

## Department of Electrical Engineering

Branch: Electrical Engineering	Semester: 4th	Name of the Lecturer: <b>Snigdha Dash</b>
Subject: EMI	No of classes alloted in a week: 5	Duration of Semester: 04.02.2025 - 17.05.2025
Week	Class Day	Theory / practical Topic
1st	1	<b>Measuring instruments</b> - Accuracy, Precision, Errors, Resolution, Sensitivity, Tolerance.
	2	Classifications of measuring Instruments, Deflecting arrangements of indicating type of instruments
	3	Controlling arrangements of indicating type of instruments, Spring control, Gravity control
	4	Damping arrangements of indicating type of instruments, Calibration of instruments
	5	<b>Analog ammeters and voltmeters</b> - Construction, principle of operation, errors, ranges merits and demerits of Moving iron type instruments.
2nd	1	Construction, principle of operation, errors, ranges merits and demerits of Permanent Magnet Moving coil type instruments
	2	Construction, principle of operation of Dynamometer type instruments
	3	Construction, principle of operation of Rectifier type instruments
	4	Construction, principle of operation of Induction type instruments
	5	Extend the range of instruments by use of shunts and Multipliers.
3rd	1	Solve Numerical
	2	<b>Wattmeter and measurement of power</b> - Construction, principle of working of Dynamometer type wattmeter. (LPF type)
	3	Construction, principle of working of Dynamometer type wattmeter. (LPF type)
	4	Construction, principle of working of Dynamometer type wattmeter. (UPF type)
	5	The Errors in Dynamometer type wattmeter
4th	1	methods of their correction
	2	Induction type watt meters
	3	<b>Energy meters and measurement of energy</b> - Introduction
	4	Single Phase Induction type Energy meters – construction,
	5	Single Phase Induction type Energy meters – working principle
5th	1	Single Phase Induction type Energy meters – working principle
	2	Single Phase Induction type Energy meters – their compensation and adjustments
	3	Testing of energy meter.
	4	<b>Measurement of speed, frequency and power factor</b> - Tachometers types & principles
	5	Tachometers types & principles
6th	1	Principle of operation and construction of Mechanical resonance Type frequency meters.
	2	Principle of operation and construction of Electrical resonance Type frequency meters.
	3	Principle of operation and working of Dynamometer type single phase power factor meters.
	4	Principle of operation and working of Dynamometer type three phase power factor meters.
	5	<b>Measurement of Resistance, Inductance &amp; Capacitance</b> - Classification of resistance
7th	1	Measurement of low resistance by potentiometer method, Measurement of medium resistance by wheat Stone bridge method
	2	Measurement of high resistance by loss of charge method.

7th	3	Construction, principle of operations of Megger or Earth tester for insulation resistance
	4	Construction and principles of Multimeter. (Analog and Digital)
	5	Measurement of inductance by Maxwell's Bridge method, Measurement of capacitance by Schering Bridge method
8th	1	<b>Sensors And Transducer</b> - Define Transducer, sensing element or detector element and transduction elements, Classify transducer. Give examples of various class of transducer
	2	Resistive transducer - Linear and angular motion potentiometer, Thermistor and Resistance thermometers, Wire Resistance Strain Gauges
	3	Inductive Transducer - Principle of linear variable differential Transformer (LVDT), Uses of LVDT
	4	Capacitive Transducer - General principle of capacitive transducer, Variable area capacitive transducer, Change in distance between plate capacitive transducer
	5	Piezo electric Transducer with their applications.
9th	1	Hall Effect Transducer with their applications.
	2	<b>Oscilloscope</b> - Principle of operation of Cathode Ray Tube
	3	Principle of operation of Oscilloscope (with help of block diagram)
	4	Measurement of DC Voltage & current, Measurement of AC Voltage, current, phase & frequency
	5	Previous Semester Question Discussion

Signature of the  
Lecturer

Signature of the  
H.O.D.