III B.Tech – II Semester (20EE6112) ELECTRICAL MEASUREMENTS & INSTRUMENTATION LAB

Int. Marks	Ext. Marks	Total Marks	L	Т	Р	С
15	35	50	-	-	3	1.5

Pre-Requisites: Electrical Measurements & Instrumentation

Course Objectives: students are supposed

- To understand the correct function of electrical parameters
- To understand calibration of voltage, current, single phase & three phase power and energy
- To understand measurement of electrical characteristics of resistance, inductance and capacitance of bridges.
- To understand the measurement of non-electrical quantities using electrical transducers

S.No

List of Experiments

- 1. Calibration and testing of single-phase Energy meter.
- 2. Calibration of dynamometer wattmeter using phantom loading UPF.
- 3. Kelvin's double bridge-measurement of resistance.
- 4. Capacitance measurement using Schering's Bridge.
- 5. Inductance measurement using Anderson's bridge.
- 6. Calibration of LPF wattmeter by Direct loading.
- 7. Measurement of three phase power with single phase wattmeter and 2 no's of C.T.
- 8. Measurement of three phase reactive power using single phase wattmeter for balanced loading
- 9. Measurement of Temperature with RTD in LabVIEW
- 10. Measurement & calibration of displacement with LVDT in LabVIEW

Additional Experiments

- 11. Calibration of dynamometer wattmeter using phantom loading UPF
- 12. Crompton's D.C Potentiometer-Calibration of PMMC ammeter and PMMC voltmeter.

Course Outcomes:

After successful completion of the course, the students will be able to:

S. No	Course Outcome					
1.	Student will be able to measure accurately the electrical parameters voltage, current, power, energy, and electrical characteristics of Resistance, inductance, capacitance.	L2				
2.	To be able to test transformer oil for its effectiveness					
3.	To be able to measure three phase active and reactive powers	L2				
4.	To be able to measure non-electrical quantities.	L2				

Correlation of COs with POs& PSOs:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3		2									3	3
CO2	3	2	3										3	2
CO3	3	3	2	2									3	2
CO4	3	2	2										3	3

Text Books:

1. Shawney A.K., Electrical Measurements, KhannaPublisher.

Reference Books:

- 1. Electrical Measurements by David. A. Bell Oxford Publications, 5thedition.
- 2. Electrical Measurements by R. K. Rajputh, S. Chand Publications, 2ndEdition.
- 3. Electrical Measurements & Measuring Instruments by J.Amarnath, S.K.Kataria&Sons.