

**year : First**

**Subject Title : Engineering Graphics**

**Subject Code : M105**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
L	T	P	Full Marks.	External Exam Marks	Internal Exam Marks	External Pas Marks	Total Pass Marks	Duration of External Exams
01		2	100+100	80+60	20+40	26 TH	40+50	4 Hrs (TH)

**NOTE:**

**Internal marks for theory will be allotted on the basis of two snap tests and 2 assignment of equal marks to be conducted by the faculty teaching the subject.**

**RATIONALE:**

Normally Graphical representation are used for expressing intents and contents. Engineering Graphics is the language of engineers. The concepts of Engineering Graphics are used to develop, express the ideas, and conveying the instructions which are used to carry out jobs in the field Engineering. The course illustrates the techniques of graphics in actual practice. This preliminary course aims at building a foundation for the further course in drawing and other allied subjects.

**OBJECTIVES:**

The student should be able to:-

- 1) Draw different engineering curves and know their applications.
- 2) Draw orthographic projections of different objects.
- 3) Visualize three dimensional objects and draw Isometric Projections.
- 4) Use the techniques and able to interpret the drawing in Engineering field.
- 5) Use computer aided drafting packages.

Chapter	Name of Topic	No. of Sheet	No. of Hr.	
			Theory	Practical
01.	1.1- Drawing Instruments and sheet layout 1.2- Letters and Numbers as per BIS: SP46-2003 1.3- Scale (Plane and diagonal scale)	02	01	06

02	2.1- 2.2- 2.3-	Curves and Conic Section To draw ellipse by directrix and arc of circle method To draw parabola by directrix and rectangle method To draw hyperbola by rectangle and directrix method.	01	02	06
03	3.1- 3.2-	Introduction to orthographic projection. Projection of point on principal, auxiliary and profile planes. Idea of shortest distance.	01	01	06
04	4.1- 4.2- 4.3-	Projection of straight line on principal plane in the following cases. Parallel to both H.P and V.P Inclined to one plane and parallel to other plane. Inclined to both plane.	01	02	06
05	5.1-	Projection of different simple shapes eg. Circle, Triangle, Rectangle, Pentagon, & Hexagon on principal plane (Inclined to one plane and to both planes)	01	02	06
06	6.1-	Projection of simple solid. Projection of Prism, Pyramid, Cone, Cylinder, and Cube with their axis inclined to one reference plane and parallel to other.	01	02	06
07	7.1- 7.2-	Section of simple solids with true shape of sectioned portion. Development of solid surfaces eg. Prism, Cylinder, Cone, Pyramid and Cubes.	01	02	06
08	8.1-	Isometric Scale and their use in drawing isometric views of single and compound solids. (Simple case only)	01	02	06
09	9.1-	Intersection of solids. Curves of intersection of the surfaces of the solids in the following case; a. Prism with Prism b. Cylinder with cylinder c. Prism with cylinder d. Cylinder with cone with different axis.	01	02	06

10	10.1-	Prospective Projection	01	02	04
11	11.1-	AutoCAD Basics, Layers, multi-layer images, graphic interfaces, different views to be drawn.	05	12	20
<b>Total--</b>			<b>16</b>	<b>40</b>	<b>80</b>

### Learning Resources:

#### a. Book-

Sl. No.	Author	Title	Publication
1.	N.D.Bhatt	Engineering Drawing	Charotkar Publishing House
2.	R.K.Dhawan	Engineering Drawing	S.Chand Co.
3.	K.R.Mohan	Engineering Graphics	Dhanpat Rai & Publication Co.
4.	P.J.Shah	Engineering Drawing	----
5.	P.S.Gill	Engineering Drawing	----
6.		Mastering AutoCAD	BPB Publication