



C.U.SHAH UNIVERSITY

FACULTY OF: - Technology & Engineering
DEPARTMENT OF: - Instrumentation & Control Engineering
SEMESTER: - III
COURSE:- B.Tech
CODE: - 4TE03IWP1
NAME – Instrumentation Workshop Practice

Teaching & Evaluation Scheme

Subject Code	Name of the Subject	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total
							Sessional Exam		University Exam		Internal		University	
							Marks	Hrs	Marks	Hrs	Pr/Viva	TW	Pr	
4TE03IWP1	Instrumentation Workshop Practice	0	0	2	2	1	--	--	--	--	50	50	---	100

Objectives

- To study and identify the basic electronic components and devices.
- To understand the data sheets and manuals of various electronic devices.
- To develop the soldering skills and implement in form of mini-project.

Prerequisites

- Basic of Semiconductors and material science.

Course Outlines

Sr. No.	Course Contents
1	Study and identification of electronic components such as resistors, capacitors, inductors, AF and RF transformers, coils, relays, reed switches, PCB connectors, LED, LCD display etc.
2	Measure voltage, current, power, power factor for single and three phase supply
3	Testing and identification of electronic devices such as PN junction, Transistors, FETs, MOSFETs, UJT, SCRs, Diacs, Triacs, bridge rectifiers, TTL & MOS ICs, Operational Amplifiers etc.
4	Wired MCB, ELCB
5	Use of data books, specification and commercial identification of components and devices.
6	Soldering and de-soldering practice.
7	Use of breadboard and general purpose PCBs.
8	Study of PCB design techniques and processes, PCB circuit tracing exercise.

Learning Outcomes

- Students would be adept with simple wiring & soldering practice.
- Students would be able to design & implement mini project on PCB.

Books Recommended

1. **Electricity; Principles and Applications,7E**; Fowler; Glencoe/McGraw Hill, 2008
2. **Electronics Principles, 7E**; Malvino, Bates; McGraw-Hill Higher Education; 2007
3. **Basic Electronics Theory With Projects & Experiments, 4E**; Horn; McGraw-Hill/TAB Elec. 1993