

Liverpool John Moores University

Title: Computer Aided Design and Manufacture
Status: Definitive
Code: **5505ENGICA** (119156)
Version Start Date: 01-08-2018

Owning School/Faculty: Engineering
Teaching School/Faculty: HICOM University College Sdn,Bhd

Team	Leader
Russell English	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 48
Total Learning Hours: 200 **Private Study:** 152

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	12
Practical	24
Tutorial	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1		20	
Artefacts	AS3		50	
Report	AS2		30	

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:

Design report	1	
Comp asstd manufacture artifact	3	4
Design for manufacture rpt	2	3

Outline Syllabus

Design process: Design brief; specification; conceptual design and embodiment design.

Design for economic manufacture, assembly and inspection. Applying tolerances and dimensions.

3D CAD modelling; rapid prototyping; 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.

Course Material	Book
Author	McMahon C and Browne J
Publishing Year	1998
Title	CAD CAM; principles, practice and manufacturing management
Subtitle	
Edition	2nd
Publisher	Addison Wesley
ISBN	0201178197

Course Material	Book
Author	Jones L

Publishing Year	1986
Title	Introduction to Computer Numerical Control
Subtitle	
Edition	
Publisher	Longman
ISBN	9780470203378

Course Material	Book
Author	Crandell T and Gibbs D
Publishing Year	1991
Title	An Introduction to CNC Machining and Programming
Subtitle	
Edition	
Publisher	Industrial Press
ISBN	08311311879780831130

Course Material	Book
Author	Seames W
Publishing Year	2002
Title	Computer Numerical Control: Concepts and Propramming
Subtitle	
Edition	4th
Publisher	Delmar
ISBN	0766822907

Course Material	Book
Author	Rooney J and Steadman P
Publishing Year	1997
Title	Principles of Computer Aided Design
Subtitle	
Edition	
Publisher	Taylor & Francis
ISBN	1857282221

Course Material	Book
Author	Rembold U, Nnaji B O and Storr A
Publishing Year	1993
Title	Computer Integrated Manufacturing and Engineering
Subtitle	
Edition	
Publisher	Addison Wesley
ISBN	0201565416

Notes

The module provides an integrative set of activities that cross traditional subject

boundaries