

Subject Code: 2ET4000207	Subject Title: Mechanical Drafting
Pre-Requisite	--

Rationale:

The students of mechanical engineering are mainly involved in drafting, manufacturing, inspection and planning activities in industries. For all such activities, the students have to draw, read and understand these drawings correctly for production of components and assemblies accurately and precisely. The industrial practices of drafting are also important for the students to make them aware of drafting practices, symbols, codes, norms and standards generally used in industries. Development of sketching ability make the students strengthen effectively in engineering communication & presentation.

Course Objective:

1. Prepare engineering drawings using codes, norms and standards
2. Interpret basic engineering drawings for various planning, inspection and manufacturing activities.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment
2	-	8	6	60	40	40	60

Course contents:

SR. NO.	TOPIC	TOTAL HOURS	WEIGHTAGE (%)
1.	Projections of Solids Types of solids (prism, pyramid, cylinder, cone), Projections of solids - in various positions with respect to the reference planes. (Parallel, perpendicular and inclined to HP and / or VP	6	20%
2.	Sections of Solids Sectional views of different solids in given various positions. True shape of section. (prism, pyramid, cylinder, cone)	6	20%

3.	Development of Surfaces Importance of development of surfaces, Drawing of development of surfaces of prism, pyramid, cylinder and cone.	6	20%
4.	Welded Joints, Piping and Drafting Symbols Weld symbols as per BIS-813 / ASME (Primary Symbols & Supplementary Symbols). Weld nomenclature. Weld dimensions. Pipe - types, standards and designation methods. Pipe line symbol as per passing fluid, air, gas, water etc. Piping fitting symbols. Pipe line diagram. Machining symbol (surface roughness symbol) and its interpretation. Geometrical symbols and its interpretation.	4	20%
5.	Computer Graphics Introduction to General features, Basic drawing and Editing commands, Use of dimensioning utilities, Prepare copy from Auto CAD	6	20%

List of Practical/Experiments

Sr. No.	Practical Exercises
1	Draw the projection of solids for Prism, Pyramid, Cylinder and Cone.
2	Draw the sectional elevation, Top view and true shape of Prism, Pyramid, Cylinder and Cone.
3	Draw development of surface of prism, pyramid, cylinder and cone
4	Draw Welded Joints, Piping Joints & Drafting Symbols.
5	Draw the sectional views for given four problems by using CAD software.
6	Draw the details of all parts for four given assembly by using CAD software.
7	Draw the assembly drawing of all parts for given four details by using CAD software and also prepare the parts list.

Course Outcome:

After completions of this course, students will able to:

1. Understand the different sections of solids.
2. Prepare the development of any given surface.
3. Draw the different sectional views of an object.
4. Draw the detail and assembly drawing.

SOFTWARE/LEARNING WEBSITES

• References:

1. Engineering Drawing, N.D. Bhatt, Charotar Publishing House, Anand.
2. Engineering Drawing, K.R. Gopalakrishna, Subhash Publications, Bangalore.
3. Engineering Drawing, P.J. Shah, S. Chand, New Delhi.
4. Engineering Graphics, M.B. Shah, B.C. Rana, Pearsons

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand the different sections of solids.	2 Understanding
CLO2	Prepare the development of any given surface.	5 Evaluate
CLO3	Draw the different sectional views of an object.	2 Understanding, 3 Applying
CLO4	Draw the detail and assembly drawing.	2 Understanding, 3 Applying
CLO5	Sketch orthographic projections into isometric projections and vice versa.	2 Understanding, 3 Applying

Course Learning Outcomes	Program Outcomes (Pos)												Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CLO1	H	L											M		
CLO2	H		M		M								M	M	
CLO3	M	L	M										L	L	
CLO4	M												M	L	
CLO5	M	L											M	L	

H:High, M:Medium, L:Low