Engineering Graphics

F.Y. Diploma : Sem. I

EVALUATION SYSTEM

	Time	Marks
Theory Exam	–	–
Practical Exam	–	50#
Oral Exam	–	–
Term Work	–	50@

External Assessment, @ Internal Assessment

SYLLABUS

1. Principles of Drawing

Specific Objective

- Use Instruments for drawing, Scales, Lines, & there applications.
- Draw a basic 2-D geometrical entities using CAD.

1.1 Drawing Instruments and their uses

- Standard sizes of drawing sheets (ISO-A series
- Letters and numbers (single stroke vertical)
- Convention of lines and their applications.
- Scale (reduced, enlarged & full size) plain scale and diagonal scale.
- Dimensioning technique as per SP-46 (Latest edition) - types and applications of chain, parallel and coordinate dimensioning

1.2 Introduction to CAD software (Basic commands like draw, modify).

- Advantages of CAD
- Geometrical constructions

2. Engineering curves & Loci of Points.

Specific Objective

- Draw Conic curves, involute, Cycloid & know their applications
- Draw helix, spiral & loci of points from given data.

2.1 Conic Section

- To draw an ellipse by Arcs of circle method & Concentric circles method.
- To draw a parabola by Directrix and focus method &Rectangle method
- To draw a hyperbola by Transverse Axis and focus method & rectangular hyperbola (Inclined axes).

2.2 Engineering Curves

- To draw involutes of circle & pentagon,
- To draw a cycloid, epicycloids, hypocycloid
- To draw Helix & Archimedean spiral.
- Loci of points on any link of (i) 4 bar mechanism and (ii) Single slider crank mechanism with given specifications.

3. Orthographic Projections

Specific Objective

– Visualize, interpret & draw orthographic views from given pictorial view.

- Introduction to Orthographic projections.
- Conversion of pictorial view into Orthographic Views (First Angle Projection Method Only) - elevation, plan and end view
- Selection of section plains and drawing sectional view (simple object)

4. Isometric Projections

Specific Objective

– Visualize interpret & draw isometric view from given orthographic views

- Isometric scale, comparison of true scale with isometric scale
- Conversion of orthographic views into isometric View/projection

Reference Books

1. Engineering Drawing (*N. D. Bhatt*), Charotar Publishing House, 2010.
2. Engineering Drawing (*Amar Pathak*), Dreamtech Press, 2010.
3. Engineering Drawing (*D.Jolhe*), Tata McGraw Hill Edu., 2010.
4. Engineering Drawing (*M.B.Shah, B.C.Rana*), Pearson, 2010.
5. Engineering Drawing (*R. K. Dhawan*), S. Chand Co., Reprint 2010.
6. Text Book on Engineering Drawing (*K. L. Narayan, P. Kannaiah*), Scitech Publications, 24th Reprint August 2011.
7. Engineering Drawing and Graphics + AutoCAD (*K. Venugopal*), New Age Publication, Reprint 2006.
8. Engineering Drawing Practice for schools and colleges. (*IS Code, SP - 46*).

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