Institute of Technology Tallaght
Institiúid Teicneolaíochta Tamhlacht

CDES H1001: Design with Computers 1 Extra Header Data

Module Delivered in

Programme Code	Programme	Semester	Delivery
TA_EAEEE_D	Bachelor of Engineering in Energy and Environmental Engineering	1	Mandatory
TA_EAEEE_B	Bachelor of Science (Honours) in Energy Systems Engineering	1	Mandatory

Short Title:	Design with Computers 1 APPROVED
Full Title:	Design with Computers 1

Module Code:	CDES H1001	**NFQ Level:**	6	**ECTS Credits:**	5

Reviewed By:	JAMES WRIGHT

Description:	The aim of this module is to equip the students with the knowledge and skills necessary to create, modify and interpret, 2-D basic drawings of structures or buildings in a CAD environment to a recognised standard.

Learning Outcomes:

On successful completion of this module the learner will be able to

1. State what information is contained in structural/building drawings and what standards cover their preparation.
2. Use the basic functionality of a standard CAD package for entity creation and modification.
3. Use a CAD system to create and modify 2-D plan, elevation and section views of simple structures and buildings.
4. Add dimension and annotation details to structural drawings.
5. Produce hard copy of completed drawings including title blocks.
6. Interpret 2-D plan, elevation and section views of moderately complex structures and buildings.

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Module Content & Assessment

Content
Structural Drawings and Standards: 10% The purpose of drawings. Orthographic projection, third angle projection. Plan and elevation views, sectional views, detailed views. Drawing Standards for structures and buildings. **Introduction to 2-D CAD: 10%** Initiating a drawing session. Naming, saving and storing files. File types and extensions. Line styles, widths and colours. Layer conventions and use. **Entity construction: 20%** Lines, construction lines, multi-lines and poly lines. Circles, arcs, splines and ellipses. **Entity modification: 20%** Properties and property matching. Erasing, moving, rotating, stretching, trimming, breaking, filleting and chamfering. **Entity replication: 10%** Entity replication: Copying, mirroring, offsetting and arraying. **Drawing Annotation: 20%** Creating and editing text. Text fonts and styles. Creating dimensions and tolerances. Cross hatching and patterns. Dimensioning standards. **Drawing Production: 10%** Blocks, external references and title blocks. Hardcopy production.

Assessment Breakdown	%
Course Work	100%
End of Semester Formal Examination	0%

Coursework Breakdown				
Type	*Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Continuous Assessment	Identify plan view, elevation views, section views and details from a construction drawing.	1,6	10	Week 2
Continuous Assessment	Establish a template drawing which defines a standard layer convention, including line styles, widths and colours.	2,3,5,6	10	Week 3
Continuous Assessment	Produce a drawing including a plan view and at least one elevation requiring the construction of various line types, arc/circle types, ellipses and/or splines.	2,3,4,5	20	Week 5
Continuous Assessment	Given an existing drawing, use the entity modification tools to implement specified changes.	2,3,4,5	20	Week 8
Continuous Assessment	Given an existing base drawing, use the entity replication features to populate the drawing as specified.	1,2,3,4,5	10	Week 10
Continuous Assessment	Annotate a drawing with suitable notes dimensions, hatching and patterns.	3,4,5	20	Week 11
Continuous Assessment	Produce a drawing with plan, elevation, section and detail views, appropriately dimensioned and annotated to a recognized standard.	2,3,4,5,6	10	Week 12

IT Tallaght reserves the right to alter the nature and timings of assessment

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Module Workload & Resources

Workload	**Full-time**			
Type	*Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Laboratories	Computer Based laboratory Work	4	Every Week	4.00
Independent Learning Time	Outside of Class	1	Every Week	1.00
			Total Weekly Learner Workload	5.00
			Total Weekly Contact Hours	4.00

Resources
Required Book Resources
Ellen Finkelstein 2009, *AutoCAD? 2009& AutoCAD LT? 2009 bible*, Wiley Pub. Hoboken, N.J. [ISBN: 978-0-470-26017-3]
George Omura 2008, *Mastering AutoCAD 2009 and AutoCAD LT 2009*, Wiley Pub. Indianapolis, Ind. [ISBN: 978-0-470-28704-0]