Liverpool John Moores University

Title:	MECHANICS 1
Status:	Definitive
Code:	**3002BELEN** (101128)
Version Start Date:	01-08-2011

Owning School/Faculty: Arts, Professional and Social Studies
Teaching School/Faculty: Bellerby's College - Brighton

Team	emplid	Leader
Jarmila Hickman		Y

Academic Level:	FHEQ3	**Credit Value:**	12.00	**Total Delivered Hours:**	69.00
Total Learning Hours:	120	**Private Study:**	51		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	66.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Module Examination	100.0	3.00

Aims

To introduce the relationships between forces, linear motion and energy and the conditions for static equilibrium of a body.

Learning Outcomes

After completing the module the student should be able to:

1   Explain how mathematical models can be used to investigate physical events.
2   Distinguish between scalar and vector quantities giving physical examples.

3	Apply relationships between distance and time for linear motion.
4	Solve simple problems of relative motion.
5	Apply principles of static equilibrium including limiting equilibrium.
6	Apply relationships between work, energy and power.

Learning Outcomes of Assessments

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

EXAM   1   2   3   4   5   6

Outline Syllabus

Idea of mathematical modeling in mechanics, including terminology.

Vectors – basic properties and examples; Cartesian notation.

Kinematics including use of calculus to solve problems.

Statics including forces, friction, definition and use of simple moments, including tilting problems.

Dynamics – Newton's Law, momentum and impulse (including law of conservation).

Work, Energy and Power – problem-solving using conservation of energy law and including power.

Learning Activities

Explanatory, tutor-led lessons to small classes, regular formative homework assignments, class tests and terminal module examination.

References

Course Material	Book
Author	Hebborn, J
Publishing Year	2000
Title	Mechanics 1
Subtitle	
Edition	
Publisher	Heinemann Educational
ISBN	9780435510749

Course Material	Book
Author	Hebborn, J
Publishing Year	2000
Title	Mechanics 2
Subtitle	
Edition	
Publisher	Heinemann Educational

ISBN	9780435510756

Notes

This module applies mathematics to the solving of physical problems and helps prepare students for a first degree in Engineering subjects.