

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

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
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	<u>Bachelor of Engineering (Honours) in Biomedical Electronics</u>	7	Mandatory
CW_EESYS_B	<u>Bachelor of Engineering (Honours) in Electronic Engineering</u>	7	Mandatory