

Module Title:	Engineering Drawing
Language of Instruction:	English
Credits:	10
NFQ Level:	7
Module Delivered In	2 programme(s)
Teaching & Learning Strategies:	Lectures Drawing Practicals Private study
Module Aim:	The aims of the module are: (1) to develop a knowledge of both manual and computer generated engineering drawing. (2) to create, edit and print a variety of technical drawings using a CAD system.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	communicate effectively in a modern technical environment;
LO2	construct and present quality engineering drawings in a well drafted manner.
LO3	present correct lettering, figures and dimensions to a defined style and standard
LO4	produce detailed Civil Engineering drawings using AutoCAD
Pre-requisite learning	
Module Recommendations <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</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.</i>	
No requirements listed	

Module Content & Assessment

Indicative Content

Sketching (30 hours)

(a) Paper size, Lettering & title blocks (b) Orthographic projection (c) Isometric and oblique projection (d) Perspective drawing (e) Freehand sketching (f) Basic geometrical solids (g) Development of surfaces (h) Practical freehand sketching exercises

Computer Aided Drafting (60 hours)

(a) Introduction to basic CAD concepts using AutoCAD. (b) Basic file management techniques. (c) Use and identify key components of the software relating to the 2D drawing environment. (d) Use the AutoCAD software co-ordinate system to aid accurate drawing. (e) Set up the drawing environment with the correct units in order to start producing drawings. (f) Use absolute/relative/polar X, Y co-ordinate system to produce basic measured objects through keyboard entry. (g) Use AutoCAD function keys. (h) Use hatch, text and simple dimensioning routines. (i) Basic editing and drawing commands. (j) Scale/load linetypes (k) Use a layering system and different linetype styles and assign lineweights. (l) Create/edit basic block (m) Create isometric drawings in 2D AutoCAD (n) Use of polar and circle array (o) Introduction to dynamic blocks (p) Enhancing CAD drawings with text, symbols and blocks. (q) Transferring data using the Design Centre. (r) Create basic dimension styles to suit viewport scales. (s) Adding and editing dimensions with different dimensioning styles. (t) Create/edit basic .ctb files (colour dependant plots styles) (u) Share data working with other applications Word and Excel. (v) Using paper space to print a variety of drawing layouts to scale. (x) Scan raster images and import them into AutoCAD. (y) Create and use templates which will set the drawing environment ready for your projects, and an understanding of the benefits of using templates.

Practical CAD drawing exercises (60 hours)

(a) Foundation detail (b) Pipe layout and sections (c) Road layout and sections (d) Typical manhole plan and section (e) Typical road gully plan and section (f) Base plate detail

Assessment Breakdown

%

Practical

100.00%

No Continuous Assessment

No Project

Practical

<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Practical/Skills Evaluation	Practical drawing exercises	1,2,3,4	100.00	n/a

No End of Module Formal Examination

ITCarlow reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Practicals	30 Weeks per Stage	1.00
Practicals	30 Weeks per Stage	4.00
Estimated Learner Hours	30 Weeks per Stage	3.00
	Total Hours	240.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMHCE_B	Bachelor of Engineering (Honours) in Civil Engineering - Ab Initio	1	Mandatory
CW_CMCIV_D	Bachelor of Engineering in Civil Engineering	1	Mandatory