Liverpool John Moores University

Title:	Computer Aided Design II
Status:	Definitive
Code:	**5004PDE** (120085)
Version Start Date:	01-08-2019

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: Electronics and Electrical Engineering

Team	Leader
Jamie Finlay	Y

Academic Level:	FHEQ5	**Credit Value:**	20	**Total Delivered Hours:**	72
Total Learning Hours:	200	**Private Study:**	128		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	24
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	CAD test	In-class CAD test	40	
Portfolio	Portfolio	CAD portfolio	60	

Aims

Introduce advanced 3D solid and surface modelling using multi-body part techniques and freeform part design.

Learning Outcomes

After completing the module the student should be able to:

1   Produce 3D part models using advanced solid modelling techniques
2   Produce 3D part models using surface modelling techniques
3   Produce 3D part models of injection moulded components
4   Produce 3D part models of sheet metal components

Learning Outcomes of Assessments

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

Inclass CAD test   1   2

CAD Portfolio   3   4

Outline Syllabus

Module introduction
Module guide; aims; learning outcomes; assessment and marking schemes. Outline syllabus; module timetable and student feedback.

Advanced solid modelling:
Multi-bodied solids, developing sweep paths using 3D sketching complex shapes with Lofts. Introduction to design automation through parametric modelling software (DriveWorks). Clash detection. Sheet metal work and weldment functions.

Mould design:
Mould analysis, draft, scale, parting lines, shut of surfaces, parting surfaces, tooling split, mould flow analysis, optimising wall thickness, determining the best injection point location, viewing and interpreting results.

Surface modelling:
Import of sketch pictures into CAD. Creation of surface based features, construction surfaces. Use of splines, advanced filleting, deleting faces, face deformation, utilizing shape and dome features, offset surfaces, extend surfaces, intersection curves.

Learning Activities

This module will be delivered through an integrated series of lectures, tutorials, practical sessions, guided design activities and case studies. The learning activities are to be student focused and develop the students design knowledge through experiential learning.

Notes

This module is delivered using a variety methods including lectures, seminars, tutorials and practical sessions. The module will be delivered from a engineering and

product design perspective.