Liverpool John Moores University

Title:	INTRODUCTION TO ENGINEERING THEORY
Status:	Definitive
Code:	**3000ENG** (105559)
Version Start Date:	01-08-2016
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	Electronics and Electrical Engineering

Team	Leader
Rebecca Bartlett	Y

Academic Level:	FHEQ3	**Credit Value:**	12	**Total Delivered Hours:**	36
Total Learning Hours:	120	**Private Study:**	84		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	24
Tutorial	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	AS1	In class test (under exam conditions)	50	
Test	AS2	Computer based exercises	50	

Aims

To provide, using a basic knowledge of mathematics and physical science, an introduction to electric circuits and forces

Learning Outcomes

After completing the module the student should be able to:

1	Use the basic units of engineering science in the S.I. system to work with vector and scalar quantities
2	Apply an understanding of a simple atomic model to electrical and mechanical properties of materials
3	Analyze resistive circuits
4	Analyse simple systems of forces
5	Determine the power and energy used in simple systems

Learning Outcomes of Assessments

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

In class test	1	2	3	4	5
Computer based exercises	1	2	3	4	5

Outline Syllabus

Scientific notation for large and small numbers.
Units and dimensions: the SI system of primary and derived units
Scalars and vectors
Basic atomic theory
Introduction to electric charge
Introduction to electric circuits: definition of electric current; the ampere. Resistance, Ohm's law, electromotive force and potential difference. Series and parallel combinations of resistors. Kirchhoff's laws.
Introduction to forces. Forces acting on bodies, resolution of forces. Resultant forces. Normal force and frictional force. The relationship between mass and weight.
Work done by a force in simple systems.
Energy and power, for example in resistive circuits.

Learning Activities

Full lecture and tutorial programme

Notes

This module introduces the basic principles of engineering science.