III B.Tech II Semester

15AEE37-ELECTRICAL MEASUREMENTS LAB

L	T	P	C
0	0	3	2

Course Objectives

This course enables the students to

- *Learn testing methods of energy meter and current transformer.*
- *Learn measurement of low and medium resistance.*
- *Learn the use of ac bridges for L and C measurement.*
- *Learn the measurement of power and power factor.*
- *Understand the basics of active and reactive power.*
- *Understand the basics of current transformer and its applications.*

Any Eight of the Experiments to be conducted:

1. Calibration and Testing of Single Phase Energy Meter
2. Calibration of Dynamometer Power Factor Meter
3. Crompton D.C. Potentiometer – Calibration of PMMC Ammeter and PMMC Voltmeter
4. Kelvin's Double Bridge – Measurement of Resistance – Determination of Tolerance.
5. Measurement of % Ratio Error and Phase Angle of Given C.T. by Comparison.
6. Schering Bridge & Anderson Bridge.
7. Measurement of 3 Phase Reactive Power with Single-Phase Wattmeter.
8. Measurement of Parameters of a Choke Coil Using 3 Voltmeter and 3 Ammeter Methods.
9. Calibration of LPF Wattmeter – by Phantom Testing
10. Measurement of 3 Phase Power with Two Watt Meter Method (Balanced &Un balanced).

In addition to the above eight experiments, at least any two of the experiments from the following list are required to be conducted:

1. Optical Bench – Determination of Polar Curve Measurement of MHCP of Filament Lamps
2. Dielectric Oil Testing Using H.T. Testing Kit
3. LVDT and Capacitance Pickup – Characteristics and Calibration
4. Resistance Strain Gauge – Strain Measurements and Calibration
5. Transformer Turns Ratio Measurement Using A.C. Bridge.
6. A.C. Potentiometer – Calibration of AC Voltmeter, Parameters of Choke.

Course Outcomes

The students will have knowledge on the following concepts

- *Identify the parts of measuring instruments and select a suitable measuring instrument for measurement of ac/dc electrical quantity.*
- *Differentiate between MI, MC and electrostatic instruments.*
- *Instrument transformers used during measurement of current and voltages.*
- *Calculation of the resistance, inductance and capacitance by using ac/dc Bridges.*

V. Seshu
BOS-Chairman