C.U.SHAH UNIVERSITY

FACULTY OF: - Technology & Engineering
DEPARTMENT OF: - Electrical Engineering
BRANCH: Electrical & Electronics Engineering
SEMESTER: - III
COURSE:- B.Tech
CODE: - 4TE03EWP1
NAME – Electrical Workshop Practice

Teaching & Evaluation Scheme

Subject Code	Name of the Subject	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
							Theory				Practical (Marks)			Total
		Th	Tu	Pr	Total		Sessional Exam		University Exam		Internal		University	
							Marks	Hrs	Marks	Hrs	Pr/Viva	TW	Pr	
4TE03EWP1	Electrical Workshop Practice	0	0	2	2	1	--	--	--	--	50	50	---	**100**

Objectives

- To study various electrical workshop component using in our residential area and conservation of energy.
- To study design and implementation of electrical circuits using electrical components.

Prerequisites

- Basics of Electrical AC and DC Components Practices and Energy Conservations

Course Outlines

Sr. No.	Course Contents	Hours
1	**Electrical Theory:** List voltage sources, AC and DC, batteries and natural generation, List Ohms law formulas for current, voltage, resistance and power. Solve math problems utilizing Each, Calculate power consumption and requirements, Explain the differences between current, voltage and power, Explain basic uses for electricity	06
2	**Electronic Components:** Introduction of AC Components, Applications, Characteristics, Introduction of DC Components, Applications, Characteristics	04
3	**Soldering-Desoldering and Tools:** Describe solder safety as it pertains to burns and potential fires or damage to facilities or customer products, Explain the cause of solder fumes and the effects of lead poisoning, Explain the reasons for flux usage and describe types, List types of solder and reasons for choosing each, Explain desoldering principles, Describe	06

	various types of desoldering equipment and how it is used, Demonstrate the use of braid-wick solder removers	
4	**Block & Schematics-Wiring Diagrams:** Draw common electrical/electronic symbols, Explain how block diagrams are used for troubleshooting and maintenance of electronics products, Explain the differences between wiring prints, schematics and block diagrams, Describe the purpose and use of test points.	04
5	**Cabling:** List wire types and construction, List common identifications for copper cables, Explain major differences between copper, coaxial and fiber optic cables, earthing wire and types of earthing	04
6	**Safety Precautions:** Describe the physiological reactions electrical shock causes; list various degrees of current the human body can tolerate, Explain the concept of First Aid and its particular importance to workers in electric and electronics fields; explain precautions for untrained people, Describe the types and usage of fire extinguishers.	04

Learning Outcomes

- The students would be able to design and implement various electrical components like AC power components, DC power components, cabling, block diagram, wire diagram, earthing. These electrical components are the fundamental knowledge of energy conservation and safety precautions.
- **Books Recommended**

1. **Electricity; Principles and Applications,7E;** Fowler; ISBN 978-0073106991; Glencoe/McGraw Hill, 2008

2. **Electronics Principles, 7E;** Malvino, Bates; ISBN 978-0073222776; McGraw-Hill Higher Education; 2007

3. **Basic Electronics Theory With Projects & Experiments, 4E**; Horn; ISBN 978-0830642007; McGraw-Hill/TAB Elec. 1993