

# Mechanical Engineering Design 3

## Module Information

2022.01, Approved

### Summary Information

Module Code	6503USST
Formal Module Title	Mechanical Engineering Design 3
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

### Partner Teaching Institution

Institution Name
University of Shanghai For Science and Technology

### Learning Methods

Learning Method Type	Hours
Lecture	11
Tutorial	22

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-PAR	PAR	January	12 Weeks

## Aims and Outcomes

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.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Actively manage the design process and monitor progress
MLO2	2	Communicate design information and data effectively.
MLO3	3	Apply analytical techniques, from a range of engineering disciplines, in a design context.
MLO4	4	Apply engineering knowledge and judgement to solve design problems.
MLO5	5	Assess the compliance of designs relative to the relevant engineering standards.
MLO6	6	Assess the cost of a proposed design based on relevant economic considerations.

## Module Content

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.
Module Overview	
Additional Information	This module aims to equip the student with important underpinning engineering skills. Completion of this module is a requirement for compliance with the Engineering Council UK Spec and accreditation of the programme by the engineering professional bodies. A student must therefore successfully complete all sections of the module to a satisfactory level.

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Design Project	100	0	MLO1, MLO2, MLO3, MLO4, MLO5, MLO6

## Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Rob Darlington	Yes	N/A

**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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