COURSE CONTENT

ENGINEERING WORKSHOP

I Semester : CE / CSD / CSM / ECE / EEE / ME

II Semester: CSE

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
25X0371	Foundation	0	0	2	1	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 30				Total Classes: 30		

Prerequisites: **There are no prerequisites to take this course.**

Course Overview:

This course introduces basic workshop practices through carpentry, fitting, tin-smithy, blacksmithy, house wiring, and welding operations. Students learn various tools, safety practices, and step-by-step manufacturing processes used in traditional and modern workshops. Carpentry and fitting cover common joints and fitting operations used in product fabrication and assembly. Tin-smithy and blacksmithy expose students to sheet-metal work and the oldest metal forming methods. House wiring and arc welding develop understanding of electrical installations and metal joining techniques for practical engineering applications.

Course Objectives:

1. To Study of different hand operated power tools, uses and their demonstration.
2. To gain a good basic working knowledge required for the production of various engineering products.
3. To provide hands on experience about use of different engineering materials, tools, equipment's and processes those are common in the engineering field.
4. To develop a right attitude, team working, precision and safety at work place.
5. It explains the construction, function, use and application of different working tools, Equipment and machines

Course Outcomes: After Completion of the Course, Students should be able to

1. Explain the design and model different prototypes in the carpentry trade such as Cross lap joint, Dove tail joint. (L4)
2. Demonstrate the design and model various basic prototypes in the trade of fitting such as Straight fit, V- fit. (L4)
3. Understand to make various basic prototypes in the trade of Tin smithy such as rectangular tray, and open Cylinder. (L4)
4. Demonstrate the design and model various basic prototypes in the trade of Welding. (L4)
5. Explain to make various basic prototypes in the trade of Black smithy such as J shape, and S shape. (L4)

UNIT – 1: CARPENTRY & FITTING

- **Carpentry** – Introduction, Carpentry tools, sequence of operations and applications (T-

Lap Joint, Dovetail Joint, Mortise & Tenon Joint)

- **Fitting** – Introduction, fitting tools, sequence of operations and applications (V- Fit, Dovetail Fit & Semi-circular fit)

Learning Outcomes: Students should be able to,

- Understand the trade of carpentry and fitting. (L2)
- Explain the tools involved in manufacturing operations. (L3)
- Evaluate the applications of carpentry and fitting. (L4)

UNIT – 2 TIN SMITHY AND BLACKSMITHY

- **Tin-Smithy** –Introduction, Tin smithy tools, sequence of operations and applications (Square Tin, Rectangular Tray & Conical Funnel).
- **Blacksmith**-Introduction, Blacksmith tools, sequence of operations and applications (Round to Square, Fan Hook and S-Hook) Understand the oldest manufacturing methods. (L2)

Learning Outcomes: Students should be able to,

- Understand the oldest manufacturing methods. (L2)
- Describe the sequence of operations involved. (L3)
- Explain the safety precautions and tools usage. (L4)

UNIT – 3 HOUSE WIRING AND WELDING

- **House-wiring** – Introduction, Electrical wiring tools, sequence of operations and applications (Parallel & Series, Two-way Switch and Tube Light)
- **Welding Practice** – Introduction, electrode, welding tools, and sequence of operations. Advantages and applications (Arc Welding)

Learning Outcomes:

- Students should be able to,
- Discuss the topic of House Wiring(L3)
- Explain Safety precautions of welding (L4)

TEXTBOOKS:

1. Workshop Practice /B. L. Juneja / Cengage
2. Workshop Manual / K. Venugopal / Anuradha.

REFERENCE BOOKS:

1. Work shop Manual – P. Kannaiah/ K. L. Narayana/ SciTech
2. Workshop Manual / Venkat Reddy/ BSP

ELECTRONIC RESOURCES:

1. https://www.youtube.com/watch?v=czqxcwYzr7E
2. https://www.youtube.com/watch?v=0wgHWeuX4pc
3. https://www.youtube.com/watch?v=X3cLoNjMmxc

4. https://www.youtube.com/watch?v=j-xk2FvcAz4&list=PLoeKEfFsoDPQVwJUUwLITprairDw15IkW

MATERIALS ONLINE:

1. Lab Manual
2. Open Ended Experiments