

Module Title:	Engineering Mathematics 2
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	3 programme(s)
Teaching & Learning Strategies:	(a) A series of lectures will be delivered using whiteboard and data projector. (b) The Institute Managed Learning Environment will be used to interactively communicate with students e.g. on-line test, discussion forums, reference information (c) Mathematical software (e.g. Matlab) will be used by students to re-enforce the mathematical principles and practices
Module Aim:	To give the students the knowledge, competencies and skills necessary to support the mathematical procedures encountered in the other modules of this course.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Demonstrate a competence in differentiating a variety single variable and multi variable functions.
LO2	Apply differentiation to a range of real problems in Engineering.
LO3	Demonstrate a competence in integrating a variety of functions and solve simple first order differential equations.
LO4	Apply integration to a range of real problems in Engineering.
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>	
Mathematics 1" or equivalent	

Module Content & Assessment
Indicative Content
(b) Integration

The integral as an anti-derivative. Integration of basic functions by rule. Integration of functions using the special methods of partial fractions, algebraic substitutions and integration by parts. Areas under curves, average and RMS values using the definite integral. Application of integration to areas of engineering

(a) Differentiation

First principles, differentiation as rate of change and slope of a tangent. Basic, product, quotient and chain rules. Applications of derivative to engineering.

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
Case Studies	n/a	1,2,3,4	40.00	n/a

No Project

No Practical

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	n/a	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
Independent Learning	Every Week	4.00
Total Hours		7.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EEBEE_B	<u>Bachelor of Engineering (Honours) in Biomedical Electronics</u>	4	Mandatory
CW_EESYS_B	<u>Bachelor of Engineering (Honours) in Electronic Engineering</u>	4	Mandatory
CW_EEBEE_D	<u>Bachelor of Engineering in Biomedical Electronics</u>	4	Mandatory