LESSON PLAN FOR ACADEMIC SESSION: 2024-25(Summer-25)

Discipline: Electrical Engineering		Semester : 4th	Name of the Teaching Faculty : PRABHUDATTA PUJAPANDA
Subject : SUBJECT-ELECTRICAL MEASUREMENT & INSTRUMENTATION	No. of days / week class allotted		Semester From : 04.02.25 to 17.05.2025 Nos. of Weeks per semester : 15
Week	Class Day	Chapter	Theory Topics
1ST	1st	MEASURING INSTRUMENTS CHAPTER-01	1.1 Define Accuracy, precision, Errors, Resolutions Sensitivity and tolerance.
	2nd		1.2 Classification of measuring instruments.
	3rd		1.3 Explain Deflecting, controlling and damping arrangements in indicating type of instruments
	4th		Continue.....
2ND	1st		1.4 Calibration of instruments
	2nd	ANALOG AMMETERS AND VOLTMETERS CHAPTER-02	2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of: 2.1.1 Moving iron type instruments
	3rd		Continue.....
	4th		2.1.2 Permanent Magnet Moving coil type instruments.
3RD	1st		Continue.....
	2nd		2.1.3 Dynamometer type instruments
	3rd		Continue.....
	4th		2.1.4 Rectifier type instruments
4TH	1st		2.1.5 Induction type instruments
	2nd		2.2 Extend the range of instruments by use of shunts and Multipliers.
	3rd		2.3 Solve Numerical
	4th	WATTMETERS AND MEASUREMENT OF POWER CHAPTER -03	3.1 Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)
5TH	1st		Continue.....
	2nd		Continue.....
	3rd		3.2 The Errors in Dynamometer type wattmeter and methods of their correction.
	4th		Continue.....
6TH	1st		Continue.....
	2nd		3.2 The Errors in Dynamometer type wattmeter and methods of their correction.
	3rd		Continue.....
	4th	ENERGYMETERS AND MEASUREMENT OF ENERGY CHAPTER-04	4.1 Introduction
7TH	1st		4.2 Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments.
	2nd		Continue.....

	3rd		Continue.....
	4th		Continue.....
8TH	1st		4.3 Testing of Energy Meters.
	2nd		Continue.....
	3rd		Continue.....
	4th	MEASUREMENT OF SPEED, FREQUENCY AND POWER FACTOR CHAPTER-05	5.1 Tachometers, types and working principles
9TH	1st		Continue.....
	2nd		5.2 Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters.
	3rd		Continue.....
	4th		Continue.....
10TH	1st		5.3 Principle of operation and working of Dynamometer type single phase and three phase power factor meters
	2nd		Continue.....
	3rd	MEASUREMENT OF RESISTANCE, INDUCTANCE & CAPACITANCE CHAPTER-06	6.1 Classification of resistance 6.1.1 Measurement of low resistance by potentiometer method.
	4th		6.1.2 Measurement of medium resistance by wheat Stone bridge method.
11TH	1st		6.1.3 Measurement of high resistance by loss of charge method.
	2nd		6.2 Construction, principle of operations of Megger & Earth tester for insulation resistance and earth resistance measurement respectively
	3rd		Continue.....
	4th		6.3 Construction and principles of Multimeter. (Analog and Digital)
12th	1st		6.4 Measurement of inductance by Maxewell's Bridge method.
	2nd		6.5 Measurement of capacitance by Schering Bridge method.
	3rd	SENSORS AND TRANSDUCER CHAPTER-07	7.1. Define Transducer, sensing element or detector element and transduction elements. 7.2. Classify transducer. Give examples of various class of transducer
	4th		7.3. Resistive transducer 7.3.1 Linear and angular motion potentiometer. 7.3.2 Thermistor and Resistance thermometers. 7.3.3 Wire Resistance Strain Gauges
13th	1st		7.4. Inductive Transducer 7.4.1 Principle of linear variable differential Transformer (LVDT)
	2nd		7.4.2 Uses of LVDT.
	3rd		7.5. Capacitive Transducer. 7.5.1 General principle of capacitive transducer

	4th		7.5.2 Variable area capacitive transducer.
14th	1st		7.5.3 Change in distance between plate capacitive transducer.
	2nd		7.6. Piezo electric Transducer and Hall Effect Transducer with their applications.
	3rd		Continue.....
	4th	OSCILLOSCOPE CHAPTER-08	8.1. Principle of operation of Cathode Ray Tube.
15th	1st		Continue.....
	2nd		8.2. Principle of operation of Oscilloscope (with help of block diagram).
	3rd		8.3. Measurement of DC Voltage & current.
	4th		8.4. Measurement of AC Voltage, current, phase & frequency

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