Module Title Computer Aided Design Fundamentals

Module Code ENG3321

Class-Contact Hours 30 Hours

Lecture/Practical 30 Hours

Module Value 2.0

Module Aims

This module aims to:

1. provide basic knowledge of fundamental drafting principles required in engineering drawing in accordance with British and International Standards to students;
2. give students an understanding of the elements of a PC based CAD system;
3. equip students with basic skills of producing engineering drawings using a CAD system.
4. develop students' communication skills through the interpretation of engineering drawings within the guidelines of appropriate British and International Standards.

Pre-requisites

None

Co-requisites

None

Teaching & Learning Strategies

To achieve the aims of this module, the teaching strategies should adopt a simple and practical approach. Practical applications in engineering drafting and documentation should be given to students in order to help the delivery of the module. Emphasis should be placed on general and simple components. Small group lectures, demonstrations and computer aided drafting practices should be arranged to monitor the progress of the students and to highlight the principles and techniques of computer aided drafting. Standards for drafting and drawing documentation in this module are referred to the latest British Standard 8888.

Assessment Scheme

Continuous Assessment 100%

Key Content Area & Objective

1. INTRODUCTION TO DRAFTING PRINCIPLES
   (Understand the concepts and fundamental of drafting principles required in engineering drawing.)

   Standards information: types of engineering drawing, types and applications of lines, abbreviations, standard symbols related to common engineering features, surface texture and welding

   Orthographic projection: first and third angle projection, hidden details, sectional views, dimensioning

   Pictorial drawing: isometric projection, oblique projection

2. FUNDAMENTALS OF COMPUTER AIDED DRAFTING TECHNIQUES
   (Understand the elements of a PC based CAD system and practise the available tools for drafting.)

   Benefits and applications of CAD system, example of hardware and software requirement for a CAD system

   Drawing setup, co-ordinate system, use of object snap tools, managing drawing object properties, manipulating views, object selection

   Use of drawing and modifying tools to construct engineering drawings in orthographic and pictorial projections.

   Dimensioning drawings, drawing layout and plotting

   Creating blocks and attributes, building symbol library

3. APPLICATION OF COMPUTER AIDED DRAFTING
   (Practise computer aided drafting in the production of simple engineering drawings)

Detail drawings of simple engineering components

Schematic diagrams for industrial applications

Text Books / References

1. A. Yarwood, Introduction to AutoCAD 2004, 2D and 3D design, first ed., Elsevier, 2004.
2. O. Ostrowsky, *Engineering Drawing with CAD applications,* Butterworth Heinemann,1999.
3. BSI, Technical production documentation (TPD) – specification for defining, specifying and graphically reporting products, BS8888, 2002.
4. Autodesk, AutoCAD 2004 user's guide, 2003

Date of Updating

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