Liverpool John Moores University

Title:	Design and Manufacture
Status:	Definitive
Code:	**5106SBC** (124868)
Version Start Date:	01-08-2021
Owning School/Faculty:	Engineering
Teaching School/Faculty:	The Sino-British College

Team	Leader
Tahsin Opoz	Y

Academic Level:	FHEQ5	**Credit Value:**	20	**Total Delivered Hours:**	55
Total Learning Hours:	200	**Private Study:**	145		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	11
Practical	22
Tutorial	22

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Coursework - Design (CAD) based assignment	40	
Report	AS2	Coursework - CAM/lab based assignment	60	

Aims

The aim of this module is to give students an opportunity to experience the process of carrying out a design to manufacture project. It integrates the two subject areas of computer-aided design and computer-aided manufacture (CAD/CAM).

Learning Outcomes

After completing the module the student should be able to:

1 Undertake a systematic design procedure to progress a design from the brief to a solution
2 Appraise a design solution and prepare for its manufacture
3 Use CAD/CAM systems during the design process and to prove manufacture
4 Produce components with the aid of computer assisted manufacture, to specification using safe working practices

Learning Outcomes of Assessments

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

CAD based assignment	1	2
CAM/lab assignment	3	4

Outline Syllabus

Design process: conceptual, embodiment and final design stages
Machining processes: Turning and milling, cutting tool selection, determination of machining parameters.
Applying tolerances and dimensions.
3D CAD modelling; CAD/CAM data transfer; computer assisted part programming; cutter path simulation; computer aided machining and inspection.

Learning Activities

A practical, hands-on approach to learning is adopted. Case studies of examples of the theory in practice will be provided. Tutorial sessions will be used to focus upon the theoretical aspects of the module.

Notes

The module aims to build on and apply the skills developed in the level 4 Engineering Practice module and enable students to apply a systematic approach to the design process.