

Liverpool John Moores University

Title: Design Project
Status: Definitive
Code: **5075ENG** (116922)
Version Start Date: 01-08-2018

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

Team	Leader
Ronan McMahon	Y
Colin Wright	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 108
Total Learning Hours: 200 **Private Study:** 92

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Practical	96
Seminar	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Presentation	Lab Demo		50	
Report	Project		30	
Presentation	Present		20	

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 Select an appropriate overall design to solve a problem
- 2 Work as a team member to achieve collective aims
- 3 Design and construct a component module of a higher level design
- 4 Understand the purpose and benefit of keeping an engineering log book
- 5 Write a report, technical specification and instruction/operating manual
- 6 Present designs and products using a combination of oral and visual techniques

Learning Outcomes of Assessments

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

Lab Demonstration	2	3	4
Final Project Report	1	5	
Design Week Presentation	6		

Outline Syllabus

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

Design methodology: The project must be planned considering the design overview, problem solving and project planning.

Making the best use of discrete devices.

Use of appropriate software, such as Proteus, for the schematic capture and simulation of electronic circuits.

Use of appropriate circuit prototyping using stripboard, wire-wrap or breadboard.

Transferring designs to printed circuit board (PCB). Layout and construction of PCBs.

Design and construction of physical prototypes, making use of 3D CAD modeling software and the rapid prototyping machine.

Learning Activities

Seminars and practical laboratory base work. Students will work in teams to produce a design solution to an open-ended design problem. The module also includes two "Design Weeks" where students will work "full time" on more intensive team based projects, ending in audio visual presentations to the whole class.

Notes

This module provides an introduction to electronics engineering design