

Module Title:	CAD CAM	Level:	4	Credit Value:	20
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Module code:	ENG404	Is this a new module?	Yes	Code of module being replaced:	ENF407
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Cost Centre:	GAME	JACS3 code:	J511
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Trimester(s) in which to be offered:	1, 2 & 3	With effect from:	September 16
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School:	Applied Science, Computing & Engineering	Module Leader:	Natalija Vidmer
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Scheduled learning and teaching hours	60 hrs
Guided independent study	140 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered	Core	Option
FdEng Industrial Engineering	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Pre-requisites
None

Derogations
A derogation from regulations has been approved for this module which means that whilst the pass mark is 40%, each element of assessment requires a minimum mark of 30% for the module to be passed overall.

Office use only

Initial approval June 16

APSC approval of modification *Enter date of approval*

Have any derogations received SQC approval?

Version 1

Yes No

Module Aims

The module provides integration of the subject areas of computer aided design and computer aided manufacture. It will enable the student to acquire a broad knowledge of the practical applications of a CAD CAM system.

Intended Learning Outcomes

Key skills for employability

- KS1 Written, oral and media communication skills
- KS2 Leadership, team working and networking skills
- KS3 Opportunity, creativity and problem solving skills
- KS4 Information technology skills and digital literacy
- KS5 Information management skills
- KS6 Research skills
- KS7 Intercultural and sustainability skills
- KS8 Career management skills
- KS9 Learning to learn (managing personal and professional development, self-management)
- KS10 Numeracy

At the end of this module, students will be able to

Key Skills

At the end of this module, students will be able to		Key Skills	
1	Produce a component drawing suitable for transfer to a CAM system	KS1	
		KS4	
2	Transfer data, generated by CAM system, for subsequent machining	KS4	
		KS10	
		KS9	
3	Utilise 3D software to produce a component for rapid prototyping	KS3	

Assessment:

Assessment 1: Coursework will progressively develop sets of drawings, code and files from/for CAD/CAM systems.

Assessment 2: Practical will involve the implementation of the software designs and produce a 'product'

MODULE SPECIFICATION PROFORMA

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1 & 2	Coursework	50		2000
2	3	Practical	50		2000

Learning and Teaching Strategies:

Principles and theory will be conveyed through lectures and a series of tutorials. This information will be reinforced through a range of Laboratory exercises, inclusive of computer simulations and machine shop work

Syllabus outline:

- CMMs – the application of co-ordinate measuring machines
- 2D CAD – production of 2D CAD drawings that can be transferred to CAM packages, using generation and editing techniques.
- CAM – generation of CNC code and downloaded to a CNC machine to produce components, inclusive of CAM simulation.
- 3D CAD – Production of suitable component design for transfer to a rapid prototyping machine, including the generation of .stl files.
- Rapid prototyping – loading and orientation of .stl models and rapid prototype production of component.

Bibliography:

Essential reading

N. Brock (2016), *Cad Cam Rapid Prototyping Application Evaluation*, CreateSpace Independent Publishing

Other indicative reading

R. ALavala (2013) *CAD/CAM: Concepts and Applications*, PHI Learning