Liverpool John Moores University

Title:	Engineering Application A
Status:	Definitive
Code:	**4506MTC** (125779)
Version Start Date:	01-08-2019
Owning School/Faculty:	Maritime and Mechanical Engineering
Teaching School/Faculty:	Maritime and Mechanical Engineering

Team	Leader
Russell English	Y

Academic Level:	FHEQ4	**Credit Value:**	20	**Total Delivered Hours:**	39
Total Learning Hours:	200	**Private Study:**	161		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Online	24
Practical	8
Tutorial	7

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	AS1	CAD	20	
Report	AS2	Formal Laboratory Report/logbook	30	
Report	AS3	Report based on work based learning design project and activity diary	50	

Aims

This module aims to introduce students to a range of standard engineering practices and introduce the 'engineering design process' via a work based learning design activity.

Learning Outcomes

After completing the module the student should be able to:

1	Generate 3D CAD models and associated engineering drawings to current British Standards.
2	Execute a work based learning design project from design specification through to the production of engineering drawings using CAD.
3	Carry out an experimental procedure in a range of different engineering disciplines.
4	Process data collected during an experiment, and produce a formal written report with conclusions.

Learning Outcomes of Assessments

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

CAD	1	
Formal Laboratory Report/Logbo	3	4
Reprt WBL	2	

Outline Syllabus

The list below provides an indicative list of topics which may be covered in this module:

1. Engineering Graphics:

This block of the module will provide students with a first course in engineering graphics, and particularly engineering drawing according to current British Standards. Topics will include:

- *BS 8888:2011 (British Standard for technical product documentation & specification)*
- *Orthographic Projections and Oblique / Isometric drawing*
- *Drawing Layouts, Sections views, Dimensioning*
- *Geometric Tolerancing and Datums, Limits & Fits*
- *Generating Engineering Drawings from 3D CAD models*
- *Introduction to general Engineering Components including Shafts, Bearings, Gears, Keyways, Fasteners, Standards*

2. Experimental Methods and Practice

- *Introduction to research skills*
- *Report writing*
- *Handling experimental data*
- *Graphical representation*
- *Errors*
- *Analysis of results, and the formulation of conclusions*
- *Complete a series of experiments, keeping a logbook to record notes, measurements and observations.*

3. Engineering Design

- *Introduction to the design process*
- *Problem identification (product design specification)*
- *Creativity (concept generation/evaluation)*
- *Product design (embodiment, detail, presentation)*
- *Complete a work based learning design project from problem identification through to generation of engineering drawings.*

Learning Activities

Online lectures and tutorials, campus based tutorials and practicals, work based learning and tutorials.

Notes

This module introduces the student to Engineering Graphics, Engineering Design and Experimental Methods