Module Title:	Mathematics 2
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	8 programme(s)

Teaching & Learning Strategies:	The students will be organized into lectures and be given two lectures a week in order to cover module content items 1 and 2 inclusive. During these lectures the students will be encouraged to be active. They will be given activities to attempt, during the lecture, in order to re-enforce the learning and understanding achieved through the lecturer's introduction. The students will be then given take home activity sheets in order to be able to continue practicing the techniques. The students will be allocated a one hour tutor supervised computer laboratory session every week. In this session the students will be guided and supported through a Computer Assisted Learning (CAL) package which will cover module content items 3 The learning here will be self-paced and guided and supported by the tutor. The package will be available for student use outside their scheduled laboratory time.

Module Aim:	This module aims to provide students with a broad and solid foundation in mathematical concepts and techniques that they may encounter in subsequent programme modules.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Carry out calculations involving trigonometric functions using a calculator and solve right angled and non right angled triangles. Describe and execute the elementary vector operations in two dimensions.
LO2	Execute the elementary Matrix operations and identify the inverse Matrix relationship and use Matrices to implement two dimensional rotations .
LO3	Laboratory work using online software

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	

Module Content & Assessment

Indicative Content
Trigonometry Converting from degrees to Radians and Radians to degrees. Understanding and using Trigonometric ratios and their inverses to solve unknown values in a triangle., Using Pythagoras's Theorem in Right angled triangles. Solve non-right angled triangles using Sine Rule and Cosine Rule. Finding the area of a triangle.
Vectors Addition of vectors in two dimensions. Scalar multiplication and scalar product in two and three dimensions. Using Graphical representations of vectors in two dimensions. Finding angles between vectors.
Matrices Identifying the dimensions of a matrix. Addition of matrices. Multiplication of matrices. Transposing a matrix. Finding the inverses of 2x2 and 3x3 matrices. Calculating determinants of 2x2 and 3x3 matrices. Using Cramer's Rule to solve a system of 2 linear equations with 3 unknown variables.

Assessment Breakdown	%
Continuous Assessment	20.00%
Practical	30.00%
End of Module Formal Examination	50.00%

Continuous Assessment				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Examination	n/a	1,2	20.00	n/a

No Project

Practical				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	n/a	3	30.00	n/a

End of Module Formal Examination				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	Final Exam	1,2	50.00	End-of-Semester

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

Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	12 Weeks per Stage	2.00
Laboratory	12 Weeks per Stage	1.00
Estimated Learner Hours	15 Weeks per Stage	5.93
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_KWCCD_B	Bachelor of Science (Honours) in Creative Computing and Digital Innovation	2	Mandatory
CW_KCCYB_B	Bachelor of Science (Honours) in Cyber Crime and IT Security	2	Mandatory
CW_KCCIT_B	Bachelor of Science (Honours) in Information Technology Management	2	Mandatory
CW_KCSOF_B	Bachelor of Science (Honours) in Software Development	2	Mandatory
CW_KCCYB_D	Bachelor of Science in Cybercrime and IT Security	2	Mandatory
CW_KCCSY_D	Bachelor of Science in Information Technology Management	2	Mandatory
CW_KCSOF_D	Bachelor of Science in Software Development	2	Mandatory
CW_KCCOM_C	Higher Certificate in Science in Computing Programming	2	Mandatory