Engineering Workshop

(For EEE, ECE and CSE branches)

Course Code	23ES1151	**Year**	I	**Semester**	I
Course Category	Engineering Science	**Branch**	ECE	**Course Type**	Lab
Credits	1.5	**L-T-P**	0-0-3	**Prerequisites**	Nil
Continuous Internal Evaluation	30	**Semester End Evaluation**	70	**Total Marks**	100

Course Outcomes	
CO1	Identify workshop tools and their operational capabilities. L3
CO2	Practice on manufacturing of components using workshop trades including fitting, carpentry, foundry, and welding L3
CO3	Apply fitting operations in various applicationsL3
CO4	Apply basic electrical engineering knowledge for House Wiring Practice L3

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: High, 2: Medium, 1: Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2			3	1		1			2		1
CO2	3	2	2		3	1		2	1		1		1
CO3	3	2	3	1	2			2		1	1		1
CO4	3	2	2	1	3	2	1	2	1	1	2		1

Syllabus

Expt. No.	Contents	Mapped CO's
1	Demonstration: Safety practices and precautions to be observed in workshop.	CO-1
2	**Wood Working:** Familiarity with different types of woods and tools used inwood working and make following joints. a) Half – Lap joint b) Mortise and Tenon joint c) Corner Dovetail joint or Bridle joint	CO-1,2
3	**Sheet Metal Working:** Familiarity with different types of tools used in sheet metal working, Developments of following sheet metal job from GI sheets. a) Tapered tray b) Conical funnel c) Elbow pipe d) Brazing	CO-1,2

4	**Fitting:** Familiarity with different types of tools used in fitting and do thefollowing fitting exercises a) V-fit b) Dovetail fit c) Semi-circular fit d) Bicycle tire puncture and change of two-wheeler tire	CO-1,2,3
5	**Electrical Wiring:** Familiarity with different types of basic electrical circuitsand make the following connections. a) Parallel and series b) Two-way switch c) Godown lighting d) Tube light e) Three phase motor f) Soldering of wires	CO-1,4
6	**Foundry Trade:** Demonstration and practice on Moulding tools and processes, Preparation of Green Sand Moulds for given Patterns.	CO-1,2
7	**Welding Shop:** Demonstration and practice on Arc Welding and Gas welding. Preparation of Lap joint and Butt joint	CO-1,2
8	**Plumbing:** Demonstration and practice of Plumbing tools, Preparation of Pipe joints with coupling for same diameter and with reducer for differentdiameters.	CO-1,2
9	**Basic repairs of Two-wheeler vehicle** – Demonstration of working of two- wheeler vehicle and its repairs.	CO-1

Learning Resources

Text Books

1. Felix W., Basic Workshop Technology: Manufacturing Process, Independently Published, 2019. Workshop Processes, Practices and Materials; Bruce J. Black, Routledgepublishers, 5th Ed. 2015.
2. B.S. Raghuwanshi, Dhanpath Rai & Co., A Course in Workshop Technology Vol I. & II, 2015 & 2017.

Reference Books

1. Elements of Workshop Technology, Vol. I by S. K. Hajra Choudhury & Others, MediaPromoters and Publishers, Mumbai. 2007, 14th Ed.
2. Workshop Practice by H. S. Bawa, Tata-McGraw Hill, 2004.
3. Wiring Estimating, Costing and Contracting; Soni P.M. & Upadhyay P.A.; Atul Prakashan, 2021-22.