

2/4 B.Tech. THIRD SEMESTER

CE3L1 COMPUTER AIDED ENGINEERING DRAWING PRACTICE Credits: 2

Lecture: --

Internal assessment: 25 marks

Practice: 3 periods/week

Semester end examination: 50 marks

Objectives:

- To gain the basic knowledge and skills in engineering drawings and the capability to read and interpret blue prints and develop an understanding of 2D and 3D computer aided drafting with the requirements of good engineering drawings.

Learning outcomes:

After performing the experiments listed in the syllabus, the students will have:

- Basic knowledge and skills in computer aided engineering drawing of civil engineering structures.
- Understanding of 2D and 3D computer aided drafting.

PART A

UNIT –I

PROJECTIONS OF PLANES & SOLIDS:

Projections of Regular Solids inclined to both planes – Auxiliary Views. Sections and Sectional views of Right Regular Solids – Prism, Cylinder, Pyramid, Cone – Auxiliary views.

UNIT – II

DEVELOPMENT AND INTERPENETRATION OF SOLIDS:

Development of Surfaces of Right Regular Solids – Prisms, Cylinder, Pyramid Cone and their parts. Interpenetration of Right Regular Solids – Intersection of Cylinder Vs Cylinder, Cylinder Vs Prism, Cylinder Vs Cone.

UNIT – III

ISOMETRIC PROJECTIONS:

Principles of Isometric Projection – Isometric Scale – Isometric Views – Conventions – Isometric Views of Lines, Plane Figures, Simple and Compound Solids – Isometric Projection of objects having non- isometric lines. Isometric projection of Spherical Parts.

TRANSFORMATION OF PROJECTIONS:

Conversion of Isometric Views to Orthographic Views – Conventions.

UNIT – IV

PERSPECTIVE PROJECTIONS:

Perspective View: Points, Lines, Plane Figures and Simple Solids, Vanishing Point Methods (General Method only).

PART B

UNIT – V

INTRODUCTION TO COMPUTER AIDED DRAFTING:

Generation of points, lines, curves, polygons, dimensioning.

UNIT – VI

TYPES OF MODELING:

Object selection commands – edit, zoom, cross hatching, pattern filling, utility commands, 2D wire frame modeling, 3D wire frame modeling.

UNIT – VII

VIEW POINTS AND VIEW PORTS:

View point coordinates and view(s) displayed, examples to exercise different options like save restore, delete, joint, single option.

UNIT-VIII

COMPUTER AIDED SOLID MODELING:

Isometric projections, orthographic projections of isometric projections, modeling of simple solids, Modeling of Machines & Machine Parts.

Learning resources

Text books:

1. Engineering Graphics by John,K.C., PHI Publications, New Delhi, 2009.
2. Machine Drawing, (3rd edition) Narayana,K.L., Kannaiah,P. and Venkata reddy,K., New Age International Publishers, 2010.

Reference books:

1. “AutoCAD 2009”, Galgotia Publications, New Delhi, 2012.
2. Text book of Engineering Drawing with Auto-CAD, (4th edition) by Venkata Reddy, K., B.S. Publications, 2009.
3. Engineering drawing, (38th edition) by Bhatt, N.D., Anand Charotar Publications, 1997.