

II Year - I Semester

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### COMPUTER AIDED ENGINEERING DRAWING PRACTICE

**Course Objective:** To enhance the student's knowledge and skills in engineering drawing and to introduce drafting packages and commands for computer aided drawing and modelling.

#### UNIT-I:

**Objective:** The knowledge of projections of solids is essential in 3D modelling and animation. The student will be able to draw projections of solids. The objective is to enhance the skills they already acquired in their earlier course in drawing of projection.

**PROJECTIONS OF SOLIDS:** Projections of Regular Solids inclined to both planes – Auxiliary Views.

#### UNIT-II:

The knowledge of sections of solids and development of surfaces is required in designing and manufacturing of the objects. Whenever two or more solids combine, a definite curve is seen at their intersection.

**SECTIONS OF SOLIDS:** Sections and Sectional views of Right Regular Solids – Prism, Cylinder, Pyramid, Cone – Auxiliary views.

**DEVELOPMENT AND INTERPENETRATION OF SOLIDS:** Development of Surfaces of Right Regular Solids – Prisms, Cylinder, Pyramid Cone and their parts.

#### UNIT-III:

The intersection of solids also plays an important role in designing and manufacturing. The objective is to impart this knowledge through this topic. A perspective view provides a realistic 3D View of an object. The objective is to make the students learn the methods of Iso and Perspective views.

**INTERPENETRATION OF RIGHT REGULAR SOLIDS:** Intersection of Cylinder Vs Cylinder, Cylinder Vs Prism, Cylinder Vs Cone, Prism Vs Cone.

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

*In part B computer aided drafting is introduced.*

#### UNIT IV:

The objective is to introduce various commands in AutoCAD to draw the geometric entities and to create 2D and 3D wire frame models.

**INTRODUCTION TO COMPUTER AIDED DRAFTING:** Generation of points, lines, curves, polygons, dimensioning. Types of modeling : object selection commands – edit, zoom, cross hatching, pattern filling, utility commands, 2D wire frame modeling, 3D wire frame modeling,.

#### UNIT V:

By going through this topic the student will be able to understand the paper-space environment thoroughly.

**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 VI:

The objective is to make the students create geometrical model of simple solids and machine parts and display the same as an Isometric, Orthographic or Perspective projection.

COMPUTER AIDED SOLID MODELLING: Isometric projections, orthographic projections of isometric projections, Modeling of simple solids, Modeling of Machines & Machine Parts.

### Text Books :

1. Engineering drawing by N.D Bhatt, Charotar publications.
2. Engineering Graphics, K.C. John, PHI Publications

### References:

1. Mastering Auto CAD 2013 and Auto CAD LT 2013 – George Omura, Sybex
2. Auto CAD 2013 fundamentals- Elisemoss, SDC Publ.
3. Engineering Drawing and Graphics using Auto Cad – T Jeyapoovan, vikas
4. Engineering Drawing + AutoCAD – K Venugopal, V. Prabhu Raja, New Age
5. Engineering Drawing – RK Dhawan, S Chand
6. Engineering Drawing – MB Shaw, BC Rana, Pearson
7. Engineering Drawing – KL Narayana, P Kannaiah, Scitech
8. Engineering Drawing – Agarwal and Agarwal, Mc Graw Hill
9. Engineering Graphics – PI Varghese, Mc Graw Hill
10. Text book of Engineering Drawing with auto-CAD , K.Venkata Reddy/B.S . publications.
11. Engineering Drawing with Auto CAD/ James D Bethune/Pearson Publications
12. Engineering Graphics with Auto CAD/Kulkarni D.M, Rastogi A.P, Sarkar A.K/PHI Publications

End Semester examination shall be conducted for **Four** hours with the following pattern:

- a) Two hours-Conventional drawing
- b) Two hours – Computer Aided Drawing

