

CC132: ELECTRICAL WORKSHOP

CREDITS = 2 (L=0, T=0, P=2)

Course Objective:

C1: This course aims to provide Basic Electrical Engg concepts.

C2: The main objective is to make the students able to design useful electrical circuits using basic concepts.

Teaching and Assessment Scheme:

| Teaching Scheme | | | Credits | Assessment Scheme | | | | |
|-----------------|---|---|---------|-------------------|----|-----------|----|-------------|
| L | T | P | C | Theory | | Practical | | Total Marks |
| | | | | ESE | CE | ESE | CE | |
| 0 | 0 | 2 | 2 | 0 | 0 | 60 | 40 | 100 |

Course Contents:

| Unit No. | Topics |
|----------|---|
| 1 | <u>Measurement:</u> Measuring of various electrical quantities like resistance, voltage, Current, frequency, phase difference, amplitude, power, power factor for a. c. Supply. Use of various analog and digital meters. |
| 2 | <u>Wiring:</u> Single phase wiring; Tube-light wiring, Staircase wiring etc, Measurement of earthing resistance..... |
| 3 | <u>Constructional Features:</u> Study of construction & maintenance of electrical machines; appliances like fan, air-conditioner, refrigerators, UPS etc. |
| 4 | <u>Protective Devices:</u> Study of characteristics of Fuse, MCB, and ELCB for a given Circuit. |
| 5 | <u>Layout and Drawing:</u> Study of layout and circuit diagram of electrical wiring installation, panels and distribution boards of multi-storied buildings using IEEE Electrical symbols. |
| 6 | <u>Rating and Specifications:</u> Comparison of ratings and specification of various electrical circuit components and devices like motors, transformers, appliances and power supplies |

| Unit No. | Topics |
|----------|---|
| 7 | <u>Testing and safety associated issues:</u> Testing of various electrical components like resistors, inductor, capacitor etc |

List of References:

1. P. Tiwari, S. Gairola, “*Electrical Engineering Laboratory Practice*”, S. K. Kataria Publication
2. P K Kharbanda, S B Bodkhe, S D Naik and S G Tarnekar, “*Laboratory Courses in Electrical Engineering*”, 5/e, S. Chand Publishing
3. Dr. V. Ganesh and Dr. K. Venkat Reddy, “*Electrical Machines Lab Manual/Student Hand Book*”, Mudranik Technologies Pvt. Ltd.
4. B. L. Theraja, Volume- II, “*Electrical Technology*”, S. Chand

Course Outcomes (COs):

At the end of this course students will be able to ...

- CO1:** Design and develop Basic Electrical circuits.
- CO2:** Explain use of different Electrical Measuring Instruments.
- CO3:** Apply the concept of Protective Devices.
- CO4:** Demonstrate connection for different Electrical wirings.
- CO5:** Classify different Instruments and Rating for the same.
- CO6:** Employ testing for some basic Instruments.