



MODULE SPECIFICATION

Part 1: Information			
Module Title	Electronic Control Systems Design		
Module Code	UFMF8Q-30-3	Level	Level 6
For implementation from	2018-19		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Contributes towards			
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description	
<p>Educational Aims: See Learning Outcomes.</p> <p>Outline Syllabus: The topics covered in this unit are:</p> <p>Control Systems Analysis: Reliability Stability PID Control Computational Analysis and Modelling</p> <p>Control Systems Design: Programmable Interface Controllers Programmable Logic Controllers</p>	

STUDENT AND ACADEMIC SERVICES

Supervisory, Control and Data Acquisition
Data Transmission

Microprocessor Systems:
Programming Languages
Components
Constructs
Program Design

Teaching and Learning Methods: The learners will create or perturb a variety of electronic control and processing systems for practical engineering applications to enhance mathematical analysis, critical evaluation and computational skills.

This module focusses on designing and analysing control systems and how to work with microprocessors. Key areas for study are control system reliability and stability, using PLCs and looking at the workings of microprocessors, including components, programme language and program design.

Part 3: Assessment

Component A – Literature Review - 30 minutes – Learners will be given literature to read prior to the controlled assessment. During the controlled assessment learners will be given literature material to refer to prepare for a videoed interview.

Component B – Program – The learners will create a computer model (e.g., MATLAB / SIMULINK) of a control system. They will also produce a computer program (e.g., PLC, Arduino) to control an industrial system.

The resit assessment tasks for this module will involve a rework and reflective evaluation of the work carried out in the original task.

First Sit Components	Final Assessment	Element weighting	Description
Practical Skills Assessment - Component B		37 %	Control systems computer model
Practical Skills Assessment - Component B		38 %	Controller program
Examination - Component A	✓	25 %	Literature review 30 minutes
Resit Components	Final Assessment	Element weighting	Description
Practical Skills Assessment - Component B		37.5 %	Control systems computer model
Practical Skills Assessment - Component B		37.5 %	Controller program
Examination - Component A	✓	25 %	Literature review 30 minutes

STUDENT AND ACADEMIC SERVICES

Part 4: Teaching and Learning Methods		
Learning Outcomes	On successful completion of this module students will be able to:	
	Module Learning Outcomes	
	MO1 Conduct system reliability and stability analysis calculations	
	MO2 Create and evaluate computer analysis models of control systems	
	MO3 Create and evaluate computer programs for microcontroller systems	
MO4 Evaluate control methods for industrial applications		
Contact Hours	Contact Hours	
	Independent Study Hours:	
	Independent study/self-guided study	228
	Total Independent Study Hours:	228
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	72
	Total Scheduled Learning and Teaching Hours:	72
	Hours to be allocated	300
	Allocated Hours	300
	Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p>https://uwe.rl.talis.com/index.html</p>