Liverpool John Moores University

Title:	Design Project II
Status:	Definitive
Code:	**5003PDE** (120084)
Version Start Date:	01-08-2019
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	Electronics and Electrical Engineering

Team	Leader
Adam Papworth	Y

Academic Level:	FHEQ5	**Credit Value:**	20	**Total Delivered Hours:**	72
Total Learning Hours:	200	**Private Study:**	128		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	24
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Report	Research report	40	
Portfolio	Portfolio	Design portfolio	60	

Aims

Provide a directed, but independent learning experience that will prepare students for their final year design project. It is intended to allow the student to explore and investigate a topic of particular interest.

Learning Outcomes

After completing the module the student should be able to:

1 Demonstrate the ability conceive, plan and undertake a supervised, but self-generated design project.
2 Research and evaluate an established body of knowledge relevant to the project
3 Follow a recognised design process from a design brief/specification and develop a design solution from a range of ideas.
4 Generate a set of professional quality presentation materials.
5 Develop a range of models/prototypes to test, evaluate and present a design solution.

Learning Outcomes of Assessments

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

Research Report	1	2	3
Design Portfolio	4	5	

Outline Syllabus

Module introduction
Module guide; aims; learning outcomes; assessment and marking schemes. Outline syllabus; module timetable and student feedback.

The design process:
Needs recognition; problem definition stage; design research; problem statement; design brief; patent / design licence research. BS7373: Design specifications; the ideation loop; design scheme selection; embodiment design.

Design Solution:
The use of controlled convergence; Design scheme evaluation and selection techniques; Technical information; Elementary design calculations including statics, dynamics, thermal, energy and power; Identification of areas of high technical risk and associated action plan.

Conceptual design:
Sketching, mock-up models from an appropriately selected range of medium. Rapid prototyping and CNC routed models.

Embodiment design:
Product configuration and architecture. Material selection charts and other material selection considerations. Make / buy decisions. Process / production considerations. Use of adhesives. Product testing and analysis. Optimise and complete design form and definitive layout.

Form design:
Human factors / ergonomics; aesthetics; branding and styling; customisation; emotional / experience design.

Principles of good design:
User centred design; participative design; design ethnography.

Design skills:
Presenting research; report writing; sketching, presenting ideas using posters and models, preparing for a design show.

Learning Activities

This module will be delivered through an integrated series of lectures, tutorials, practical sessions, guided design activities and case studies. The learning activities are to be student focused and develop the students design knowledge through experiential learning.

Notes

This module is delivered using a variety methods including lectures, seminars, tutorials and practical sessions. The module will be delivered from a engineering and product design perspective.