STUDENT AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Information			
Module Title	Electromechanical Systems Engineering		
Module Code	UFMFQP-30-1	Level	Level 4
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	Mechanical Engineering with Nuclear {Apprenticeship} [Sep][PT][BTC][4yrs] BEng (Hons) 2018-19 Electromechanical Engineering (Nuclear){Apprenticeship}(Sep)[PT][BTC][3yrs] FdSc 2018-19 Electrical, Electronic and Control Engineering with Nuclear {Apprenticeship} [Sep][FT][BTC][4yrs] BEng (Hons) 2018-19		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
Educational Aims: This module will enable learners to understand and implement strategies for maintaining and integrating electromechanical sub-systems. This module will develop learners' theoretical knowledge of electromechanical systems and will give them an appreciation of the practical applications of components. Electromechanical Systems will cover the mathematical analytical skill to solve electromechanical problems. A comprehensive review of fundamental principles of electrics and electronics and measurement & instrumentation. Learners will experience different methods of system managements.

Outline Syllabus: This module will cover:

Electrics and Electronics
-Circuit Components
-Kirchhoff's Laws
-Thevenin's and Norton's Theories
-Inductive Circuits

Electromechanical Systems
-Systems Engineering
-Systems Management
-Systems Modelling

Measurement & Instrumentation
-Measurement
-Temperature Instruments
-Pressure & Flow Instruments
-Electromechanical
-Dynamic Response

In this module the following mathematical topics will be introduced and developed:

Complex Numbers
Matrix and Vector Algebra
Differential Calculus
Laplace Transform
Using Matlab
Programming Structures

Teaching and Learning Methods: See Outline Syllabus and Assessment

Part 3: Assessment

Component A – Multiple Choice Examination – 90 minutes – This will assess the learners' ability to solve electromechanical problems involving fundamental principles of electrical and mechanical components.

Component B – Written Review – Learners are required to produce a literature review of electrical components and control instrumentation and system management policies. Learners will also comment on the practical experience and whether it supports evidence found in their literature review.

The resit assessment tasks for this module will involve a rework and reflective evaluation (of 500 words on element B1) of the work carried out in the original task.

First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		75 %	Written review (2500 words)
Examination - Component A	✓	25 %	Multiple Choice Exam (90 Minutes)
Resit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		75 %	Written review (3000 words)
Examination - Component A	✓	25 %	Multiple Choice Exam (90 Minutes)

Part 4: Teaching and Learning Methods		
Learning Outcomes	On successful completion of this module students will be able to:	
		Module Learning Outcomes
	MO1	Conduct basic mathematical electromechanical engineering calculations.
	MO2	Analyse the behaviour of common electrical components.
	MO3	Explain the operation of common industrial instrumentation.
	MO4	Describe systems management policies.
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	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/index.html	