



<b>Title:</b>	Intro 3-D Parametric Modelling <b>APPROVED</b>
<b>Long Title:</b>	Introductory 3-D Parametric Mo
<b>Module Code:</b>	MECH6040
<b>Duration:</b>	1 Semester
<b>Credits:</b>	5
<b>NFQ Level:</b>	Fundamental
<b>Field of Study:</b>	Mechanical Engineering
<b>Valid From:</b>	Semester 1 - 2016/17 ( September 2016 )
<b>Module Delivered in</b>	<a href="#">8 programme(s)</a>
<b>Module Coordinator:</b>	GER KELLY
<b>Module Author:</b>	GER KELLY
<b>Module Description:</b>	This module introduces the student to 3-D Parametric modelling. The core concept of the module is to develop techniques to create parts, assemblies and drawings utilising 3-D modelling package. These tasks will be carried out using best practice modelling strategies and international drawing standards.
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Use industry specific 3-D parametric modelling software
LO2	Develop 3-D models/assemblies
LO3	Produce 2-D working drawings from 3-D models
LO4	Illustrate the benefits of parametric modelling for design intent
<b>Pre-requisite learning</b>	
<b>Module Recommendations</b>	
<i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>	
No recommendations listed	
<b>Incompatible Modules</b>	
<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	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b>	
<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>	
No requirements listed	
<b>Co-requisites</b>	
No Co Requisites listed	

**Module Content & Assessment**

**Indicative Content**

**3-D Modelling**

Create basic solid models involving Sketching a Profile, setting Dimensions & Constraints and Basic Features (e.g. Extrude, Revolve, Blends (Lofts), Holes, Threads, Shell, Chamfer, Round, Draft, Rib and Thin, duplicating Features; Reorder Features and Relations), Assembly of parts, mechanisms, working drawing creation, BOM and presentation files.

**Assessment Breakdown**

	%
Course Work	100.00%

**Course Work**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Develop a 3-D Model	1,2,4	15.0	Week 5
Practical/Skills Evaluation	Produce working drawings of parts, assembly and presentation of a given system.	1,2,3	20.0	Week 9
Project	Design and Model a 3-D project. Produce associated parts, assembly and presentation drawings.	1,2,3,4	35.0	Sem End
Other	Portfolio	1,2,3,4	30.0	Sem End

No End of Module Formal Examination

**Reassessment Requirement**

**Repeat the module**

*The assessment of this module is inextricably linked to the delivery. The student must reattend the module in its entirety in order to be reassessed.*

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

**Module Workload**

<b>Workload: Full Time</b>				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lab	3-D Modelling	4.0	Every Week	4.00
Independent Learning	Self Directed	3.0	Every Week	3.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

<b>Workload: Part Time</b>				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lab	3D Modelling	3.0	Every Week	3.00
Independent & Directed Learning (Non-contact)	Self Directed Learning	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

- Curtis Waguespack,, *Mastering Autodesk Inventor 2012 and Autodesk Inventor LT 2012* [ISBN: 978-1-1180-1682-4]

### Supplementary Book Resources

- Wasim Younis,, *Up and Running with Autodesk Inventor Professional 2012* [ISBN: 978-1461066118]
- Daniel T. Banach, Travis Jones,, *Autodesk Inventor 2011 Essentials Plus* [ISBN: 9781111135270]
- James M. Leake; with special contributions by Jacob L. Borgerson 2008, *Engineering design graphics*, John Wiley & Sons [Hoboken, NJ] [ISBN: 978-0-471-76268-3]
- Thom Tremblay,, *Autodesk Inventor 2012 and Inventor LT 2012 Essentials* [ISBN: 978-1-1180-1680-0]

*This module does not have any article/paper resources*

### Other Resources

- Website: <http://students.autodesk.com/>

**Module Delivered in**

<b>Programme Code</b>	<b>Programme</b>	<b>Semester</b>	<b>Delivery</b>
CR_ESENT_8	<a href="#"><u>Bachelor of Engineering (Honours) in Sustainable Energy Engineering</u></a>	2	Mandatory
CR_EBIME_7	<a href="#"><u>Bachelor of Engineering in Biomedical Engineering</u></a>	2	Mandatory
CR_EMANF_7	<a href="#"><u>Bachelor of Engineering in Manufacturing Engineering</u></a>	2	Mandatory
CR_EMECH_7	<a href="#"><u>Bachelor of Engineering in Mechanical Engineering</u></a>	2	Mandatory
CR_E3DDA_6	<a href="#"><u>Certificate in 3D CAD and Solid Modelling</u></a>	2	Mandatory
CR_EBIME_6	<a href="#"><u>Higher Certificate in Engineering in Biomedical Engineering</u></a>	2	Mandatory
CR_EMECH_6	<a href="#"><u>Higher Certificate in Engineering in Mechanical Engineering</u></a>	2	Mandatory
CR_EMECN_7	<a href="#"><u>Parttime - Bachelor of Engineering in Mechanical Engineering</u></a>	2	Group Elective 1