

Module Details	
Module Title	Foundation Mechanics
Module Code	MAE3001-B
Academic Year	2022/3
Credits	20
School	Department of Mechanical and Energy Systems Engineering
FHEQ Level	RQF Level 3

Contact Hours	
Type	Hours
Laboratories	9
Lectures	42
Tutorials	21
Directed Study	128

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims
To develop the basic skills of statics, kinematics and dynamics and apply them to engineering problems.

Outline Syllabus
Vectors: Basic algebra, components. Concept of force: Resultant, equilibrant. Concurrent forces: 3 force systems. Moment of a force: Couples, principle of moments. Coplanar and parallel forces: Implications. Friction: Static friction. Hydrostatics: Hydrostatic pressure. Displacement, velocity, constant acceleration. Circular motion: angular measure, angular frequency, angular acceleration. Kinetics: force, mass, momentum. Newton's Laws of Motion. Work/energy equation. Power. Impulse/momentum equation.

Learning Outcomes	
Outcome Number	Description
01	1.1 Apply scalar and vector algebra to the principles of statics. 1.2 Become familiar with principles of kinematics and the laws of motion associated with one and two dimensional motion of objects.
02	2.1 Apply the principles of statics to problems set in an engineering context and notation. 2.2 Apply the principles of dynamics to problems set in an engineering context and notation.
03	3.1 Manage, present and interpret data. 3.2 Solve problems systematically using the scientific method. 3.3 Communicate technical information in a concise manner. 3.4 Work as part of a team.

Learning, Teaching and Assessment Strategy
Online lectures, interactive on campus laboratory-based teaching and tutorials

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Examination - Closed Book	Examination (1.5 Hrs)	40%
Summative	Examination - Closed Book	Examination (1.5 Hrs)	40%
Summative	Coursework - Written	Written reports based on laboratory work	20%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.