

MODULE DESCRIPTOR

MODULE TITLE	MECHANICS		
MODULE CODE	AP1842 (L4)	CREDIT VALUE	20 CREDITS (10 ECTS)
CAMPUS	UCLAN CYPRUS		
SCHOOL	SCHOOL OF SCIENCE		

MODULE AIMS

To provide a basic introduction to Mechanics including the presentation of Newton's laws of motion and the application of these, and their consequences, to simple configurations.

MODULE CONTENT

Units, dimensions
 Kinematics in one and two dimension
 Forces
 Work and power
 Energy
 Impulse and momentum
 Dynamics, Newton's Laws of motion
 Interactions
 First order dynamic behaviour: Mathematical methods and applications
 Second order dynamic behaviour: Mathematical methods and applications
 Simple Harmonic Motion
 Kinematics in two dimensions
 Oscillations & Resonance
 Rotational Motion
 Equilibrium
 Planetary orbits and Newton's gravitational law, Kepler's Laws

INTENDED LEARNING OUTCOMES

On successful completion of this module a student will be able to:	
1.	Describe and apply the concepts of mechanics.
2.	Mathematically derive certain standard results based on the laws of mechanics covered.
3.	Solve theoretical problems relating to material, including new situations.
4.	Recognise and solve various types of 1 st order differential equations, including some which require transformation to standard forms
5.	Recognise and solve 2 nd order, linear, constant coefficient differential equations.

TEACHING METHODS

The class contact will consist of lectures together with tutorials. Lectures will introduce the theory and provide examples of its application. Key elements of the learning strategy are regular worksheets in which students are encouraged to practise their Physical problem solving and mathematical techniques. These will be discussed in the tutorials.

The module will be assessed principally by examination. To facilitate and monitor the formative learning process selected questions from worksheets will be submitted (some on-line), part of these worksheets make up the coursework component of the module, The worksheets will diagnose any deficiencies students may have in their learning and skills development and will be fed back to the students. The examination at the end of the year will provide practice in solving problems under exam conditions.

ASSESSMENT METHODS

The module is assessed through a Portfolio of assessment questions and an examination.