

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	
<i>On successful completion of this module the learner should be able to:</i>	
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 <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

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

Module Workload

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