



ELECTRICAL MEASUREMENTS LAB

Objective:

Measurement is the most important part of an engineer's job as every quantity requires measurement. The main objective of this lab is to enable the students to understand different types of measuring devices and instruments which are used in industry for measuring various entities. The use of modern day technologies in the field of electrical measurements is taught practically to the students in this lab. The students are also provided with information about maintenance and calibration of measuring instruments in this laboratory.

Course outcomes:

- CO1: Verify the working of different meters, bridges and measure unknown R, L, C and Calibrate various measuring instruments and calculate errors in the equipment.
- CO2: Measure the active and reactive power of balanced and unbalanced loads

List of Experiments:

Any 5 of the following experiments are to be conducted

1. Measurement of active power for star and delta connected balanced loads
2. Kelvin's double bridge
3. Crompton D.C. potentiometer - calibration of PMMC ammeter & PMMC voltmeter
4. Capacitance, inductance measurement using Schering Bridge and Anderson bridge
5. Calibration of 1- ϕ LPF wattmeter
6. Calibration and testing of single phase energy meter
7. Calibration of dynamo meter power factor meter
8. Measurement of 3ϕ power with single wattmeter and 2 no's of CT's

List of major equipment

S. No.	Item Description	Quantity	Cost (Rs.)
1	Crompton potentiometer	1	19,200.00
2	Industrial Kelvin's double Bridge	1	8253.00
3	Schering Bridge, Anderson Bridge	1	19,000.00
4	Auto Transformers	6	53,220.00
5	DC Regulated Power Supply	3	10,980.00
6	Capacitive load	3	31,500.00
7	Resistive load	3	34,500.00
8	Inductive load	1	18,730.00
9	Wattmeter's	16	30,414.00
10	Ammeters	21	23,465.00
11	Voltmeters	19	19,845.00
12	Phase shifting Transformer	1	44,745.00
13	LVDT & Capacitance pickup	1	19,430.00
14	Precision C. T. B	1	10,800.00
Total			3,44,082.00