MODULE SPECIFICATION

Part 1: Information			
Module Title	Control Engineering		
Module Code	UFMFYJ-15-3	Level	Level 6
For implementation from	2019-20		
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	Engineering Mathematics 2 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: See Learning Outcomes

Outline Syllabus: System modelling (Laplace operator, transfer functions etc)
Time response of first and second order systems
Block diagram representation
Frequency response of first and second order systems
System identification
The s-plane and root loci
Controllers (PID, IP-D etc)
State Space modelling techniques
Approaches to dealing with non-linearity

Teaching and Learning Methods: Large group lecture supported by small group tutorial sessions. Study time outside of contact hours will be spent on going through exercises and example problems. Lab sessions and demonstrations will provide experience of modelling and simulation. Scheduled learning includes lectures, tutorials\lab sessions. Independent learning includes hours engaged with essential reading, assignment preparation and completion etc.

Activity Approximate time, h

Contact (36)
Directed Learning (24)
Self-directed learning (45)
Exam preparation (45)
Total (150)

Part 3: Assessment			
Component A Assessed via end of semester Exam. Formative assessments (not contributing to module mark) is provided via support in tutorial sessions. End of semester exam is three hours.			
First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Examination - Component A	✓	100 %	End of semester exam - 3 hours (controlled conditions)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Examination - Component A	✓	100 %	Examination 3 hours

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 knowledge of scientific principles and methods necessary to underpin their education in mechanical and related engineering disciplines, to enable appreciation of its scientific and engineering context and to support their understanding of future developments and technologies.	MO1
Demonstrate knowledge of mathematical principles necessary to underpin their education in mechanical and related engineering disciplines and to enable them to apply mathematical methods, tools and notations proficiently in the analysis and solution of engineering problems.	MO2
Apply and integrate knowledge of other engineering disciplines to support the study of mechanical and related engineering disciplines.	MO3
Use engineering principles and apply them to analyse key engineering processes	MO4
Identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques	MO5

Contact Hours

Independent Study Hours:

Independent study/self-guided study	114
Total Independent Study Hours:	114

	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	36
	Total Scheduled Learning and Teaching Hours:	36
	Hours to be allocated	150
	Allocated Hours	150
Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/modules/ufmfyj-15-3.html	

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Mechanical Engineering (Mechatronics) {Top-Up} [Sep][FT][AustonSingapore][1yr] BEng (Hons) 2019-20

Mechanical Engineering (Mechatronics) {Top-Up} [Feb][FT][AustonSingapore][1yr] BEng (Hons) 2019-20

Mechanical Engineering (Mechatronics) {Top-Up} [May][FT][AustonSingapore][1yr] BEng (Hons) 2019-20

Mechanical Engineering (Mechatronics) {Top-Up} [Sep][FT][AustonSriLanka][1yr] BEng (Hons) 2019-20

Mechanical Engineering (Mechatronics) {Top-Up} [Feb][FT][AustonSriLanka][1yr] BEng (Hons) 2019-20

Mechanical Engineering (Mechatronics) {Top-Up} [May][FT][AustonSriLanka][1yr] BEng (Hons) 2019-20