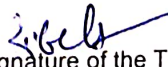


Lesson Plan			
Discipline: ETC	Semester-3rd Winter-2023	Name of the Teaching Faculty: Mr.Rabindra kumar satapathy(PTGF. ETC Engg)	
Sl. No.	Subject-Th.4 (ELECTRONICS MEASUREMENT & INSTRUMENTATION)	No. Of Days/Week class alloted:04	Semester From date: 01.08.2023 To date: 30.11.2023 No of weeks: 17
	Weeks/Months	Class Day	Topic
1	1st week 1 Aug. To 5 Aug	1st	Unit-1: Qualities of Measurement
		2nd	1.1 Discuss the Static Characteristics,
		3rd	1.2 Accuracy, sensitivity, reproducibility & static error of instruments
		4th	1.3 Dynamic characteristics & speed of instruments
2	2nd week 7 Aug. To 12 Aug	1st	1-4 Errors of an instrument & explain various types.
		2nd	Unit-2: Indicating Instruments
		3rd	2.1 Introduction to Indicator & Display devices & its types
3	3rd week 14 Aug. To 19 Aug	4th	2.2 Basic principle of meter movement, permanent magnetic moving coil movement & its advantages & disadvantages.
		1st	2.3 Operation of Moving Iron Instrument
		2nd	2.4 Basic principle of operation of DC Ammeter and Multi range
		3rd	2.5 Basic principle of operation of AC Ammeter and Multi range Ammeter
4	4th week 21 Aug To 26 Aug	4th	2.6 Basic principle of operation of DC Voltmeter and its applications
		1st	2.7 Basic principle of operation of AC Voltmeter and its application
		2nd	2.8 Basic principle of Ohm Meter (Series & Shunt type)
		3rd	2.9 Basic principle of Analog Multimeter, its types & applications
5	5th week 28 Aug. To 2 Sept	4th	2-10 Operation of Q meter and its essentials
		1st	Unit-3: Digital Instruments
		2nd	3.1 Principle of operation of Ramp type Digital Voltmeter & applications
6	1st week 4 Sept. To 9 Sept	3rd	2.7 Impedance matching & Stubs – single & double
		4th	2.8 Primary & secondary constant of X-mission line.
		1st	Unit-3: TELEVISION ENGINEERING.
		3rd	3.2 Operation of display of 3 1/2, 4 1/2– Digital Multimeter & Resolution and Sensitivity
7	2nd week 11 Sept. To 16 Sept	3rd	3.3 Basic principle of operation of working of Digital Multimeterits types & applications
		4th	3.4 Basic principle of operation of working of Digital Frequency Meter
		1st	3.5 Operation of working of Digital Measurement of Time
		2nd	3.6 Measurement of Frequency
8	3rd week 18 Sept. To 23 Sept	3rd	3.7 Principle of operation of working of Digital Tachometer
		4th	3.8 Principle of operation of working of Automation in Digital Instruments (Polarity Indication, Ranging, Zeroing & Fully Automatic)
		1st	3.9 Block diagram of LCR meter & its working principle
		2nd	Unit-4: Oscilloscopes.
9	4th week 25 Sept To	3rd	4.1 Basic principle of Oscilloscope & its Block Diagram
		4th	4.2 Basic principle & Block diagram of CRO, Dual Trace Oscilloscope & its specification
		1st	4.3 CRO Measurements, Lissajous figures
		2nd	4.4 Applications of Oscilloscope (Voltage period & frequency measurement)

10	2nd week 2 Oct. To 07 Oct	3rd	4.5 Operation of Digital Storage Oscilloscope & High frequency Oscilloscope
		4th	Unit-5: Bridges
		1st	5.1 Types of Bridges (DC & Ac Bridges)
		2nd	5.2 DC Bridges (Measurement of Resistance by Wheatstone's Bridge)
11	2nd week 9 Oct. To 14 Oct	3rd	5.3 AC bridges (Measurement of inductance by Maxwell's Bridge & by Hay's Bridge)
		4th	5.4 Measurement of capacitance by Schering's Bridge & DeSauty Bridge.
		1st	5.5 Working principle of Q meter its circuit diagram & measurement of Low impedance
		2nd	5.6 Measurement of frequency
12	3rd week 16 Oct. To 20 oct	3rd	5.7 LCR Meter & its measurements
		4th	Unit-6: Transducers & Sensorss.
		1st	6.1 Parameter, method of Selecting & advantage of Electrical Transducer & Resistive Transducer
		2nd	6.2 Working principle of Strain Gauges, define Strain Gauge (No mathematical Derivation)
13	1st week 30 Oct. To 04 Nov	3rd	6.3 Working principle of LVDT r)
		4th	6.4 Working principle of capacitive transducers (pressure)
		1st	6.5 Working principle of Load Cell (Pressure Cell)
		2nd	6.6 Working principle of Temperature Transducer (RTD, Optical Pyrometer, Thermocouple, Thermister)
14	2nd week 06 Nov. To 11 Nov	3rd	6.7 Working principle of Current transducer and KW Transducer.
		4th	6.8 Working principle of Proximity & Light sensors.
		1st	Unit-7: Signal Generator, Wave Analyser & DAS
		2nd	7.1 General aspect & classification of Signal generators
15	3rd week 13 Nov. To 18 Nov	3rd	7.2 Working principle of AF Sine & Square wave generator .
		3rd	7.3 Working principle of the Function Generator
		4th	7.4 Function of basic Wave Analyser & Spectrum Analyser
		1st	7.4 Function of basic Wave Analyser & Spectrum Analyser
16	4th week 20 Nov. To 25 Nov	2nd	7.1 General aspect & classification of Signal generators
		3rd	7.2 Working principle of AF Sine & Square wave generator .
		3rd	7.3 Working principle of the Function Generator
		4th	7.3 Working principle of the Function Generator
17	5th week 27 Nov. To 30 Nov	1st	7.5 Basic concept of Data Acquisition System (DAS)
		2nd	7.5 Basic concept of Data Acquisition System (DAS)
		3rd	7.1 General aspect & classification of Signal generators
		3rd	6.7 Working principle of Current transducer and KW Transducer.
17	5th week 27 Nov. To 30 Nov	4th	6.8 Working principle of Proximity & Light sensors.
		1st	Unit-7: Signal Generator, Wave Analyser & DAS
		2nd	7.1 General aspect & classification of Signal generators
		3rd	7.2 Working principle of AF Sine & Square wave generator .
17	5th week 27 Nov. To 30 Nov	3rd	7.3 Working principle of the Function Generator
		4th	7.3 Working principle of the Function Generator


 Signature of the Teacher