

Liverpool John Moores University

Title: Computer Aided Design and Manufacture
Status: Definitive
Code: **5507ENGRIV** (117217)
Version Start Date: 01-08-2016

Owning School/Faculty: Maritime and Mechanical Engineering
Teaching School/Faculty: Maritime and Mechanical Engineering

| Team | Leader |
|-----------------|--------|
| Russell English | Y |

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 | Report 1 | | 20 | |
| Report | Report 2 | | 30 | |
| Artefacts | Artefact | | 50 | |

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 | |
| Design for Manufacture Report | 2 | 3 |
| Computer assisted artefact | 3 | 4 |

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.

Notes

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