SYST C4601: Signals and Systems 1

Module Title:	Signals and Systems 1
Language of Instruction:	English

Credits:	5

NFQ Level:	8

Module Delivered In	2 programme(s)

Teaching & Learning Strategies:	Lectures and Laboratory Practicals using software simulation tools

Module Aim:	To introduce the students to the mathematical methods and tools to analyse signals and systems in the time and frequency domains with application to engineering problems

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Understand and analyse signals
LO2	Specify signal processing requirements
LO3	Apply signal processing techniques
LO4	Analyse a system and predict its performance
LO5	Examine a system in terms of stability

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
Introduction Overview of signal processing analog and digital
Signals and Frequency Content Phasors, Frequency content of signals, Audio signals and other examples
Signal Conversions Signal converters including ADC and DAC Applications Resolution The Sampling Theorem
Signal Processes Overview of signal processing applications
Difference Equations Recursive and non recursive equations

Assessment Breakdown	%
Continuous Assessment	20.00%
Practical	20.00%
End of Module Formal Examination	60.00%

Continuous Assessment

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Short Answer Questions	Class tests	1,3,4,5	20.00	n/a

No Project

Practical

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	A program of experiments will be carried out based on material covered on the course.. Assignments will be given to the students on aspects of signal processing during the module.	1,3,4,5	20.00	n/a

End of Module Formal Examination

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	Formal Exam at the end of the Semester	1,2,3,4,5	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
Laboratory	Every Week	2.00
Independent Learning Time	Every Week	2.00
	Total Hours	7.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EEBEE_B	Bachelor of Engineering (Honours) in Biomedical Electronics	7	Mandatory
CW_EESYS_B	Bachelor of Engineering (Honours) in Electronic Engineering	7	Mandatory