

Module specification

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Module Code	ENG447
Module Title	Electronics A
Level	4
Credit value	10
Faculty	FAST
HECoS Code	100165
Cost Code	GAME
Pre-requisite module	None

Programmes in which module to be offered

Programme title	Core/Optional/Standalone
HNC Electrical & Electronic Technology	Core

Breakdown of module hours

Learning and teaching hours	30 hrs
Placement tutor support hours	0 hrs
Supervised learning hours e.g. practical classes, workshops	0 hrs
Project supervision hours	0 hrs
Active learning and teaching hours total	30 hrs
Placement hours	0 hrs
Guided independent study hours	70 hrs
Module duration (Total hours)	100 hrs

Module aims

To develop knowledge and understanding of analogue electronics enabling signals, noise and amplification.

Module Learning Outcomes

At the end of this module, students will be able to:

1	Define the principles of circuit operation for a range of circuits, including discrete-component and integrated-circuit amplifiers
2	Analyse the operation of a sample of practical circuits, including the effects of noise, feedback and non-linearity
3	Evaluate circuit performance using calculations, simulation and practical testing (depending upon local requirements).

Assessment

Indicative Assessment Tasks:

Assessment is 100% in-course. This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

Assessment 1: Outcomes 1 and 2 would be assessed using an in-class test based on a knowledge obtained in the course of studying analogue electronics.

Assessment 2: Outcomes 3 would be assessed using a short report produced by student based on software simulation and practical exercises.

Assessment number	Learning Outcomes to be met	Type of assessment	Duration/Word Count	Weighting (%)	Alternative assessment, if applicable
1	1,2	In-class test	1hr	50%	
2	3	Practical	1000 words	50%	

Derogations

None

Learning and Teaching Strategies

The module will be presented to students through a specified series of lectures assisted by notes via VLE platform. Lectures will deliver key concepts, ideas, theories and examples. Investigation and guided practical activity will assist to achieve learning outcomes. Also learners will become familiar with the current software packages and implement use of same.

Welsh Elements

This module will be delivered through the medium of English; however, students have the option to submit their assessments in the medium of Welsh. While this module is not currently offered fully through Welsh, Welsh language support and guidance are available, and some learning materials or tutorial discussions may incorporate Welsh elements where appropriate.

Indicative Syllabus Outline

Sources of signal and noise.

Design parameters of different amplifier types; Class A, AB, B & C.

Modes of operation: Common Base, Common Emitter, Common Collector, and FET equivalents.

Use of software packages for circuit simulation.

Indicative Bibliography

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads:

Hughes, E. (2016) Electrical and Electronic Technology. 12th ed. Pearson.

Other indicative reading:

N/A

Administrative Information

For office use only	
Initial approval date	August 2016
With effect from date	September 2021
Date and details of revision	6 July 2021, revalidated. 05/05/2026 updated to new template and changed from optional to core during re-validation.
Version number	3