

**BASIC ELECTRICAL ENGINEERING LAB**

Common to ECE, CSE, IT, CSE(AI&ML) & CSE(DS) Branches

**21EE108ES/21EE208ES****L T P C****0 0 2 1****Course Objectives:**

1. To analyze a given network by applying various electrical laws and network theorems
2. To know the response of electrical circuits for different excitations
3. To calculate, measure and know the relation between basic electrical parameters.
4. To analyze the performance characteristics of DC and AC electrical machines

**Course Outcomes:**

CO 1: Get an exposure to basic electrical laws and network theorems

CO 2: Understand the response of different types of electrical circuits to different excitations.

CO 3: Understand the measurement, calculation and relation between the basic electrical parameters

CO 4: Understand the basic characteristics of transformers and electrical machines.

**List of experiments/demonstrations:**

1. Verification of Ohms Law, Kirchoff's laws (DC Excitation)
2. Verification of Thevenin's and Norton's Theorem (DC Excitation)
3. Verification of Superposition Theorem (DC Excitation)
4. Transient Response of Series RL and RC circuits using DC excitation
5. Transient Response of RLC Series circuit using DC excitation
6. Resonance in series RLC circuit
7. Calculations and Verification of Impedance and Current of RL, RC and RLC series circuits
8. Measurement of Active and Reactive Power in a balanced Three-phase circuit
9. Efficiency of a Single-Phase Transformer using open circuit and short circuit tests.
10. Load Test on Single Phase Transformer (Calculate Efficiency and Regulation)
11. Performance Characteristics of Self Excited DC Shunt Motor
12. Efficiency of a Self-Excited DC Shunt Motor
13. No-Load Characteristics of a Three-phase Alternator .

**Note:** From the above list, any 10 experiments must be conducted.