



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Diploma in Vocation (D.Voc), 3rd Semester

Branch: Electrical Wiring

Subject Name: Electronics Engineering Practices Lab

Subject Code: 1230803

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	P	OJT		Theory		Tutorial/ Practical		
			University exams (ESE)	Progressive Assessment (PA)	External Practical /viva Exam(ESE)	Internal evaluation Practical /viva Exam(PA)		
0	2	0	2	00	00	30	20	50

L- Lectures; P- Practical; OJT- On Job Training; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Program Objectives:

- Applying the knowledge of electronics components, and measurement.
- Identifying the circuits and uses of rectifiers.
- Identifying wiring faults and soldering defects.
- Designing PCB layouts and domestic wiring schemes.
- Understanding troubleshooting faulty circuit to ensure public safety.

Course Content: Practicals

Sr. No.	Experiment /Practical Exercises	Hrs.
1	Identification of electronic components.	02
2	Measurement of voltage/current using multimeter.	02
3	Construction of rectifier circuit.	02
4	Experiment on Soldering and PCB assembly.	02
5	Experiment on Logic gate implementation.	02
6	Testing and troubleshooting.	02
7	Experiment of IC circuit testing.	02
8	Relay operation.	02
9	Sensor (LDR) circuit.	02
10	Troubleshooting faulty circuit.	02

Note: Minimum Eight Experiments should be performed by the students from the above given list. Or any other experiments related to above topics.

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
10	15	25	0	0

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above Levels (Bloom's Taxonomy)

List of Laboratory/Learning Resources Required: Digital Multimeter , Analog Multimeter, Resistors (various values) ,Capacitors (ceramic, electrolytic), Inductors, Diodes (PN Junction,



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Diploma in Vocation (D.Voc), 3rd Semester

Branch: Electrical Wiring

Subject Name: Electronics Engineering Practices Lab

Subject Code: 1230803

Zener), Transistors

(NPN, PNP) , LEDs ,ICs (7400 series, voltage regulators like 7805), Breadboard ,Connecting wires (jumper wires) ,PCB boards (general purpose) ,Terminal strips ,Soldering iron / soldering gun, Solder wire (tin-lead / lead-free), Emery paper / wire stripper, De soldering pump / wick, Hand magnifying glass, Tongs / pliers, PCB board (copper clad), PCB layout sheet / marker pen, Drill machine.

References/Suggested Learning Resources:

(a) Books:

1. Electronic Devices & Circuits – Boylestad
2. Workshop Technology (Soldering, Brazing & PCB) by **Raghuwanshi & Gupta** – Dhanpat Rai
3. Electronics Engineering by **B.L.Therja**, S.Chand Publication

(b) Open source software and website:

1. <https://nptel.ac.in/>



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Diploma in Vocation (D.Voc), 3rd Semester

Branch: Electrical Wiring

Subject Name: Electrical Hazard Management

Subject Code: