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| Module Title: | Technical Drawing and Sketching |
| Language of Instruction: | English |
| Credits: | 5 |
| NFQ Level: | 6 |
| 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

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

No End of Module Formal Examination

SETU Carlow Campus 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 | Every Week | 1.00 |
| Practicals | Every Week | 3.00 |
| Estimated Learner Hours | Every Week | 3.00 |
| Total Hours | | 7.00 |

Module Delivered In

| Programme Code | Programme | Semester | Delivery |
|----------------|--|----------|-----------|
| CW_CGSDC_B | Bachelor of Science (Honours) in Set Design and Construction | 1 | Mandatory |
| CW_CGSDC_D | Bachelor of Science in Set Design and Construction | 1 | Mandatory |