



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Choice Based Credit System (CBCS) in the Light of NEP-2020
Name of Program: Bachelor of Science

COURSE CODE	CATE GORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	C R E D I T S
			E N D S E M U n i v e r s i t y E x a m	T w o T e r m E x a m	T e a c h e r s A s s e s m e n t *	E N D S E M U n i v e r s i t y E x a m	T e a c h e r s A s s e s m e n t *				
VCEE101		Maintenance of Residential Wiring and Home Appliances	0	0	0	30	20	2	0	4	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit.

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

To impart the basic knowledge of Basics of electrical wiring, electronic appliances, and safety at home.

Course Outcomes:

After the successful completion of this course students will be able to

1. Acquire necessary skills/hand on experience/ working knowledge on single phase and three phase connections.
2. Learn basics of electrical wiring with electrical protection devices.
3. Learn circuit series in electric and electronic home appliances.
4. Have knowledge of various electronic components used in home appliances.
5. Check the electrical connections at household.

Syllabus:

UNIT I

9

Hrs.

Introduction: Resistors, capacitors, inductors, and transformers. ICs and its packaging Technique. Electrical energy, Power, Power factor, Single phase and three phase connections, consumption of electrical power.

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UNIT II

8

Hrs.

Basics of House wiring: Introduction to wiring symbols used in single and three phase electrical diagrams, Concept regarding correct techniques of interpreting electrical diagrams regarding electrical circuits, types of Cables, Connectors, Switches and their usage in different household applications.

UNIT III

8

Hrs.

Earthing: Overloading, Earthing and its necessity, short circuiting, Fuses, MCB, Earth Leakage Circuit Breaker (ELCB), Insulation, Inverter.

UNIT IV

9

Hrs.

Electronic Appliances and its maintenance: Soldering technique, tools, breadboard and PCB, Types of LED, LCD and various Display panels, P-N Junction diode, Zener diode, and voltage regulator ICs.

UNIT V

9

Hrs.

Electrical Appliances and Safety Rules: Principles of working, parts and servicing of Electric fan, Electric Iron box, Water heater; Induction heater, Electric bulbs, CFL, LED lights. Types of hazards involved in electrical connections, First Aid, Fire extinguisher, Safety drills, Types, and use of PPEs as per general and electrical safety norms.

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Textbooks:

1. B.L. Theraja, “A Text book on Electrical Technology”. S. Chand & Co.
2. K.UMA RAO, “Basics of Electrical Engineering”.

References:

1. BPB Publications “Handbook of Repair & Maintenance of domestic electronics appliances”
2. K. P. Anwer, “Domestic Appliances Servicing”, Scholar Institute Publications

La Rules Experiments:

1. Identify different types of cables and test them. Prepare terminals, skin the wires/ cables using wire stripper and cutter.
2. Identify different types of connectors, switches, fuses, relays and breadboards. Utilize them in different applications.
3. Study of different active and passive electronic components and devices. Identify the various voltage regulator ICs.
4. Perform soldering and de-soldering of various electronics components and devices on general purpose PCB.
5. Measurement of electrical quantities-voltage current, power & power factor in RLC circuit.
6. Residential house wiring using fuse, switch, indicator, lamp and energy meter. To study house wiring: batten, cleat, casing-caping, conduit wirings and staircase wiring.
7. Measurement of energy using single phase energy meter.
8. Identify the different types of LEDs, Displays, and design a circuit using the same.
9. Design an electronic circuit for power supply and test the functioning.

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10. Design an electronic alarm for the overhead water tank.
11. To study circuit and working of home inverter.
12. To study fuses MCBs and importance of earthing.
13. Test the lighting installation for open circuit, short circuit, polarity, insulation resistance and earth fault.

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