ECE132:BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LABORATORY

L:0 T:0 P:2 Credits:1

Course Outcomes: Through this course students should be able to

CO1 :: know various measuring instruments and their application for measuring the electrical quantities

CO2 :: extend the knowledge of math, science and engineering while implementing and analyzing electrical and electronics engineering problems

CO3 :: examine the performance of the DC motor and artificial lightning source

CO4 :: apply the knowledge about semiconductors devices in circuit designing

CO5 :: analyze various electrical circuit parameters using law and theorems

CO6 :: design and validate the interfacing of sensor with arduino

List of Practicals / Experiments:

Kirchhoff voltage law and Kirchhoff current law

- verification of Kirchhoff voltage law and Kirchhoff current law using hardware and software

Turn ratio of a transformer

- to understand the principle of turn ratio of a transformer using both hardware and software

Thevenin's and Norton's theorems

- verification of Thevenin's and Norton's theorems in DC circuits using hardware and software.

Basic of Arduino

- interfacing application of LDR and LED using Arduino.

Rectifiers

- to understand use of diodes for half wave and full wave rectifier using both hardware and software

DC Motors

- Speed control and direction reversal of DC Motor

Transistor as switch

- to design and analyze the operation of transistor as switch.

Zener Diode

- To study VI char of a zener diode and its application as a voltage regulator

Mini Projects

- To design and simulate a mini-project that provides solutions to real-world problems

References:

1. BASIC ELECTRICAL & ELECTRONICS by B.L THARAJA, S. CHAND & COMPANY

2. FOUNDATIONS OF ANALOG AND DIGITAL ELECTRONIC CIRCUITS by ANANT AGGARWAL, ELSEVIER