Liverpool John Moores University

Title:	Electrical and Electronic Engineering
Status:	Definitive
Code:	**4506ENGICA** (119139)
Version Start Date:	01-08-2018
Owning School/Faculty:	Engineering
Teaching School/Faculty:	HICOM University College Sdn,Bhd

Team	Leader
Russell English	

Academic Level:	FHEQ4	**Credit Value:**	10	**Total Delivered Hours:**	54
Total Learning Hours:	100	**Private Study:**	46		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	22
Practical	8
Tutorial	22

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	AS1		50	
Exam	Exam		50	2

Aims

To introduce the essential principles of Electrical and Electronic Engineering.

Learning Outcomes

After completing the module the student should be able to:

1 Analyse DC resistive circuits
2 Recall the principles of semi-conductor devices e.g. diode and transistor.
3 Analyse simple inductive and capacitive DC and AC circuits
4 Measure electrical quantities in circuits

Learning Outcomes of Assessments

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

Laboratory & Tutorial Workbook	1	2	3	4
Examination	1	2	3	4

Outline Syllabus

Fundamental ideas, notions, concepts and relations. Ohms law, measurement of voltage, current and resistance.
Kirchhoff's current and voltage laws. Series and parallel circuits and their equivalent circuits.
Semiconductors, intrinsic, P-type and N-type. Operation and characteristics of a simple diode and transistor.
Simple electro-magnetism. Inductors, self inductance, transformer action and simple motors.
Simple inductive and capacitive circuits.
Fundamentals of alternating current, frequency, period, angular frequency. Peak, rms and instantaneous values.
Complex representation of sinusoidal quantities and phasor diagrams. Series and parallel AC circuits, RL, RC and RLC circuits.
Instrumentation sensors and measurement.

Learning Activities

A combination of Laboratories, Tutorials and Lectures

Course Material	Book
Author	Bogart T F/J S Beasley/G Rico
Publishing Year	2004
Title	Electronic Devices and Circuits
Subtitle	
Edition	6th
Publisher	Prentice Hall
ISBN	9780131111424

Course Material	Book
Author	Bird J O
Publishing Year	2010
Title	Electrical and Electronic Principles and Technology

Subtitle	
Edition	4th
Publisher	Oxford Newnes
ISBN	9780080890562

Course Material	Book
Author	Robertson C. R
Publishing Year	2008
Title	Fundamental Electrical and Electronic Principles
Subtitle	
Edition	3rd
Publisher	Butterworth heinemann
ISBN	9780750687379

Notes

This module is designed to provide an introduction to Electrical and Electronic Engineering relevant to the fields of Mechanical, Automotive and Marine Engineering. The module covers the essential concepts associated with DC and AC circuits, electromechanical systems and instrumentation.