

DISCIPLINE		SEMESTER	NAME OF THE TEACHING FACULTY	
ELECTRICAL		4TH	MISS.SINDHUJA PANIGRAHI(PTGF)	
SUBJECT:EMI		NO. OF DAYS PER WEEK CLASS ALLOTTED : 05	SEMESTER FROM 04/02/2025 TO 17/05/2025	
			NO. OF WEEKS : 15 NOS.	
WEEKS	CLASS DAYS	THEORY TOPICS		
1ST WEEK	1ST	Introduction to measurement & instrumentation		
	2ND	Define Accuracy, precision, Errors, Resolutions Sensitivity and tolerance		
	3RD	Classification of measuring instruments		
	4TH	Explain Deflecting, controlling and damping arrangements in indicating type of instruments.		
	5TH	Calibration of instruments		
2ND WEEK	1ST	Introduction to analog ammeter & voltmeter		
	2ND	Describe Construction, principle of operation, errors, ranges merits and demerits of Moving iron type instruments		
	3RD	Describe Construction, principle of operation, errors, ranges merits and demerits of Moving iron type instruments		
	4TH	Describe Construction, principle of operation, errors, ranges merits and demerits of Moving iron type instruments		
	5TH	Describe Construction, principle of operation, errors, ranges merits of Permanent Magnet Moving coil type instruments		
3RD WEEK	1ST	Describe Construction, principle of operation, errors, ranges merits of Permanent Magnet Moving coil type instruments		
	2ND	Describe Construction, principle of operation, errors, ranges merits of Permanent Magnet Moving coil type instruments		
	3RD	Describe Construction, principle of operation, errors, ranges merits and demerits of Dynamometer type instruments		
	4TH	Describe Construction, principle of operation, errors, ranges merits and demerits of Dynamometer type instruments		
	5TH	Describe Construction, principle of operation, errors, ranges merits and demerits of Dynamometer type instruments		
4TH WEEK	1ST	Describe Construction, principle of operation, errors, ranges merits and demerits of Rectifier type instruments		
	2ND	Describe Construction, principle of operation, errors, ranges merits and demerits of Rectifier type instruments		
	3RD	Describe Construction, principle of operation, errors, ranges merits and demerits of Induction type instruments		
	4TH	Describe Construction, principle of operation, errors, ranges merits and demerits of Induction type instruments		
	5TH	Extend the range of instruments by use of shunts and Multipliers		
5TH WEEK	1ST	Extend the range of instruments by use of shunts and Multipliers		
	2ND	Solve Numerical		
	3RD	Solve Numerical		
	4TH	Describe Construction, principle of working of Dynamometer type wattmeter. (LPF type)		
	5TH	Describe Construction, principle of working of Dynamometer type wattmeter. ( UPF type)		
6TH WEEK	1ST	Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)		
	2ND	The Errors in Dynamometer type wattmeter and methods of their correction		
	3RD	The Errors in Dynamometer type wattmeter and methods of their correction		



	4TH	Discuss Induction type watt meters
	5TH	Discuss Induction type watt meters
7TH WEEK	1ST	Introduction to ENERGYMETERS AND MEASUREMENT OF ENERGY
	2ND	Single Phase Induction type Energy meters – construction
	3RD	Single Phase Induction type Energy meters working principle
	4TH	Single Phase Induction type Energy meters and their compensation & adjustments
	5TH	Single Phase Induction type Energy meters their compensation & adjustments
8TH WEEK	1ST	Testing of Energy Meters
	2ND	Testing of Energy Meters
	3RD	Measurement of speed ,frequency & powerfactor
	4TH	Tachometers, types and working principles
	5TH	Principle of operation and construction of Mechanical resonance Type frequency meters
9TH WEEK	1ST	Principle of operation and construction of Electrical resonance Type frequency meters
	2ND	Principle of operation and working of Dynamometer type single phase power factor meters
	3RD	Principle of operation and working of Dynamometer type three phase power factor meters
	4TH	Principle of operation and working of Dynamometer type single phase and three phase power factor meters
	5TH	Measurement of resistance, inductance and capacitance
10TH WEEK	1ST	Classification of resistance
	2ND	Measurement of low resistance by potentiometer method
	3RD	Measurement of medium resistance by wheat Stone bridge method
	4TH	Measurement of high resistance by loss of charge method
	5TH	Construction, principle of operations of Earth tester for earth resistance measurement
11TH WEEK	1ST	Construction, principle of operations of Megger for insulation resistance measurement
	2ND	Construction and principles of Multimeter. (Analog )
	3RD	Construction and principles of Multimeter. ( Digital)
	4TH	Measurement of inductance by Maxwell's Bridge method
	5TH	Measurement of capacitance by Schering Bridge method
12TH WEEK	1ST	Introduction to sensor and transducer
	2ND	Define Transducer, sensing element or detector element and transduction elements
	3RD	Classify transducer. Give examples of various class of transducer
	4TH	Resistive transducer, Linear and angular motion potentiometer
	5TH	Thermistor and Resistance thermometers
13TH WEEK	1ST	Wire Resistance Strain Gauges.
	2ND	Principle of linear variable differential Transformer (LVDT)
	3RD	Uses of LVDT
	4TH	General principle of capacitive transducer
	5TH	Variable area capacitive transducer
14TH WEEK	1ST	Change in distance between plate capacitive transducer
	2ND	Piezo electric Transducer
	3RD	Hall Effect Transducer with their applications
	4TH	Oscilloscope's introduction
	5TH	Principle of operation of Cathode Ray Tube
	1ST	Principle of operation of Cathode Ray Tube
	2ND	Principle of operation of Oscilloscope (with help of block diagram)



15TH WEEK	3RD	Principle of operation of Oscilloscope (with help of block diagram)
	4TH	Measurement of DC Voltage & current
	5TH	Measurement of AC Voltage, current, phase & frequency

Scanned  
10/02/2025  
(G.F. ELECT)

H.C. ELECT  
GOVT. POLY.  
GAJAPATI