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	
On successful completion of this module the learner should be able to:	
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 *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.*
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		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
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	[Bachelor of Engineering (Honours) in Biomedical Electronics](#)	4	Mandatory
CW_EESYS_B	[Bachelor of Engineering (Honours) in Electronic Engineering](#)	4	Mandatory
CW_EEBEE_D	[Bachelor of Engineering in Biomedical Electronics](#)	4	Mandatory

CW_EEBEE_B	[Bachelor of Engineering (Honours) in Biomedical Electronics](#)	4	Mandatory
CW_EESYS_B	[Bachelor of Engineering (Honours) in Electronic Engineering](#)	4	Mandatory