MATH C1608: Engineering Mathematics 2

Module Title:	Engineering Mathematics 2
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	9 programme(s)

Teaching & Learning Strategies:	A series of lectures, tutorials, class-based tasks, and laboratory exercises will be used. The Institute VLE will be used to interactively communicate with students. Computational software will be used to re-enforce the mathematical principles and practices.

Module Aim:	To give the students the understanding, competencies and skills necessary to support the mathematical procedures encountered in the other modules of this programme.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Apply trigonometric ratios to solve triangles and implement theorems in geometry to solve various geometric shapes.
LO2	Use vector operations and apply them in an engineering context.
LO3	Solve logarithmic equations.
LO4	Perform algebraic manipulation with complex numbers.
LO5	Perform mathematical computations of cross module context using computer applications.

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

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Module Content & Assessment

Indicative Content
Trigonometry and Geometry Trigonometric ratios, triangles, degree and radian measures, sine and cosine rules, and various waveforms.
Vectors Magnitude, angles and mathematical operations
Logarithms Laws of logs and log equations, exponential function and its engineering applications.
Complex numbers Arithmetic operations, graphical representation and cartesian and polar form.
Computer Application Use computer applications to solve engineering problems, plot graphs and perform mathematical computations.

Assessment Breakdown	%
Continuous Assessment	70.00%
Practical	30.00%

Continuous Assessment				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Examination	Several in-class and/or online tests.	1,2,3,4	70.00	Ongoing

No Project

Practical				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	Several in-class and/or online tests.	1,2,3,4,5	30.00	Every Week

No End of Module Formal Examination

Continuous Assessment				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Examination	Several in-class and/or online tests.	1,2,3,4	70.00	Ongoing

No Project

Practical				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	Several in-class and/or online tests.	1,2,3,4,5	30.00	Every Week

No End of Module Formal Examination

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	12 Weeks per Stage	3.00
Practicals	12 Weeks per Stage	2.00
Independent Learning	15 Weeks per Stage	4.33
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EEAER_B	Bachelor of Engineering (Honours) in Aerospace Engineering	2	Mandatory
CW_EFARG_B	Bachelor of Engineering (Honours) in Agricultural Systems Engineering	2	Mandatory
CW_EMMEC_B	Bachelor of Engineering (Honours) in Mechanical Engineering	2	Mandatory
CW_EEROB_B	Bachelor of Engineering (Honours) in Robotics and Automated Systems	2	Mandatory
CW_EFARG_D	Bachelor of Engineering in Agricultural Systems Engineering	2	Mandatory
CW_EEACS_D	Bachelor of Engineering in Aircraft Systems	2	Mandatory
CW_EEMEC_D	Bachelor of Engineering in Mechanical Engineering	2	Mandatory
CW_EEROO_D	Bachelor of Engineering in Robotics and Automated Systems	2	Mandatory
CW_EEPLT_D	Bachelor of Science in Pilot Studies	2	Mandatory