



# GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Diploma in Vocation (D.Voc), 3<sup>rd</sup> Semester

Branch: Electrical Wiring

Subject Name: Electronic Engineering Practices

Subject Code: 1230801

## 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)		
3	0	0	3	50	0	0	0	50

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

## Program Objectives:

- To impart knowledge of electronic components and circuits
- To develop practical skills in soldering and PCB fabrication
- To understand basic analog and digital electronics
- To enable troubleshooting and maintenance of electronic systems

## Course Content: Theory

Unit No.	Content	No. of Hours
1.	<b>Electronic Components &amp; Measuring Instruments</b> <ul style="list-style-type: none"> <li>• Passive components: Resistor, Capacitor, Inductor</li> <li>• Active components: Diode, Transistor, LED</li> <li>• Color coding and identification</li> <li>• Multimeter and CRO (basic introduction)</li> <li>• Safety practices</li> </ul>	10
2.	<b>Basic Electronic Circuits</b> <ul style="list-style-type: none"> <li>• Ohm's Law and Kirchhoff's Laws</li> <li>• Series and Parallel Circuits</li> <li>• Rectifiers (Half-wave &amp; Full-wave)</li> <li>• Filter circuits</li> <li>• Voltage regulators</li> </ul>	08
3.	<b>Soldering &amp; PCB Technology</b> <ul style="list-style-type: none"> <li>• Soldering tools and materials</li> <li>• Soldering and de-soldering techniques</li> <li>• PCB types and layout</li> <li>• PCB fabrication basics</li> <li>• Inspection and testing</li> </ul>	08
4.	<b>Digital Electronics</b> <ul style="list-style-type: none"> <li>• Number systems and conversions</li> <li>• Logic gates and truth tables</li> <li>• Basic combinational circuits</li> <li>• Introduction to ICs (7400 series)</li> </ul>	08



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5.	<b>Electronic Devices &amp; Applications</b> <ul style="list-style-type: none"><li>• Power supply units</li><li>• Amplifiers (basic concept)</li><li>• Sensors and transducers</li><li>• Relay and switching circuits</li><li>• Basic automation systems</li></ul>	08
<b>Total</b>		42

### Suggested Specification table with Marks (Theory):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
10	15	15	5	5

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

### References/Suggested Learning Resources:

#### (a) Books:

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

#### (b) Open source software and website:

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

### Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes
01	Identify electronic components and measuring instruments
02	Analyze and construct basic electronic circuits
03	Perform soldering and PCB fabrication techniques
04	Understand basic digital electronics and logic circuits
05	Troubleshoot and maintain electronic systems



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**Syllabus for Diploma in Vocation (D.Voc), 3<sup>rd</sup> Semester**

**Branch: Electrical Wiring**

**Subject Name: Electrical Hazard Management**

**Subject Code:**