Institute of Technology Tallaght
Institiúid Teicneolaíochta Tamhlacht

ENGR H1006: Engineering Graphics & Communications Extra Header Data

Module Delivered in

Programme Code	Programme	Semester	Delivery
TA_EAMEC_D	Bachelor of Engineering in Mechanical Engineering	1	Mandatory

Short Title:	Engineering Graphics & Communications APPROVED
Full Title:	Engineering Graphics & Communications

Module Code:	ENGR H1006	**NFQ Level:**	6	**ECTS Credits:**	5

Reviewed By:	FIONA CRANLEY

Description:	This subject aims to introduce the student to engineering communication by the use of both conventional and engineering communication methods. The student will use oral, written and graphical methods for the communication of technical and other information

Learning Outcomes:

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

1. Read and interpret engineering drawings both on paper and using CAD [POg].
2. Apply conventions for the layout of engineering drawings [POg].
3. Produce finished isometric and orthographic sketches [POg].
4. Produce multi-view drawings for simple engineering components using CAD [POg POb].
5. State conventions for the layout of orthographic drawings [POc]
6. Demonstrate the use of typical personal computer applications (Word Processing, Spreadsheet and Presentation) to ECDL standard [POg]
7. Employ a correct vocabulary, analyse written and graphical material for technical and non-technical reports [POg].
8. Demonstrate skills for effective oral presentations; prepare a presentation on a topic and make a presentation to a group [POg].
9. Use library resources to source text books and standards [POc
10. Develop a personal study plan including preparation for and sitting of exams and answering examination questions [ ].

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Module Content & Assessment

Content
Drawing fundamentals (2 hrs) **Sketching (6 hrs)** Orthographic sketching, Isometric sketching, line types, lettering, proportions and scale. **Orthographic drawing (2 hrs)** 3rd angle projection, Layout of views, use of construction geometry, line types, hidden detail. **Dimensioning (3 hrs)** Principles and ground rules, BS standard conventions, datum features, baseline continuous and aligned dimensions, dimensioning holes and radii. **CAD environment: (3 hrs)** CAD user environment: Menus, Toolbars, Prompts, Graphics region, Data entry (menus, keyboard, toolbars and mouse). **Geometric entities (3 hrs)** Lines, circles, ellipses, arcs, polygons **Output devices (1)** Printing. **Modifying geometric entities: (3 hrs)** Trimming, extending, scaling, copying, moving. **Coordinate systems (3 hrs)** Absolute/relative, rectangular/polar **Drawing aids: (3 hrs)** Snap, grid, ortho, coordinates, object snaps **Layers: (2 hrs)** Layering conventions, hiding, freezing, layer attributes **Drawing template: (3 hrs)** Defining, applying. **Entity attributes: (2 hrs)** Linetype, colour. **Use of a Spreadsheet application (4 hrs)** **Written communication: (5 hrs)** Use of English in technical communications: lab reports, summaries of documents, emails and application letters. Use of a Word Processor application. **Presentation skills: (3 hrs)** Preparation and presentation of a topic of the student's choice to a group of their peers with particular emphasis on timing, visual aids and presentation techniques. Use of a computer based Presentation Tool. **Library skills: (1 hrs)** Basic use of the library resources, database searches, data gathering exercise **Study Skills: (3 hrs)** Organisation, past papers, how to approach different types of exam questions, planning study time, managing part time work commitments, study groups, getting organised for the actual exam.

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

Coursework Breakdown				
Type	*Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Other	Free hand sketching of orthographic views		5	Week 1
Other	Engineering Graphic exercises on Lines, coordinate systems, modifying, orthographic projection, dimensioning, templates, layers		70	Every Week
Other	Library skills (library search exercises using library databases and search systems)		5	Week 3
Other	Written exercises:(model laboratory report, summary exercises, use of email, job application.)		5	Week 5
Other	Use of a Spreadsheet application (standard mathematical and logical operations using basic formulas and functions, creating charts and graphs)		5	Week 7
Other	Presentation skills: (presentation preparation and delivery: visual aids, structure, timing, and technique)		5	Week 9
Other	Study Skills exercises (organizational exercises done in class)		5	Week 10

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

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Module Workload & Resources

This course has no full time workload.

Resources
Required Book Resources
Colin H. Simmons, Dennis E. Maguire, *Manual of engineering drawing*, 2nd Ed., Oxford: Butterworth-Heinemann, [ISBN: ISBN 0750651202.] **Yarwood, Longman 2000, *AutoCAD worked examples*** **Davies, Longman 1996, *Communications for Engineering Students*, 2nd Ed.** **Croft et al., Wiley 1989, *Engineering Graphics,***
Recommended Book Resources
Ellen Finkelstein 2001, *AutoCAD 2002 Bible* **Burchard, Pitzer Liddle, Pitzer, 2001, *AutoCAD 2002 Complete***