KIIT POLYTECHNIC

Department of Electronics and Telecommunication Engineering

LESSON PLAN

Session	::	WINTER 2022
Course Type	::	Theory
Semester/Branch	::	3RD Semester, Electronics and Telecommunication Engineering
Subject (with code)	::	Electronics Instrumentation and Measurement (TH 4)
Contact hours/week	::	4 hours
Name of Faculty	::	Mr Abhiram Pradhan

SL. NO.	CLASS ID	COURSE CONTENT	MODE OF DELIVERY	EXHIBIT/ REFERENCE
1	CH-1	Discuss the Static Characteristics, Accuracy, Describe sensitivity, reproducibility & static error of instruments.	Lecture (Explanation)	Study Material
2		Dynamic characteristics & speed of instruments. Errors of an instrument & explain various types.	Lecture (Explanation)	Study Material
3	CH-2	Introduction to Indicator & Display devices & its types.	Lecture (Explanation)	Study Material
4		Basic principle of meter movement, permanent magnetic moving coil movement & its advantages & disadvantages.	Video content	Study Material/ https://youtu.be/ZtBKC6WSjD0?t=49
5		Operation of Moving Iron Instrument.	Lecture (Explanation)	Study Material/ https://youtu.be/L9wHaLyv94Q
6		Basic principle of operation of DC Ammeter and Multi range Ammeter.	Lecture (Explanation)	Study Material/ https://youtu.be/JGv00Lkkofg
7		Basic principle of operation of AC Ammeter and Multi range Ammeter.	Lecture (Explanation)	Study Material/ https://youtu.be/doj90pagruY
8		Basic principle of operation of DC	Lecture (Explanation)	Study Material/ https://youtu.be/mCAXRsyp4Bc

		Voltmeter and its applications.		
9		Basic principle of operation of AC Voltmeter and its application.	Lecture (Explanation)	Study Material
10		Basic principle of Ohm Meter (Series & Shunt type).	Lecture (Explanation)	Study Material/ https://youtu.be/LdAb3hUDTRY/ https://youtu.be/tgQiTbAWgyw
11		Basic principle of Analog Multimeter, its types & applications. Operation of Q meter and its essentials.	Lecture (Explanation)	Study Material/ https://youtu.be/uMnoTtI3YUw https://youtu.be/khzm-XkleIg
12		CLASS TEST, DOUBT CLEARING CLASS.		
13	CH-3	Principle of operation of Ramp type Digital Voltmeter & applications, Operation of display of 3 1/2, 4 1/2– Digital Multimeter & Resolution and Sensitivity.	Lecture (Explanation)	Study Material
14		Basic principle of operation of working of Digital Multimeter.	Lecture (Explanation)	Study Material/ https://youtu.be/At1C-o3evTM
15		Digital Multimeter, types & applications. Basic principle of operation of working of Digital Frequency Meter.	Lecture (Explanation)	Study Material
16		Operation of working of Digital Measurement of Time. Measurement of Frequency.	Lecture (Explanation)	Study Material
17		Principle of operation of working of Digital Tachometer. Principle of operation of working of Automation in Digital Instruments	Lecture (Explanation)	Study Material
18		Polarity Indication, Ranging, Zeroing & Fully Automatic. Block diagram of	Lecture (Explanation)	Study Material

		LCR meter & it's working principle.		
19	CH-4	Basic principle of Oscilloscope& its Block Diagram.	Lecture (Explanation)	Study Material
20		Basic principle & Block diagram of CRO, Dual Trace Oscilloscope & its specification.	Student presentation	Study Material
21		CRO Measurements, Lissajous figures.	Student presentation	Study Material
22		Applications of Oscilloscope (Voltage period & frequency measurement).	Lecture (Explanation)	Study Material
23		Operation of Digital Storage Oscilloscope & High frequency Oscilloscope.	Lecture (Explanation)	Study Material
24		CLASS TEST. DOUBT CLEARING CLASS.	Lecture (Explanation)	Study Material
25	CH-5	Types of Bridges (DC & Ac Bridges).	Lecture (Explanation)	Study Material
26		DC Bridges (Measurement of Resistance by Wheatstone's Bridge).	Lecture (Explanation)	Study Material
27		AC bridges (Measurement of inductance by Maxwell's Bridge & by Hay's Bridge).	Lecture (Explanation)	Study Material
28		Measurement of capacitance by Schering's Bridge &	Lecture (Explanation)	Study Material
29		Measurement of capacitance by DeSauty'S Bridge.	Lecture (Explanation)	Study Material
30		Working principle of Q meter its circuit diagram & measurement of Low impedance.	Lecture (Explanation)	Study Material
31		Measurement of frequency.	Lecture (Explanation)	Study Material
32		LCR Meter & it's measurements.	Lecture (Explanation)	Study Material
33	CH-6	Parameter, method of Selecting Transducer.	Lecture (Explanation)	Study Material
34		Advantage of Electrical	Lecture (Explanation)	Study Material

		Transducer & Resistive Transducer.		
35		Working principle of Strain Gauges, define Strain Gauge (No mathematical Derivation).	Lecture (Explanation)	Study Material
36		Working principle of LVDT.	Lecture (Explanation)	Study Material
37		Working principle of capacitive transducers (pressure).	Lecture (Explanation)	Study Material
38		Working principle of Load Cell (Pressure Cell).	Lecture (Explanation)	Study Material
39		Working principle of Temperature Transducer (RTD)	Lecture (Explanation)	Study Material
40		Working principle of Current transducer and KW Transducer.	Lecture (Explanation)	Study Material
41		Working principle of Proximity & Light sensors.	Lecture (Explanation)	Study Material
42		Optical Pyrometer, Thermocouple, Thermistor.	Lecture (Explanation)	Study Material
43	CH-7	General aspect & classification of Signal generators.	Lecture (Explanation)	Study Material
44		Working principle of AF Sine & Square wave generator.	Lecture (Explanation)	Study Material
45		Working principle of the Function Generator.	Lecture (Explanation)	Study Material
46		Function of basic Wave Analyzer & Spectrum Analyzer.	Lecture (Explanation)	Study Material
47		Basic concept of Data Acquisition System (DAS).	Lecture (Explanation)	Study Material
48		Class Test. Doubt Clearing Class.	Lecture (Explanation)	Study Material

Signature of Concern Teacher