

1/4 B.Tech - SECOND SEMESTER

EC2L1

Engineering Graphics

Credits: 4

Lecture : -----

Internal assessment: 25 marks

Lab : 3 periods/week

Semester end examination: 50 marks

Course Objectives:

- To improve the student imagination skills
- To make the student get acquainted with the knowledge of master geometry, projection techniques, standards and conventions used in technical drawings and also become proficient in free hand lettering skills, dimensioning techniques etc.
- To impart the knowledge of orthographic views, projection of solids, interpenetration of solids
- To determine the internal features of objects with the help of section views.

Learning Outcomes:

- Upon completion of the course the student should be acquired the knowledge of engineering drawing practice used in practical design.
- Students should be able to employ tools and techniques of engineering practice like geometric construction, Scales, orthographic projections, Projections of Solids, Interpenetration of Solids, Conversion from Ortho to Iso and Vice Versa.

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 Books:**

1. Engineering Drawing, N.D. Bhat, Chariot Publications, 30th Edition, 1990.

Reference Books:

1. Engineering Drawing , M.B. Shah and B.C. Rana, Pearson Education, 2009.
2. Engineering Drawing, Dhananjay A. Jolhe, Tata McGraw Hill Education Pvt.Ltd., 2010.
3. Engineering Graphics for Degree, K.C. John, PHI Publishers, 2009