

Course Name: Engineering Graphics		
Course Code: ME-101		
Contact Hours/Week: 1L + 3P		Course Credits: 03
Course Objectives <ul style="list-style-type: none"> To equip engineering students with “Universal language of Engineers” for developing their engineering communication through drafting exercises of geometrical solids To prepare preliminary engineering drawings with geometric instruments as well as Drafting software with equal expertise 		
Unit Number	Contents of Theory Part	Lectures
UNIT-01	Introduction: Importance of Engineering Drawing, Engineering Drawing Instruments and uses, B.I.S and I.S.O. Conventions for drawings, Use of plane scales and Representative Fraction	01L
UNIT-02	Projection of Points and Straight Lines: Introduction to principal planes, Notation System, Projection of line parallel/ perpendicular to principal plane, Concept of true length of line.	01L
UNIT-03	Projection of Planes: Concept of different planes, Projections of planes with its inclination to one principal plane and with two principal planes. Concept of auxiliary plane method for projections of the plane.	01L
UNIT-04	Projection of Solids and Sections of Solids: Classifications of Solids, Projections of right and regular solids with their axis Parallel to two and Perpendicular to one of the principal planes, axis parallel to one and inclined to two principal planes, axis inclined to all the three principal planes. Section of solids.	01L
UNIT-05	Orthographic Projections & Isometric Projection: Principle of projection, Principal planes of projection, Projections from the pictorial view of the object on the principal planes using first angle projection method and third angle projection method, Full Sectional View, Isometric projection.	02L
UNIT-06	Autocad's Workspaces And User Interface: The Drawing Area, Accessing Autocad Commands, Starting, Saving, And Opening Drawings, Closed User Interface, User Interface And Startup Tutorial, Coordinates, World Coordinate System/User Coordinate System, Coordinate Systems Tutorial, Drawing Using Coordinates Tutorial, Drawing Commands, Text & Modifying Commands, Object Snap Commands.	06L

Practical No.	Contents of Practicals	Number of Drawing/ Graphics Sheets
Conventional Engineering Drawing		
1.	Preparation of drawing sheet related to Scales and Representative Fraction.	01
2.	Preparation of drawing sheet related to Projection of Points and Straight Lines.	01
3.	Preparation of drawing sheet related to Projection of Planes.	01
4.	Preparation of drawing sheet related to Projection and Section of Solids.	01
5.	Preparation of drawing sheet related to Orthographic Projections.	01
6.	Preparation of drawing sheet related to Isometric Projections.	01
	Total Sheets	06
Computer Aided Graphics		
7.	Learning of drawing software, utility of drawing commands, built in directory and tools.	01
8.	Learning of drawing units, sheet setting, practice of different drawing commands.	01
9.	Learning of text command layers block, insert blocks and dimensioning techniques.	01
	Total Sheets	03
Computer Aided Modeling		
10.	Drawing of 2D and 3D models.	01
11.	Isometric drawings with different views.	01
12.	Complex solid models and wire frame models.	01
	Total Sheets	03

Course Outcomes

Upon successful completion of the course, the students will be able to

- CO1: Visualization in context of Engineering
CO2: Read, Interpret drawing
CO3: Drawing using techniques like Orthographic and pictorial projections
CO4: Auxiliary and section views, Basic dimensioning
CO5: 2-D CAD drawing techniques 3-D CAD modeling techniques using AutoCAD.

Books and References

1. A text book of Engineering Drawing by P.S.Gill, S.K.Kataria & Sons, Delhi.
2. Engineering Drawing and Graphics by K. Venugopal, New Age International.
3. Engineering Drawing with an Introduction to AutoCAD by D.A. Jolhe, Tata McGraw-Hill Publishing Co. Ltd., New Delhi.
4. Engineering Drawing & Graphics using Auto CAD 2000 by T. Jeyapoovan, Vikas Publishing House Pvt. Ltd., New Delhi.