

ENGINEERING GRAPHICS

Lectures : 2 periods / week
Drawing : 4 periods /week
Semester End Exam : 3 hrs

Sessional Marks : 40
Semester End Exam Marks : 60
Credits : 4

Course Objectives:

- Comprehend general projection theory with emphasis on orthographic projection to represent three dimensional objects in two dimensional views.
- Construct letters & Numerals in a legible freehand form
- To be able to plan and prepare neat orthographic drawings of points, Straight lines, Regular planes and solids
- Draw and identify various types of section , Intersection and Auxiliary views
- To enable the students in the aspects of development of surfaces in sheet metal working.

Course Outcomes:

- Acquire basic skills in Technical graphic communication
- The students will be able to visualize and communicate with 2D as well as three dimensional shapes.
- Understands the application of Industry standards and best practices applied in Engineering Graphics
- The student is able to apply the knowledge of development of surfaces in real life situations
- The students will be able to know the fundamentals of drawing and to use in Machine drawing , Production Drawing ...etc .

(To be taught & examined in First angle projection)

UNIT I

General:

Use of Drawing instruments, Lettering .-Single stroke letters, Dimensioning- Representation of various type lines. Geometrical Constructions. Representative fraction.

Curves :

Conic sections : general construction , Oblong and Concentric circle method for ellipse, Tangent and Rectangular methods for parabola , Curves : cycloidal curves - cycloid, epicycloid and hypocycloid; involute of circle.

UNIT II

Method of Projections:

Principles of projection - First angle and third angle projection of points. Projection of straight lines. Traces of lines.

Projections of Planes :

Projections of planes, projections on auxiliary planes.

UNIT III

Projections of Solids:

Projections of Cubes, Prisms, Pyramids, Cylinders and Cones with varying positions.

Sections of Solids:

Sections of Cubes, Prisms, Pyramids, cylinders and Cones.true shapes of sections. (Limited to the Section Planes perpendicular to one of the Principal Planes).

UNIT IV

Development of Surfaces:

Lateral development of cut sections of Cubes, Prisms, Pyramids, Cylinders and Cones.

Interpenetration Of Solids:

Interpenetration of Prism in prism, (Treatment is limited to triangular & square prisms) and Cylinder in Cylinder with their axes perpendicular without offsets.

UNIT - V

Isometric Projections:

Isometric Projection and conversion of Orthographic Projections into isometric views. (Treatment is limited to simple objects only).

Orthographic Projections:

Conversion of pictorial views into Orthographic views. (Treatment is limited to simple castings).

TEXT BOOK:

1. Engineering Drawing by N.D. Bhatt & V.M. Panchal. (Charotar Publishing House, Anand), Charotar publishing house , 50th Edition,2010.

REFERENCE BOOK:

1. Engineering Drawing by Prof.K.L.Narayana & Prof. R.K.Kannaiah, Scitech Publications , 2010.
2. Engineering Graphics with AutoCAD 2002 by James D. Bethune , PHI , 2011