



MODULE SPECIFICATION

Part 1: Information			
Module Title	Electrical and Electronic Principles A		
Module Code	UFMFP8-15-1	Level	Level 4
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Contributes towards	Electronic Engineering [Sep][SW][Frenchay][5yrs] MEng 2018-19 Electrical and Electronic Engineering [Sep][SW][Northshore][5yrs] MEng 2018-19 Electronic Engineering (Nuclear) [Sep][FT][Frenchay][5yrs] BEng (Hons) 2018-19 Mechatronics (Apprenticeship) [Sep][PT][UCW][3yrs] FdSc 2018-19 Electrical and Electronic Engineering [Sep][SW][Frenchay][5yrs] MEng 2018-19 Mechatronics [Sep][PT][BTC][3yrs] FdSc 2018-19 Mechatronics [Sep][PT][GlosColl][3yrs] FdSc 2018-19		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: See Learning Outcomes.

In addition, the educational experience may explore, develop, and practise but not formally discretely assess the following:

Handling simulation software such as multiSIM and MATLAB

Awareness of professional learning

Outline Syllabus: Basic Components of Electronic Circuits

Resistors, capacitors, capacitive, inductors, all semiconducting devices

Resistive circuits: Kirchhoff's laws. Thevenins and Norton's theories, mesh analysis, Millman theorem, principle of superposition.

Signal parameters and their types

Class-A and class-B amplifier,

Operational Amplifiers

Active Filters: Op amps use in active filter, as an integrator and differentiator, as a comparator and as an oscillator.

Passive filters: RC, RL and RLC circuit response, analysis and use of RLC circuits, oscillators

The Cartesian and polar representation of voltage, current and impedance

Power supplies and measurement instruments

Teaching and Learning Methods: The module delivers material on basic principles of electrical and electronic engineering. Concepts and the scope of a topic will be introduced in lectures. These will be supported by directed reading and simulation laboratory based work. Tutorial exercises will provide students confidence in applying the concepts and analysing and designing the simple electrical and electronic circuits. The labs sessions will enhance the understanding of students of real-world applications of the material delivered in the module. The students will learn through applying a variety of analysis methods, mathematical and simulation tools to simple circuits and electromagnetic systems. Relevant ethical issues will be highlighted and students will be encouraged to consider these further through directed reading.

Activity (Hours)

Contact (36)

Assimilation and skill development (66)

Undertaking Coursework (24)

Exam preparation (24)

Total (150)

STUDENT AND ACADEMIC SERVICES

Part 3: Assessment

Your achievements in the module will be assessed in two components. The first component consists of an exam and the second component comprises of logbooks submission/group assignment. You will have to pass both Component A and Component B to pass the module.

Component A consists of only one assessment, worth 50% overall. There will be an examination of two hours' duration in controlled conditions at the end of the first term.

Component B consists of two assessments, each worth 25% overall.

The coursework (referred as CW1) is in two parts; (a) a lab-based logbooks submission and (b) a group assignment. Both will carry equal marks.

Additionally, there will be opportunities for formative assessment (which does not contribute to the module mark. For example, you may be asked to give a presentation, or to compete against other group's work to assess its relative performance.

Feedback will be given on your work each week in the lab sessions.

Second Assessment Opportunity.

There will be an exam for component A. In component B, there will be an individual work assignment submission. No further attendance at classes is required.

First Sit Components	Final Assessment	Element weighting	Description
Laboratory Report - Component B		25 %	Lab-based logbook submission
Group work - Component B		25 %	Group assignment
Examination - Component A	✓	50 %	Examination (2 hours)
Resit Components	Final Assessment	Element weighting	Description
Laboratory Report - Component B		50 %	Individual assignment (based on lab work) submissions
Examination - Component A	✓	50 %	Exam (2 hours)

STUDENT AND ACADEMIC SERVICES

Part 4: Teaching and Learning Methods																			
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Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/modules/ufmfp8-15-1.html</p>																		