

# WORKSHOP PRACTICE (LAB) EE-102L

Pre-requisite: None  
Credit Hours 01  
Contact Hours 48

## RECOMMENDED BOOKS

- Workshop Practice Lab Manual.

## REFERENCE BOOKS

- Choudhury, "Elements of Workshop Technology", Vol. 1, MPP.
- Chapman, "Workshop Technology", Part-I,II,III, CBS.

## OBJECTIVE OF COURSE

This lab aims to deliver the students hands-on experience on electrical equipment in workshop besides giving them insight about electrical safety, safety regulations, electric shocks and treatment. The main objectives of this lab stresses on delivering general concepts on electrical wiring regulations and testing, electric accessories and tools. In this lab, students will also learn electric soldering and soldering tools; soldering methods and skills, PCB designing, transferring a circuit to PCB, etching, drilling and soldering component on PCB testing. To sum up, this lab enables students to understand the electrical and electronic circuits generally and gives them confidence to troubleshoot associated problems.

S.NO	CLO/PLOS MAPPING	DOMAIN	PLO
01	<b>Observe</b> different workspace safety regulations and recognize electrical wiring standards.	P1	01
02	<b>Operate</b> under supervision on various tools and wiring of electrical equipment.	P3	03
03	<b>Designing</b> and fabrication of beginner level printed circuit boards.	P7	09

## LAB CONTENTS

1. Workshop safety precautions and practical demonstration of safety equipment, tools and safety gear.
2. Demonstration on electrical workshop tools and accessories and schematic designing of circuits with standard circuit symbols.
3. Familiarization with different types of electric cables, wiring standards and practical demonstration on insulation testing using megger tester.
4. Familiarization with different types of electrical fuses, circuit breakers energy meters.
5. Fabrication of switch controlled electrical circuits like lamps and sockets.
6. Logic based wiring of electric circuits with two-way switches.
7. Wiring of electric bell, fan speed regulation and tube-light control circuits.
8. Introduction to earthing standards and complete house wiring concepts.
9. Introduction to circuit schematic designing and simulation using Proteus.
10. Introduction to circuit layout designing using Proteus.
11. Demonstration on PCB printing, etching, drilling and component mounting. and soldering of components upon it.
12. Demonstration on soldering components and evaluation of complete PCB design.
13. Semester Project.