Liverpool John Moores University

Title:	Mechanical Engineering Design 3
Status:	Definitive
Code:	**6503MECBHG** (128786)
Version Start Date:	01-08-2021
Owning School/Faculty:	Engineering
Teaching School/Faculty:	Beaconhouse IC Islamabad

Team	Leader
Russell English	Y

Academic Level:	FHEQ6	**Credit Value:**	20	**Total Delivered Hours:**	33
Total Learning Hours:	200	**Private Study:**	167		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	11
Tutorial	22

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Design Project	100	

Aims

This module will deliver a project based learning experience in Engineering Design. It is intended to present a practical focal point for knowledge and techniques learned in other modules as well as to continue to build on the engineering design curriculum from levels 4 and 5. Its participants will follow a systematic approach to generate detailed designs for a component or system.

Learning Outcomes

After completing the module the student should be able to:

1 Actively manage the design process and monitor progress
2 Communicate design information and data effectively.
3 Apply analytical techniques, from a range of engineering disciplines, in a design context.
4 Apply engineering knowledge and judgement to solve design problems.
5 Determine the compliance of designs relative to the relevant engineering standards.
6 Determine the cost of a proposed design based on relevant economic considerations.

Learning Outcomes of Assessments

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

Design Project	1	2	3	4	5	6

Outline Syllabus

Management of the Design Process

- *Coordination of design teams.*
- *Design project management, BS7000 Design Management.*
- *Collaborative design briefs, needs recognition and creation of effective design specifications.*
- *Concept generation and presentation.*
- *Embodiment design, layout planning, part modelling.*
- *Design for Manufacture, Bills of Process and process planning. Cost estimation and modelling.*
- *Team evaluation of ideas.*
- *Writing design reports.*

Principles of systems design

- *Application of appropriate design methodologies for complex design projects.*
- *Ensuring compliance with standards and & laws.*
- *Intellectual Property, Copyright, Patents.*
- *Further applications of ISO/BS8887:2009 Design for Manufacture, Assembly, Disassembly and End-of- life processing for multiple subsystems.*
- *Concurrent engineering.*

Learning Activities

This module will be delivered through an integrated series of lectures and tutorials. The learning activities are to be student focused and develop the students design

knowledge through experiential learning.

Notes

This module aims to equipment the student with important underpinning engineering skills.