

**1/4 B.Tech. FIRST SEMESTER
ENGINEERING GRAPHICS LAB**

CS1L3

Required

Credits: 2

Lecture: --

Internal assessment: 25 marks

Lab: 3 periods/week

Semester end examination: 50 marks

Course context and Overview: Course first presents the basics of drafting, starting with terminology, sketching, hand lettering and line types. After a discussion of multi-view drawing, students will work on an introductory sketching exercise.

Prerequisites: -

Objectives:

1. To improve imagination skills.
2. Increase ability to communicate with people.
3. Learn to sketch and take field dimensions.
4. Learn to take data and transform it into graphic drawings.
5. Learn basic engineering drawing formats.
6. Prepare the student for future Engineering positions.

Learning Outcomes:

The Student will be able to

1. Get acquainted with the knowledge of various lines, geometrical constructions and construction of various kinds of scales, conic sections and curves.
2. Improve their imagination skills by gaining knowledge about points, lines and planes.
3. Become proficient in drawing the projections of various solids and in determining the internal features of objects with the help of sectional views.
4. Gain knowledge about orthographic and isometric projections.

Unit - I

Polygons-Construction of Regular Polygons using given length of a side; Ellipse- Arcs of Circles and Oblong Methods; Scales-Vernier and Diagonal Scales.

Unit - II

Introduction to Orthographic Projections; Projections of Points; Projections of Straight Lines parallel to both planes; Projections of Straight Lines-Parallel to one and inclined to other plane.

Unit - III

Projections of Straight Lines inclined to both planes, determination of true lengths, angle of inclinations and traces.

Unit - IV

Projections of Planes; Regular Planes Perpendicular / Parallel to one Reference Plane and inclined to other Reference Plane; inclined to both the Reference Planes.

Unit - V

Projections of Solids-Prisms and Cylinders with the axis inclined to one Plane.

Unit - VI

Projections of Solids- Pyramids and Cones with the axis inclined to one plane.

Unit - VII

Conversion of Isometric Views to Orthographic Views.

Unit - VIII

Conversion of Orthographic Views to Isometric Projections and Views.

Learning Resources**TEXT BOOK:**

1. Engineering Drawing by N.D. Bhat, Chariot Publications

REFERENCE BOOKS:

1. Engineering Drawing by M.B. Shah and B.C. Rana, Pearson Publishers
2. Engineering Drawing by Dhananjay A. Jolhe, Tata McGraw Hill Publishers
3. Engineering Graphics for Degree by K.C. John, PHI Publishers