

Liverpool John Moores University

Title: ELECTRICAL AND ELECTRONIC DESIGN
Status: Definitive
Code: **5020ENG** (106189)
Version Start Date: 01-08-2016

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: Electronics and Electrical Engineering

Team	Leader
Colin Wright	Y

Academic Level: FHEQ5
Credit Value: 12
Total Delivered Hours: 60
Total Learning Hours: 120
Private Study: 60

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Practical	48
Seminar	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Coursework:- Interim report	5	
Essay	AS2	Coursework:- Group work	10	
Essay	AS3	Coursework:- Practical work	30	
Essay	AS4	Coursework:- logbook	10	
Essay	AS5	Coursework:- Final project report	25	
Essay	AS6	Coursework:- Design week 1	10	
Essay	AS7	Coursework:- Design week 2	10	

Aims

To provide an introduction to the design process and to familiarize student with the

open ended nature of design.

Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate an understanding of the design process and methodology of design
- 2 Choose materials for electronic equipment
- 3 Design reliable and robust equipment
- 4 Present designs and products using a combination of oral and visual techniques
- 5 Write a report, technical specification and an instruction/operating manual.

Learning Outcomes of Assessments

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

CW	1	2	3	4	5
CW	1	2	3		
CW	1	2	3		
CW	1	2	3	4	
CW	1	2	3	4	5
CW	1	2	3	4	
CW	1	2	3	4	

Outline Syllabus

In the course of this project guidance will be given on the following:

- 1. Design methodology: The project must be planned considering the design overview, problem solving and project planning.*
- 2. The design should make the best use of discrete device.*
- 3. Application of appropriate prototyping method: stripboard, wire-wrap or breadboard should be use.*
- 4. Use simulation tools incorporating analogue & digital sections. The circuit will be constructed and then compared with the performance of the simulator. Any differences between the performances of the two should be fully understood.*
- 5. The use of Multisim and Ultiboard for transfer circuit diagram into printed circuit board layout will be understood*

Learning Activities

Seminars and practical laboratory base work. Student will work individually on a structured design and in teams to produce a design solution to an open-ended design problem

Notes

This module provides an introduction to electronics engineering design