

## C.U.SHAH UNIVERSITY – Wadhwan City



**FACULTY OF:** Technology and Engineering (Diploma Engineering)

**DEPARTMENT OF:** Electrical Engineering

**SEMESTER:** - IV

**CODE:** -2TE04EEW1

**NAME –** Electrical And Electronics Workshop (EEW)

### Teaching & Evaluation Scheme:-

Subject Code	Subject Name	Teaching Scheme (Hours)				Credits	Evaluation Scheme							
		Th	Tu	Pr	Total		Theory				Practical (Marks)			Total Marks
							Sessional Exam		University Exam		Internal		University	
							Marks	Hours	Marks	Hours	Pr	TW	Pr	
2TE04EEW1	Electrical And Electronics Workshop (EEW)	0	0	2	2	1	-----	-----	-----	-----	50	50	-----	100

### Objectives:-

- Identify the Various Parts of Common Electrical & Electronic Circuits.
- Explain the Principle of Operation of these Circuits.
- Troubleshoot Common Faults that can occur in these Circuits.

### Prerequisites: -

- Basic Knowledge of Fundamental Electrical Concepts.

### Course Outlines:-

Sr. No.	Course Contents	No Of Hours
1	<b>Electrical Tools &amp; Meters</b> Use Various Electrical Tools and Measuring Instruments. Pliers, Nose Plier, Cutter, Screw Driver, Tester, Test Lamp, Soldering Iron Etc. Use Various Electrical Meters Ammeter, Voltmeter, Wattmeter, Clip on Meter, Multimeter, Megger, Etc.	6
2	<b>Basic Electrical Wiring &amp; Cables</b> Single Switch Single Lamp Wiring, Stair Case Wiring, Godown Wiring, Tube Light Wiring, Corridor Wiring, Single Core Cable, Multicore Cable, Single Strand Wire, Multi Strand Wire, Shielded Wire	4
3	<b>Electrical &amp; Electronic Components</b> Select/Identify Different Types of Resistors. Rheostat, Wire Wound Resistor, Carbon Film Resistor, Carbon Composition Resistor, Fixed and Variable Potentiometer Etc. Select /Identify Different types of Capacitors. Paper Capacitor, Electrolytic Capacitor, Ceramic Capacitor, Polyester, Gang Capacitor, Types of Inductors. Identification of Different Electronic Components, Diode, Transistor Etc. Testing of Diode, Testing of Transistor.	6
4	<b>Electrical Switches</b> Toggle Switch, Rotary Switch, Push Button Switch, Micro Switch, MCB, ELCB, Etc.	4

5	<b>Earthing And Electrical Safety</b> Undertaking Pipe Earthing, Earthing, Pipe Earthing, Plate Earthing, Electrical Safety Tools Electrical Safety Rules , I.E. Rules for Electrical Hazards and Accidents	4
6	<b>Project Work</b> Small Circuit Implementation on PCB, Operating & Testing of Project.	6

### List of Experiments:-

- Identify Various Tools Used for Wiring.
- Identify the Symbols Used in Electrical Circuit Diagrams.
- Identify and Connect Various Electrical Measuring Instruments and Measure Various Electrical Parameters Like Current, Voltage, Power.
- Use Common Testing Instruments Used in Electrical Workshops:  
1: Test Lamp. 2: Line Tester. 3: Multimeter. 4: Clamp-On Meter. 5; Megger.
- Identify and Specify Different Types of Conducting, Insulating Materials, Resistors, Capacitors and Inductors as Per Standard Colour Code Practice.
- To Study Testing of Diode.
- To Study Testing of Transistor.
- Identify Different Types of Domestic Wirings.
- Know the Working of Various Electrical Circuit Protective Devices (Fuse, MCB,ELCB)
- To Study about Pipe Earthing.
- To Study about Plate Earthing.
- To Study about Electrical Safety Rules, I.E. Rules For Electrical Hazards And Accidents.
- Prepare Simple Electronic Circuit on PCB.
- Prepare Simple Electrical Domestic Wiring Diagram Implementation.
- Prepare Electrical Earthing System.
- Prepare a Meter Board For Lighting and Power Installation Using MCB, Energy Meter, Fuse Unit, DP Switch, Indicators and Bus Bars.

### Learning Outcomes:-

- Application & Importance of Electrical & Electronic Components.
- Definition & Identification of Various Electrical Protective Devices.
- Knowledge of Electrical Wiring.
- Knowledge of Different Electrical Safety Rules.

### Books Recommended:-

- Elements of Electrical Engineering, **J.B.Gupta** ,S.K.Katariya & Sons
- A Text Book of Electrical Technology, **B.L.Theraja & A.K.Theraja**, S.Chand & Company Ltd.
- A Hand Book of Electrical Engineering, **S.L.Bhatiya**, Khanna Publication