Liverpool John Moores University

Title:	ENGINEERING DESIGN
Status:	Definitive
Code:	**6083ENG** (115898)
Version Start Date:	01-08-2018
Owning School/Faculty:	Maritime and Mechanical Engineering
Teaching School/Faculty:	Maritime and Mechanical Engineering

Team	Leader
Christian Matthews	Y

Academic Level:	FHEQ6	**Credit Value:**	20	**Total Delivered Hours:**	102
Total Learning Hours:	200	**Private Study:**	98		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	21
Practical	60
Tutorial	21

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Group Design Exercise 1	40	
Report	AS2	Group Design Exercise 2	30	
Report	AS3	Group Design Exercise 3	30	

Aims

This module will deliver a project based learning experience in Engineering Design. The participants will undertake a year long design project and will use a systematic design approach, to generate evaluate and specify concepts for a product or system. Their design will be a response to a set of real or supposed client requirements and constraints.

Learning Outcomes

After completing the module the student should be able to:

1	Interpret engineering system requirements and generate a design specification accordingly
2	Apply a systematic approach to the design process
3	Communicate design information and data effectively and in accordance with requirements
4	Demonstrate technical competence in a range of engineering disciplines and their application to the desigh of engineering systems
5	Create computer models of engineering systems and use them appropriately
6	Demonstrate an awareness of relevant engineering standards and legislation

Learning Outcomes of Assessments

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

Group design exercise	1	2	3	4	5
Group design exercise	2	3	4	5	6
Group design exercise	2	3	4	5	6

Outline Syllabus

1. Adherence to an established design process.
2. Introduce elements of BS7000 Design Management.
3. Design Quality: QFD, FMEA, Risk Assessment, Value Engineering, Value Analysis.
4. Human Factors: Ergonomics, Anthropometrics, User-Interfaces, Accessibility
5. Standards & Laws: ISO, BS, ANSI, EU Directives (WEEE, RoHS),
6. Intellectual Property: Copyright, Patents
7. Further applications of ISO/BS8887:2009 Design for Manufacture, Assembly, Disassembly and End-of-life processing.
8. Concurrent engineering
9. Using appropriate methods to produce a principle proving prototype (PPP) in order to validate a design.

Learning Activities

Lectures, tutorials, case studies and practical assignments.

Notes

The main parts of the syllabus will be intrinsic to the three courseworks. The three

courseworks are to be staged submissions of one year long design project.