Title:	Geometric Graphics & BIM APPROVED
Long Title:	Geometric Graphics & Building Information Modelling

Module Code:	CRAF6003	**Duration:**	1 Semester

Credits:	5
NFQ Level:	Fundamental
Field of Study:	Craft
Valid From:	Semester 1 - 2015/16 (September 2015)
Module Delivered in	1 programme(s)
Module Coordinator:	MICHAEL HOURIHAN
Module Author:	BRIAN THOMA
Module Description:	This module introduces the student to geometric principles for Carpentry & Joinery, and to relevant software packages.

Learning Outcomes	
On successful completion of this module the learner will be able to:	
LO1	Identify drawing conventions commonly used in Carpentry & Joinery.
LO2	Identify and use various projections systems and views, including 1st to 4th angle projection systems, Isometric, Auxillary, Oblique and sectional views.
LO3	Apply plane and solid geometry principles in stairs and roofing situations.
LO4	Communicate and explain Interpenetration as it relates to roofing interfaces and its use in the calculation of roof coverings.
LO5	Apply principles of Conical geometry to solve problems in dormer roofs and segmental bay roofs.
LO6	Explain and communicate perspective, shadow and freehand sketching in the design of building forms.
LO7	Discuss the use of relevant drawing software packages within a Carpentry & Joinery context.

Pre-requisite learning
Module Recommendations *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).*
No recommendations listed
Incompatible Modules *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.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements *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.*
No requirements listed
Co-requisites

No Co Requisites listed

Module Content & Assessment

Indicative Content
Graphics Introduction Drawing conventions, lettering style, page layout. Introduction to various projections systems and views commonly used in Carpentry and Joinery drawings.
Plane and Solid Geometry, Freehand sketching, perspective and shadow. Understand the concepts of plane and solid geometry. Understanding shadows, perspective and using freehand sketching in product design.
Interpenetration and Conic Sections Understanding Interpenetration and Conic Sections as they relate to roofing situations and problems.
Computer Laboratory Introduction to drawing software packages such as Sketchup and AutoCAD - basic commands, advantages of each package, use in Carpentry & Joinery.

Assessment Breakdown	%
Course Work	50.00%
End of Module Formal Examination	50.00%

Course Work

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	Application of communication graphics in design.	1,2,5,6	20.0	Week 9
Project	Application of geometric forms (Interpenetration and Conic sections)in building design. Develop and mark out regular/irregular roofs and surface forms.	3,4,5,6,7	30.0	Week 10

End of Module Formal Examination

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	End-of-Semester Final Examination	1,2,3,4,5,6,7	50.0	End-of-Semester

Reassessment Requirement
Repeat examination *Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.*

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

Module Workload

Workload: Full Time				
Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	Studio Based delivery of module content	4.0	Every Week	4.00
Lab	AutoCAD 2D and Revit	1.0	Every Week	1.00
Independent Learning	Study, review module content.	2.0	Every Week	2.00
			Total Hours	7.00
			Total Weekly Learner Workload	7.00
			Total Weekly Contact Hours	5.00

This module has no Part Time workload.

Module Resources

Recommended Book Resources

- **David Frey 2004, *AutoCAD 2005 and AutoCAD LT 2005*, Sybex San Francisco, California [ISBN: 0-7821-4341-5]**
- **Eanna O Broin, 1991, *Technical Draughtsmanship*, 2nd Ed., Gill and Macmillan Dublin [ISBN: 0717116522]**
- **Frank Ching 1985, *Architectural graphics*, Second Ed., Van Nostrand Reinhold Co. New York [ISBN: 0-442-21864-8]**

Supplementary Book Resources

- **Kendra Schank Smith 2008, *Architects' sketches*, Elsevier Oxford [ISBN: 978-0-7506-8226-8]**

This module does not have any article/paper resources

Other Resources

- **Website: Architecture Week 2011, *Great Buildings*, Architecture Week http://www.greatbuildings.com**
- **Video Website: Youtube*Engineering Drawing Tutorials* http://www.youtube.com/watch?v=whvHphTLq_go**

Module Delivered in

Programme Code	Programme	Semester	Delivery
CR_ECTWB_7	Bachelor of Science in Craft Technology (Wood) with Business	1	Mandatory