

Module code	TM-3304		
Module Title	Mechatronics		
Degree/Diploma	Bachelor of Engineering (Manufacturing Systems)		
Type of Module	Major Option		
Modular Credits	4	Total student Workload	8 hours/week
		Contact hours	4 hours/week
Prerequisite	None		
Anti-requisite	None		
Aims			
The module aims to expose students to a mix of skills in mechanical engineering, electronics and computing which is necessary for them to be able to comprehend and design mechatronics systems.			
Learning Outcomes			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	30%	<ul style="list-style-type: none"> - describe the different functions of mechatronics systems and sub-systems - comprehend functions such as specialised analogue and digital electronics circuits, and their applications in mechatronics systems and sub-systems 	
Middle order :	30%	<ul style="list-style-type: none"> - apply engineering concepts of mechatronics to real world applications - analyse the specialised analogue and digital electronics circuits in the sub-systems 	
Higher order:	40%	<ul style="list-style-type: none"> - solve complex mechatronics engineering problems through the selection of appropriate and viable mechatronics sub-systems approaches - work cooperatively in groups when reviewing case studies 	
Module Contents			
<ul style="list-style-type: none"> - Overview to different types of Mechatronics systems - Sensors and transducers - Signal conditioning in the context of systems engineering - Data presentation systems - Different types of actuations - Systems Model Architecture - System transfer functions - Frequency response - Closed-loop controllers - Digital logics design - Microprocessors and their applications 			
Assessment	Formative assessment	Monthly online quizzes will be used to test and to give feedback for their learning	
	Summative assessment	Examination: 40% Coursework: 60% <ul style="list-style-type: none"> - 2 class tests (15% each) - 2 group laboratory reports (15% each) 	