

DISCIPLINE: Electrical & Electronics Engg.	SEMESTER: 3 RD Semester	NAME OF THE TEACHING FACULTY: Mr. Bibhuti Gampai PTGF IN EEE
SUBJECT: ELECTRONICS MEASUREMENT & INSTRUMENTATION	NO OF DAYS/PER WEEK CLASSES ALLOTTED: 03	SEMESTER FROM DATE: 14.07.2025 TO DATE: 15.11.2025 NO OF WEEKS: 15

Week	Class Day	Topics
		1. Qualities of Measurement
1 ST	1 ST	Discuss the Static Characteristics
	2 ND	2 Accuracy, sensitivity, reproducibility and static error of instruments
	3 RD	ASSIGNMENT
2 ND	1 ST	Dynamic characteristics and speed of instruments.
	2 ND	Errors of an instrument
	3 RD	TEST
3 RD		2. Indicating Instruments
	1 ST	Introduction Types of Indicating Instruments
	2 ND	Basic operating principle of Indicating Instruments
	3 RD	Working principle of permanent magnetic moving coil Instruments and Working principle of Moving Iron Instrument
4 TH	1 ST	Basic principle of operation of DC Ammeter and Multirange Ammeter and Basic principle of operation of AC Ammeter and Multirange Ammeter
	2 ND	Basic principle of operation of DC Voltmeter and its applications and Basic principle of operation of AC Voltmeter and its application
	3 RD	Basic principle of Ohm Meter (Series & Shunt type)
5 TH	1 ST	Basic principle of Analog Multimeter and its types & applications
	2 ND	Operation of Q meter and its essentials
		3. Digital Instruments
	3 RD	Principle of operation of Ramp type Digital Voltmeter & applications
6 TH	1 ST	Operation of display of Digital Multimeter & Resolution and Sensitivity
	2 ND	Basic Operating principle of Digital Multimeter, its types & applications And Basic Operating principle of Digital Frequency Meter
	3 RD	Digital Measurement of Time And Measurement of Frequency
7 TH	1 ST	Operating principle of Digital Tachometer and LCR meter & its working principle
	2 ND	ASSIGNMENT
		4. Oscilloscope

	3 RD	Basic Operating principle of Oscilloscope & its Block Diagram
8 TH	1 ST	Basic Operating principle of Dual Trace Oscilloscope & its specification
	2 ND	CRO Measurements AND Lissajous figures
	3 RD	Applications of Oscilloscope in measurement of Voltage and frequency
9 TH	1 ST	Basic Operating principle of Digital Storage Oscilloscope
	2 ND	Basic Operating principle of High frequency Oscilloscope
		5.Bridges
	3 RD	Types of Bridges (DC & AC Bridges)
10 TH	1 ST	DC Bridges (Measurement of Resistance by Wheatstone's Bridge)
	2 ND	AC bridges (Measurement of inductance by Maxwell's Bridge & Hay's Bridge)
	3 RD	Measurement of capacitance by Schering's Bridge & DeSauty Bridge
11 TH	1 ST	Working principle of Q meter its circuit diagram & measurement of Low impedance
	2 ND	Measurement of frequency And LCR Meter & its measurements
	3 RD	6.Transducers & Sensors
12 TH	1 ST	Define Transducer and Sensor And Type of Transducer
	2 ND	Parameters and advantages of Transducer And Working principle of Strain Gauges,
	3 RD	Define Strain Gauge (No mathematical Derivation) And Working principle of LVDT
13 TH	1 ST	Working principle of capacitive transducers (pressure)
	2 ND	Working principle of Load Cell (Pressure Cell)
	3 RD	Working principle of Temperature Transducer (RTD, Optical Pyrometer, Thermocouple, and Thermister)
14 TH	1 ST	Working principle of Current transducer AND Working principle of Proximity & Light sensors
	2 ND	ASSIGNMENT
		7.Signal Generator, Wave Analyser & DAS
	3 RD	General aspect & classification of Signal generators
15 TH	1 ST	Working principle of AF Sine and Square wave generator AND Working principle of the Function Generator
	2 ND	Function of basic Wave Analyser and Spectrum Analyser AND Basic concept of Data Acquisition System (DAS)
	3 RD	TEST

G. Bibhuti
Signature of the Faculty

Dr. K. S. ...
Signature of HOD