

3/4 B.Tech. FIRST SEMESTER

EE5L2 MEASUREMENTS LAB Credits: 2

Practical: 3 periods/week
Tutorial: 0 period /week

Internal assessment: 25 marks
Semester end examination: 50 marks

Course Objectives:

To know the procedures for measuring Resistance, Inductance and Capacitance of different ranges.

To perform experiments to measure three phase power, frequency, core losses.

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

Learning outcomes :

1. Upon completion of study of the course should be able to calibrate and test single phase energy meter, calibrate PMMC voltmeter and calibrate LPF wattmeter
2. Student should be able to measure resistance, inductance and capacitance
3. Students should be able to measure 3- Φ active power and reactive power, and measure MHCP of filament lamps
4. Students should be able to test current transformers and dielectric strength of oil.
5. Students should be able to calibrate LVDT and resistance strain gauge.

Any 10 Of the Following Experiments are to be Conducted

1. Calibration and Testing of single phase energy Meter
2. Crompton D.C. Potentiometer- Calibration of PMMC voltmeter
3. Kelvin's double Bridge- Measurement of resistance- Determination of Tolerance.
4. Capacitance Measurement using Schering Bridge.
5. Inductance Measurement using Anderson bridge
6. Measurement of 3 phase reactive power with single –phase wattmeter for balanced loading
7. Optical bench – Determination of polar curve measurement of MHCP of filament lamps.
8. Calibration LPF wattmeter –by Phantom testing
9. Measurement of 3 phase power with single watt meter and 2 No's C.T.
10. C.T. testing using Siliesbee's method – Measurement of %ratio error and phase angle of given C.T
11. Dielectric oil testing using H.T.testing Kit
12. LVDT and capacitance pickup-characteristics and calibration
13. Resistance stain guage-strain measurement and calibration