ENGINEERING DRAWING- II
BEG 147ME

Year:1 **Semester: II**

Teaching schedule Hours/ Week			Examination Scheme						Total Marks
			Final				Internal Assessments		
			Theory		Practical		Theory	Practical	
L	P	T	Duration	Marks	Duration	Marks			
1	3	-	-	-	3	40	10	50	100

Course Objectives: To develop a good understanding of isometric and orthographic projection drawings, assembly & disassembly drawing of machine components and other basic engineering drawings in civil, electronic, electrical and geographical.

Course Content:

1.0 Pictorial Projections : (12 Hrs)

1.1 Introduction: Character, advantage and disadvantages.
1.2 Axonometric Projection: Isometric drawing, diametric and trimetric drawing
1.3 Oblique Projection
1.4 Perspective projection

2.0 Design and Production Drawing- Machine Drawing : (16 Hrs)

2.1 Introduction: Production of complete design and assembly drawings
2.2 Fundamental Techniques: Size and location dimensioning
Placement of dimension lines and general procedures
Standard dimensioning practice (SI system)
2.3 Limit Dimensioning: Nominal and basic size, allowance, tolerance, limits of size, clearance fit, interference fit
Basic whole system and shaft systems
2.4 Threads and standard machine Assembly Elements
Screw threads: ISO standards, representation and dimensioning
Fasteners: type and drawing representation keys, collars, joints, springs, bearings

3.0 Welding and Riveting: (6 Hrs)

3.1 Representing joints and welds for Gas, Arc and Resistance welding; Types: Spot, Seam, Flash, Fillet, Back-Back, Surface and Upset welds
3.2 Drawing symbols for welds
3.3 Rivets and riveted joints: Types and drawing representation

4.0 Piping Diagrams: (4 hrs)

4.1 Piping, Tubing and Types of joints
4.2 Specification of threads, Fittings and valves
4.3 Standard Piping symbols
4.4 Piping Drawing and Symbolic Diagrams

5.0 Other Engineering Drawing (10 Hrs)

5.1 Civil Drawings: Steel Construction, Wood Construction, Concrete Construction, Masonry and stone Construction.

5.2 Electrical and Electronic diagram Standards
Types of Diagrams, Line diagrams, schematics and pictorials Symbol for Components Printed Circuits, Integrated circuits

5.3 Geographical Drawing
Topographical Maps, Cadastral Maps, Engineering Maps

5.4 Graphs, Charts and Nomograms: Rectangular Coordinate Graphs, Charts, Nomograms

5.5 Duplicating and Reproduction of Engineering Drawings: Blue prints, Brown Prints and Blue-Line prints Duplicate, Tracings, Photocopies

6.0 Computer Software Used in Drawings (12 hrs)

6.1 An introduction to Auto CAD (Computer Aided Design)

LABORATORIES: (3hr/week, 12 weeks)

(i.) Isometric and Oblique Drawings
(ii.) Oblique drawing, Perspective Drawing
(iii.) Machine Drawing: Sizing and dimensioning
(iv.) Machine Drawing : Detail drawing, dimensioning and tolerance
(v.) Threads and Fasteners
(vi.) Welding, Joining and Piping
(vii.) Structural Drawing
(viii.) Electrical and Electronics Diagrams
(ix.) Topographical and Engineering Maps, Graphs, Chart and Nonograms and Drawing, Reproduction of Drawings.
(x.) Machine Drawing by using Auto CAD 2007.
(xi.) Building Drawing by using Auto CAD 2007 .

References:

- "Fundamentals of Engineering Drawing ", W.J. Luzadder, prentice Hall,8th Edition,1981
- "Engineering Drawing and Graphic Technology",T.E. French,C.J.vierck and R.J.foster, Mc Graw Hill, 1981
- "Technical Drawing ", F.E.Giesecke,A.Mitchell,H.C. Spencer and J.C. Dygdone ,Macmillan, 8th Edition, 1986
- Machine Drawing
  "Text book of Engineering Drawing '', Gurucharan Singh and Jagdishlal
- " Auto CAD 2000", George Omura