

Branch Name:	Computer Engineering / Information Technology / Artificial Intelligence and Data Science / Information and Communication Technology / Mechanical Engineering / Civil Engineering/ Electrical Engineering / Robotics & Automation / Artificial Intelligence & machine learning / Electronics& Communication Engineering/ AI Powered Cloud and DevOps
Program Code:	ET103 / ET105 / ET108 / ET107 / ET101 / ET106 / ET109 / ET113/ ET114 / ET115/ ET116
Course Title:	Manufacturing Practice Workshop
Course Code:	2ET1000115P
Pre-requisite Course:	Zeal to learn the subject

Course Objectives:

- CO1. This exercise also aims in inculcating respect for physical work in addition to some amount of value addition by getting exposed to interdisciplinary engineering domains.
- CO2. Exposure to Industrial environment, work culture, hand tools and general-purpose machine developing Creativity, Craftsman skill, approach to work and planning capability.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
01	-	-	02	02	-	-	-	-	10	25	10	25	50

Course Contents:

Unit No	Topic	Total Hours	Weightage (%)
1	Introduction: Introduction about workshop and study about safety rules.	02	10
2	Fitting: Term work to include one job involving following operations: filing to size, one simple male- female joint, drilling and tapping.	06	30
3	Carpentry: Use and setting of hand tools like cutting, filing, marking, saw, Try square, Gauge etc.	05	20
4	Tin Smithy: Use of sheet metal, working hand tools, cutting and bending.	02	10
5	Plumbing: Use of plumbing tools, spanners, wrenches, threading dies, demonstration of preparation of a domestic line involving fixing of a water tap and use of coupling, elbow, tee, and union etc.	02	10
6	Welding: Introduction to Gas welding, Arc Welding, and Resistance spot Welding. At least one welding should perform in each group.	02	10
7	Introduction about Machine Shop: Lathe Specification and Demonstration of Various operations on Lathe Machine.	02	10

Reference Books:

1. A Course in Workshop Technology, Vol – I by B. S. Raghuvanshi, Dhanapat Rai and Sons.
2. Elements of Workshop Technology, Vol – I, Hajara Choudhari, Media Promoters & Publishers Pvt. Ltd.
3. Workshop Technology, Vol – I by Gupta and Kaushik, New Heights.
4. Workshop Technology, Vol – I, Chapman, The English Language Book Society.
5. Workshop Technology, Vol.-I by H.S.Bawa, TMH Publications, New Delhi.

Lab/Practical:

Students are required to prepare one job each in any three of the four shops viz. Fitting, Carpentry, Smithy and Tin smithy.

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

Course Outcomes	Description	Bloom's Taxonomy Level
CLO1	To understand required safety measures in workshop	Understanding (2)
CLO2	To expose on hand training regarding various practical applications like Fitting, Carpentry, Welding, Plumbing, Tin Smithy.	Remembering (1)
CLO3	Prepare fitting models according to drawings using hand tools- V-block, marking gauge, files, hack saw, drills etc.	Applying (3) Analyze (4)
CLO4	To Understand operational symbols	Understanding (2) Creating (6)
CLO5	Practical method of explaining the core subject and the philosophy of the subject	Evaluating (5)
CLO6	To read working drawings	Understanding (2)

Mapping of CLO with PO and PSO:

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	PSO4
CLO1	M	M	L			M	L				L		L			
CLO2			M	M	L	L							L			
CLO3		L	L		H			L	M	M			M			
CLO4		L	M		M			L	M	M				M		
CLO5		M		M	L		L							L		
CLO6								M		M	L	L	L			

H: High, M: Medium, L: Low