

Liverpool John Moores University

Title: ENGINEERING MECHANICS
Status: Definitive
Code: **4500ICBTME** (127027)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: ICBT, Colombo

Team	Leader
Alison Cotgrave	Y

Academic Level: FHEQ4 **Credit Value:** 15 **Total Delivered Hours:** 86
Total Learning Hours: 150 **Private Study:** 64

Delivery Options

Course typically offered: Semester 1 and Summer

Component	Contact Hours
Lecture	45
Practical	18
Tutorial	15
Workshop	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Coursework (1500 words)	40	
Exam	AS2	Exam	60	2

Aims

This module introduces an extended range of mechanical principles that underpin the design and operation of mechanical engineering systems. Also it introduces approaches and techniques to determine the behavioural characteristics of engineering components and materials in machines.

Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate a comprehensive knowledge of the scientific concepts of engineering statics and dynamics.
- 2 Apply these concepts in problem solving.
- 3 Relate these concepts to practical applications.
- 4 Develop a design based on these concepts.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Essay	3	4
Exam	1	2

Outline Syllabus

Kinematics of particles and rigid bodies.

Principles of mechanical engineering systems and their applications (e.g. thermal systems, energy, fluid power systems, control systems, mechanics etc.).

Two- and three-dimensional loading.

Loaded beams.

Stresses in cylinders.

Introduction to friction clutches, belt drives, gear trains.

Plane mechanisms.

Balancing of rotating masses.

Mechanical vibrations (Underdamped, overdamped and critically damped).

Learning Activities

Students will be supported in their learning, to achieve the above learning outcomes, in the following ways:

Mechanical engineering theories, concepts and formulas related to functioning and designing of machines will be acquired through lectures, seminars, tutorials and in class group work.

Notes

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