UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title:	Foundation Mechanics
Module Code:	MAE3001-B
Academic Year:	2019-20
Credit Rating:	20
School:	Department of Mechanical and Energy Systems Engineering
Subject Area:	Mechanical and Automotive Engineering
FHEQ Level:	FHEQ Level 3
Pre-requisites:	
Co-requisites:	

Contact Hours	
Type	**Hours**
Lectures	48
Practical classes and workshops	10
Tutorials	24
Laboratory	6
Directed Study	121

Availability	
Occurrence	**Location / Period**
BDA	University of Bradford / Academic Year (Sept - May)

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

1	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.
2	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.
3	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

Lectures, interactive laboratory-based teaching, tutorials, laboratories.

Mode of Assessment

Type	Method	Description	Length	Weighting
Referral	Examination - closed book	Supplementary	2 hours	80%
Summative	Examination - closed book	Examination - closed book	1.5 hours	40%
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Referral	Coursework	Supplementary - resubmission of coursework.		20%
Summative	Coursework	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.