	Week 6
Examination	Class test	3,4	15.00	Week 11

No Project

No Practical

End of Module Formal Examination

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	End of module examination	1,2,3,4	50.00	End-of-Semester

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

MATH C2502: Mathematics and Statistics II

Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	12 Weeks per Stage	4.00
Estimated Learner Hours	15 Weeks per Stage	6.00
	Total Hours	138.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering	3	Mandatory
CW_CMCIV_D	Bachelor of Engineering in Civil Engineering	5	Mandatory