MATH C3604: Engineering Mathematics 3

Module Title:	Engineering Mathematics 3
Language of Instruction:	English

Credits:	5

NFQ Level:	7

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 Virtual Learning Environment (VLE) will be used to interactively communicate with students e.g. on-line test, discussion forums, reference information

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	Solve Second order differential equations.
LO2	Solve initial value problems through the application of Laplace transforms.
LO3	Analyse periodic waveforms through the application of Fourier series.

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 2 or equivalent

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Module Content & Assessment

Indicative Content
A.Differential Equations Solve second order homogeneous and non-homogeneous differential equations.
B.Fourier Series Recognise periodic functions. Even and odd functions. Be able to obtain the Fourier Series of a periodic function. Derive half-range sine and cosine series
C.Laplace Transforms Find the Laplace Transform of standard functions. Find inverse Laplace Transforms. Find the Laplace Transform of derivatives and use Laplace Transforms to solve IVP's.

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*
Examination	A number of CA's will be evenly spaced throughout the Semester to allow timely feedback to be provided".	1,2,3	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	Each student will sit a formal written examination at the end of the module for which 60% will be awarded.	1,2,3	60.00	End-of-Semester

Continuous Assessment				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Examination	A number of CA's will be evenly spaced throughout the Semester to allow timely feedback to be provided".	1,2,3	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	Each student will sit a formal written examination at the end of the module for which 60% will be awarded.	1,2,3	60.00	End-of-Semester

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	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	5	Mandatory
CW_EESYS_B	Bachelor of Engineering (Honours) in Electronic Engineering	5	Mandatory
CW_EEBEE_D	Bachelor of Engineering in Biomedical Electronics	5	Mandatory