Liverpool John Moores University

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Title:	ADVANCED CAD
Status:	Definitive
Code:	**5095ENG** (117168)
Version Start Date:	01-08-2016

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

Team	Leader
Jamie Finlay	Y

Academic Level:	FHEQ5	Credit Value:	24	Total Delivered Hours:	60
Total Learning Hours:	240	Private Study:	180		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Practical	60

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	Portfolio		40	
Portfolio	Portfolio		60	

Aims

This module covers advanced 3D solid modelling functionality. It explores the world of freeform part design and multi-body part modelling

Learning Outcomes

After completing the module the student should be able to:

1   Interpret design concepts and sketches to produce 3D parts and assemblies in CAD
2   Produce 3D part models using advanced solid modelling techniques
3   Produce 3D part models using surface modelling techniques
4   Produce 3D part models of injection moulded components

Learning Outcomes of Assessments

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

Surface modelling   1   2

CAD project   1   2   3   4

Outline Syllabus

Interpretation of design concepts:
Sketching prior to CAD modelling, identification of manufacturing routes, design for assembly, import of sketch pictures into CAD.

Advanced solid modelling:
Multibodied solids, developing sweep paths using 3D sketching complex shapes with lofting, clash detection.

Surface modelling:
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.

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.

Learning Activities

This module will be delivered through a series of structured modelling sessions within the Computer Aided Design room.

Notes

The objective of this module is to give students experience of using advanced solid modelling features to produce 3D solid and surface models. It should also give students experience of translating conceptual sketched designs into solid models