LESSON PLAN (Winter-2023)

Discipline: ETC	**Semester: 3rd**	**Name of the Teaching Faculty: Bibhu Prasad Das**
Subject: Electronics Meas. & Inst.	**No of Days /per week class allotted: 4**	**Semester From date: 01.08.2023 To 30.11.2023 No of Weeks:18**
Week	**Class Day**	**Theory Topics**
1st	1st	**Unit-1: Qualities of Measurement(05)** 1.1 Discuss the Static Characteristics,
	2nd	1.2 Accuracy, sensitivity, reproducibility
	3rd	static error of instruments
	4th	1.3 Dynamic characteristics& speed of instruments.
2nd	1st	1-4 Errors of an instrument & explain various types.
	2nd	**Unit-2: Indicating Instruments (10)** 2.1 Introduction to Indicator & Display devices & its types
	3rd	2.2 Basic principle of meter movement, permanent magnetic moving coil movement & its advantages & disadvantages.
	4th	2.3 Operation of Moving Iron Instrument
3rd	1st	2.4 Basic principle of operation of DC Ammeter and Multi range Ammeter
	2nd	2.5 Basic principle of operation of AC Ammeter and Multi range Ammeter
	3rd	2-6 Basic principle of operation of DC Voltmeter and its applications
	4th	2.7 Basic principle of operation of AC Voltmeter and its application
4th	1st	2.8 Basic principle of Ohm Meter (Series & Shunt type)
	2nd	2.9 Basic principle of Analog Multimeter, its types & applications
	3rd	2-10 Operation of Q meter and its essentials
	4th	**Unit-3: Digital Instruments(10)** 3.1 Principle of operation of Ramp type Digital Voltmeter & applications
5th	1st	3.2 Operation of display of 3 1/2, 4 1/2– Digital Multimeter & Resolution and Sensitivity
	2nd	3.3 Basic principle of operation of working of Digital Multimeterits types & applications
	3rd	3.4 Basic principle of operation of working of Digital Frequency Meter
	4th	3.5 Operation of working of Digital Measurement of Time
6th	1st	3.6 Measurement of Frequency.
	2nd	3.7 Principle of operation of working of Digital Tachometer
	3rd	3.8 Principle of operation of working of Automation in Digital Instruments
	4th	(Polarity Indication, Ranging, Zeroing & Fully Automatic)
7th	1st	3.9 Block diagram of LCR meter & its working principle.
	2nd	**Unit-4: Oscilloscope(08)** 4.1 Basic principle of Oscilloscope& its Block Diagram
	3rd	4.2 Basic principle & Block diagram of CRO,
	4th	Dual Trace Oscilloscope & its specification
	1st	4.3 CRO Measurements,

8th	2nd	Lissajous figures
	3rd	4.4 Applications of Oscilloscope (Voltage period & frequency measurement)
	4th	4.5 Operation of Digital Storage Oscilloscope
9th	1st	& High frequency Oscilloscope
	2nd	**Unit-5: Bridges (11)** 5.1 Types of Bridges (DC& Ac Bridges)
	3rd	5.2 DC Bridges (Measurement of Resistance by Wheatstone's Br
	4th	5.3 AC bridges (Measurement of inductance by Maxwell's Bridg
10th	1st	& by Hay's Bridge)
	2nd	5.4 Measurement of capacitance by Schering's Bridge
	3rd	& DeSauty Bridge.
	4th	5.5 Working principle of Q meter its circuit diagram
11th	1st	& measurement of Low impedance
	2nd	5.6 Measurement of frequency
	3rd	5.7 LCR Meter
	4th	& its measurements
12th	1st	**Unit-6: Transducers & Sensors(11)** 6.1 Parameter, method of Selecting
	2nd	& advantage of Electrical Transducer & Resistive Transducer
	3rd	6.2 Working principle of Strain Gauges, define Strain Gauge (No mathematical Derivation)
	4th	6.3 Working principle of LVDT
13th		**PUJA VACATION**
14th	1st	6.4 Working principle of capacitive transducers (pressure)
	2nd	Continue..
	3rd	6.5 Working principle of Load Cell (Pressure Cell)
	4th	Continue..
15th	1st	6.6 Working principle of Temperature Transducer - RTD
	2nd	Optical Pyrometer,
	3rd	Thermocouple,
	4th	Thermister
16th	1st	6.7 Working principle of Current transducer and KW Transducer
	2nd	Continue..
	3rd	6.8 Working principle of Proximity & Light sensors.
	4th	**Unit-7: Signal Generator, Wave Analyser & DAS (05)** 7.1 General aspect & classification of Signal generators
17th	1st	7.2 Working principle of AF Sine & Square wave generator .
	2nd	Continue..
	3rd	7.3 Working principle of the Function Generator
	4th	Continue..
18th	1st	7.4 Function of basic Wave Analyser& Spectrum Analyser
	2nd	Continue..
	3rd	7.5 Basic concept of Data Acquisition System (DAS)
	4th	Continue..

Bibhu P. Das
01/08/23

Signature of the Faculty