

Module code	TG-2302		
Module Title	Engineering Mechanics		
Degree/Diploma	Bachelor of Engineering Degree		
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			
<p>This module aims to provide students with a working knowledge of engineering mechanics. This is an advanced mechanics module for all engineering majors. Upon successful completion of the module, the students will have an improved conceptual understanding of the mechanical properties of materials. The students will also be able to apply this knowledge to analyse engineering structures and understand the application of the mechanical properties.</p>			
Learning Outcomes:			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	40%	<ul style="list-style-type: none"> - understand and apply the definitions of stress (normal and shear), strain and deformation - understand and use the definition of mechanical properties including: modulus of elasticity, shear modulus, Poisson's ratio 	
Middle order :	40%	<ul style="list-style-type: none"> - solve problems of equilibrium of particles and rigid bodies with emphasis on two-dimensional equilibrium - analyse engineering structures including: trusses (method of joints, method of sections, zero force members), frames, and machines - determine internal forces in beams including shear and bending moment diagrams, critical points (maximum shear and maximum bending moment) and their role in engineering design 	
Higher order:	20%	<ul style="list-style-type: none"> - use a spreadsheet to solve problems related to mechanics of solids - perform simplified design calculations to determine the size, load, or mechanical property required to meet a specified design criterion (e.g. maximum allowable stress) 	
Module Contents			
<ul style="list-style-type: none"> - Concurrent Force Systems - Equilibrium of a Particle - Stress, Strain & Deformation - Axial Loading - Equivalent Force / Moment Systems - Equilibrium of Rigid Bodies - Trusses, Frames, and Machines - Flexural Loading: Stresses in Beams - Beam Deflection - Torsional Loading: Shafts - Combined Static Loading 			
Assessment	Formative assessment	Online multiple choice questions will be used to test and give feedback on their learning	
	Summative assessment	Examination: 60%	
		Coursework: 40% <ul style="list-style-type: none"> - 2 online tests (10% each) - 4 laboratory assignments (5% each) 	