



Title:	3D CAD APPROVED
Long Title:	3D Design using Autocad
Module Code:	MECH6041
Duration:	1 Semester
Credits:	5
NFQ Level:	Fundamental
Field of Study:	Mechanical Engineering
Valid From:	Semester 1 - 2016/17 (September 2016)
Module Delivered in	1 programme(s)
Module Coordinator:	GER KELLY
Module Author:	GER KELLY
Module Description:	This Module aims to give the student a comprehensive introduction to the different forms of three dimensional draughting using Autocad software.
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Use the World and User systems and define 3D co-ordinates in the construction of 3D drawings.
LO2	Use multiple viewports and views to construct 3D drawings
LO3	Create and edit polygon meshes for surface modeling.
LO4	Construct and render 3D models in the solid model state and generate 2D views from same
LO5	Plot multiple views from finished drawings
Pre-requisite learning	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.</i>	
Students should be proficient in the use of 2D CAD	
Co-requisites	
No Co Requisites listed	

Module Content & Assessment

Indicative Content

Surface Meshing

To construct various designs using Polygon mesh tools

Solid Modeling

Generate parts as solid objects using various Boolean functions such as extrude, revolve etc. Generate 2D views from 3D models and render 3D models.

Plotting

To set up the required orthographic views from the 3D drawing

Assessment Breakdown

	%
Course Work	100.00%

Course Work

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	3D views using polygon mesh tools	1,2,3,5	40.0	Week 5
Practical/Skills Evaluation	Construction of machine parts using solid modelling	1,2,4,5	40.0	Week 12
Multiple Choice Questions	Assessment of all learning outcomes	1,2,3,4,5	20.0	Sem End

No End of Module Formal Examination

Reassessment Requirement

Coursework Only

This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.

The institute reserves the right to alter the nature and timings of assessment

Module Workload

This module has no Full Time workload.

Workload: Part Time

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lab	Computer Aided Design	3.0	Every Week	3.00
Independent Learning	Study	4.0	Every Week	4.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				3.00

Module Resources

Recommended Book Resources

- **Scott Onstott 2015, *AutoCAD 2016 and AutoCAD LT 2016 Essentials*, 1st Ed., Autodesk Official Press [ISBN: 1119059186]**

Supplementary Book Resources

- **George Omura, Brian C. Benton 2015, *Mastering AutoCAD 2016 and AutoCAD LT 2016*, 1st Ed., Autodesk Official Press [ISBN: 1119044839]**

This module does not have any article/paper resources

Other Resources

- **Website: Autodesk**
<http://www.autodesk.com>

Module Delivered in

Programme Code	Programme	Semester	Delivery
CR_E3DDA_6	Certificate in 3D CAD and Solid Modelling	1	Mandatory