

MACHINE DRAWING AND WORKSHOP TRAINING

Subject Code : QPME-102
Weekly load :08
LTP :0-0-8
Credit :01

COURSE OUTCOMES:

After successful completion of the course, the students should be able to:

CO1: Understand various symbols used in engineering drawing.

CO2: Read, understand and draw engineering drawing for various engineering components.

CO3: Understand and use various tools and equipments used in workshop.

CO4: Operate various machines installed in a workshop.

CO5: Select and recommend a suitable machine /equipment for a particular application.

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	2	2	1	3	1	2	2	2	2
CO2	3	2	3	2	2	1	2	1	2
CO3	3	2	2	3	1	2	2	2	1
CO4	3	2	3	3	2	1	2	2	2
CO 5	3	2	3	3	2	1	2	2	1
Avg.	2.8	2.0	2.4	2.8	1.6	1.4	2.0	1.8	1.6

Course Description	Lecture(s)
Unit-I (Machine Drawing)	
Basics of Machine Drawing	06
Machining symbols, welding and riveting symbols, surface finish characteristics, types of fits	
Screw Threads	12
Screw thread nomenclature, thread designation, conventional representation of screw threads, different types of threads and their representation.	
Fastenings	12
Nut, bolt and washer; types of nuts, types of bolts, permanent fasteners; types of welded joints, welding symbols	
Keys, Cotters and Joints	12
Introduction, proportions of a key, types of keys and their applications. A Cotter and a Gib with their uses. Types of joints used for connecting rods.	
Rivets and Riveted Joints	10
Types of rivets, types of riveted joints, general terms/rules used for riveted joints.	
Assembly and detail drawings	12
One assembly drawings of a Tail stock, details (drawings of different elements) of a screw jack assembly.	

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Unit-II (Workshop Training)	
Machine Shop	16
Practice of drilling and boring	
Practice of thread cutting	
Making a V-Block on shaper	
Tool Room	16
Plain milling on a flat surface using universal milling/horizontal milling machine	
Surface grinding using surface grinder	
Sharpening a cutting tool using tool and cutter grinder	
Welding Shop	16
Making butt joint using gas welding	
Making butt joint using SMAW in flat position	
Making lap joint using SMAW in vertical position	
Forging Shop	16
Making a chisel from a round bar	
Making Allen-Key from a square bar	

Total =128

Recommended Books		
Title	Author(s)	Publisher
Machine Drawing	ND Bhatt	Khanna
Machine Drawing	P SGill	Standard
Machine Drawing	Goutam Pohit & Goutam Ghosh	Pearson Education
Workshop Technology	B S Raghuwanshi	Dhanpat Rai & Co.
Workshop Technology Vol-II	SK Hajra Chaudhury	Media Promoter



 AS, J, M, S, K, P, R, 24/13