



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Electrical and Electronic Principles B		
Module Code	UFMFVA-15-1	Level	Level 4
For implementation from	2020-21		
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		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> The module extends material on basic electrical and electronic engineering UFMFP8-15-1 Electrical and Electronic Engineering Principles (A) in terms of analysis techniques.</p> <p>In addition the educational experience may explore, develop, and practise but not formally discretely assess the following:</p> <p>Ethics related issues [not assessed formally]</p> <p>IT skills in context [not assessed formally]</p> <p>Awareness of professional learning [not assessed formally]</p> <p><b>Outline Syllabus:</b> Basic concepts of communication engineering            Basic concepts of communication networks            Transducers: Basic concepts of electrical, electronic, temperature and motion transducers            Basic understanding of open- and closed-loop controllers and systems            Simple analysis of linear systems using time and frequency domains            Electricity, Magnetism and Electromagnetic Theory: Analysis of simple electric and magnetic</p>

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fields, Electric and magnetic fields, Basic concepts of electromagnetic propagation and antennas  
 Basic quantum theory  
 Basic concepts of electrical machines and supply systems  
 A/D and D/A

**Teaching and Learning Methods:** Concepts and the scope of a topic will be introduced in lectures. These will be supported by directed reading and simulation lab based work. Tutorial exercises will provide students confidence in applying the concepts and analysing and designing the electrical and electronic circuits. The simulation 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 (such as Matlab, MultiSIM) to electromagnetic and electrical systems. Relevant ethical issues will be highlighted and students will be encouraged to consider these further through directed reading.

Activity (Approximate time, h)  
 Contact (36)  
 Assimilation and skill development (66)  
 Undertaking Coursework (24)  
 Exam preparation (24)  
 Total (150)

### 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. You will have to pass both Component A and Component B to pass the module.

First Sit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A	✓	50 %	Online Examination
Laboratory Report - Component B		50 %	Lab based logbooks submission
Resit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A	✓	50 %	Online Examination
Laboratory Report - Component B		50 %	Individual assignment (based on labwork) submissions

### Part 4: Teaching and Learning Methods

Learning Outcomes On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	Reference
Demonstrate engineering principles of communication	MO1
Analyse magnetic and electromagnetic systems	MO2
Demonstrate the working principles of transducers, actuator and sensors	MO3
Progression to independent learning	MO4
Presentation and documentation writing skills	MO5

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	Team working skills whilst tackling a significant integrated problem	MO6
Contact Hours	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	114
	<b>Total Independent Study Hours:</b>	114
	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	36
	<b>Total Scheduled Learning and Teaching Hours:</b>	36
	<b>Hours to be allocated</b>	150
	<b>Allocated Hours</b>	150
Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p><a href="https://uwe.rl.talis.com/modules/ufmfva-15-1.html">https://uwe.rl.talis.com/modules/ufmfva-15-1.html</a></p>	

**Part 5: Contributes Towards**

This module contributes towards the following programmes of study:

Electronic and Computer Engineering [Sep][PT][GlosColl][5yrs] BEng (Hons) 2019-20

Electronic and Computer Engineering {Apprenticeship} [Sep][PT][GlosColl][5yrs] BEng (Hons) 2019-20