2/4 B.Tech. FOURTH SEMESTER

EE4L2 ELECTRICAL MEASUREMENTS LAB Credits: 2

Lecture: - Internal assessment: 25 marks

Lab: 3 periods/week Semester end examination: 50 marks

Course Objectives

- To know the procedures for measuring resistance, inductance and capacitance of different ranges.
- To perform experiment to measure three phase power.
- To design experiments for calibration of energy meter.
- To know the industrial practices of measuring earth resistance, dielectric strength of transformer oil & Testing of underground cables

Course Outcomes:

Upon completion of the course student will be able to

1. Calibrate and test single phase energy meter, and LPF wattmeter.
2. Measure resistance, inductance and capacitance.
3. Measure 3-Φ active power and reactive power.
4. Test current transformers and dielectric strength of oil.
5. Calibrate LVDT and resistance strain gauge.

List of Experiments:

Any 10 of the Following Experiments are to be Conducted

1. Calibration of single phase energy meter.
2. Measurement of low resistance using Kelvin's double bridge.
3. Capacitance measurement using Schering bridge.
4. Inductance measurement using Anderson bridge.
5. Measurement of three phase reactive power with single phase wattmeter for balanced loading.
6. Calibration of LPF wattmeter by Phantom testing.
7. Measurement of three phase power with single watt meter and 2 No's of C.T's.
8. C.T. testing using Silsbee's method – Measurement of percentage ratio error and phase angle error of given C.T.
9. Dielectric oil testing using H.T testing Kit.
10. LVDT and capacitance pickup-characteristics and calibration.
11. Resistance strain gauge-strain measurement and calibration.
12. Measurement of parameters of choke coil using three voltmeter and three ammeter method.