LESSON PLAN

Discipline: ETC. Engg.	**Semester:** Third (3rd)	**Name of the Faculty:** Er Abdul Sajid Khan
Subject: Electronics Measurement & Instrumentation	**No. of days/week class allotted:** Six (6)	**Semester from Date:** 15.09.22 **to Date:**22 .12.22 **No. of Weeks:** 15
WEEK	**CLASS DAY**	**THEORY TOPICS**
1st	1st	Discuss the static characteristics.
	2nd	Accuracy, Sensitivity.
	3rd	Reproducibility & static error of instrument.
	4th	Dynamic characteristics & speed of instruments.
	5th	Errors of an instrument and explain various types.
	6th	**Review**
2nd	1st	Introduction to indicator & Display devices & its types.
	2nd	Basic principle of meter movement &its advantages & disadvantages.
	3rd	Basic principle of permanent magnetic moving coil movement &its advantages & disadvantages.
	4th	Operation of Moving Iron Instrument.
	5th	Basic principle of operation of DC Ammeter & Multi range Ammeter.
	6th	Basic principle of operation of AC Ammeter & Multi range Ammeter.
3rd	1st	Basic principle of operation of DC voltmeter & its applications.
	2nd	Basic principle of operation of AC voltmeter & its applications.
	3rd	Basic principle ohm meter (series & shunt type).
	4th	Basic principle of Analog Multimeter, its types & applications.
	5th	Operation of Q meter & its essentials.
	6th	**Review**

4th	1st	Principle of operation of Ramp type Digital voltmeter & applications.
	2nd	Applications of Ramp type Digital voltmeter.
	3rd	Operation of display of 3 1/2
	4th	4 1/2 –Digital Multimeter and Resolution & Sensitivity.
	5th	Basic principle of operation of working of digital Multimeter types & application.
	6th	**Monthly Test**
5th	1st	Basic principle of operation of working of frequency Meter.
	2nd	Operation of working of Digital Measurement of Time.
	3rd	Measurement of Frequency.
	4th	Principle of operation of working of Digital Tachometer.
	5th	Principle of operation of working of Automation in Digital Instruments (polarity indication, ranging,).
	6th	Principle of operation of working of Automation in Digital Instruments zeroing& fully Automatic.)
6th	1st	Block Diagram of LCR meter & it's working principle.
	2nd	**Review**
	3rd	Basic principle of Oscilloscope & its Block Diagram.
	4th	Basic principle & Block Diagram of CRO,
	5th	Dual Trace Oscilloscope & its specification.
	6th	CRO Measurements
7th	1st	Lissajous figures.
	2nd	**Monthly Test**
	3rd	Application of oscilloscope (voltage ,period & frequency measurement).
	4th	Operation of Digital Storage Oscilloscope.
	5th	High frequency Oscilloscope.
	6th	**Review**

8th	1st	Types of Bridges (DC & AC Bridges).
	2nd	DC Bridges (Measurement of Resistance by Wheatstone's Bridge.
	3rd	AC bridges (Measurement of inductance by Maxwell's Bridge).
	4th	AC bridges (Measurement of inductance by Hay's Bridge).
	5th	Measurement of capacitance by Schering's Bridge.
	6th	DeSauty Bridge.
9th	1st	Working principle of Q meter its circuit diagram and measurement of Low impedance.
	2nd	Measurement of frequency.
	3rd	LCR Meter & its measurement.
	4th	**Review**
	5th	Parameter, method of selecting & advantage of Electrical Transducer.
	6th	Parameter, method of selecting & advantage of Resistive Transducers.
10th	1st	Working principle of strain gauge ,define Strain Gauge(No Mathematical Derivation).
	2nd	Working principle of LVDT.
	3rd	**Monthly Test**
	4th	Working principle of capacitive transducer(pressure).
	5th	Working principle of load cell(pressure cell).
	6th	Working principle of Temperature Transducer (RTD).
11th	1st	Working principle of Temperature Transducer(Optical Pyrometer).
	2nd	Working principle of Temperature Transducer (Thermocouple, Thermistor).
	3rd	Working principle of current transducer and KW Transducer.
	4th	Working principle of proximity & Light sensor.
	5th	**Review**

	6th	General aspect & classification of Signal generators
12th	1st	Working principle of AF sine wave generator.
	2nd	Working principle of AF square wave generator.
	3rd	Working principle of Function Generator.
	4th	Function of basic wave analyser & spectrum analyser.
	5th	Basic concept of Data Acquisition system (DAS).
	6th	**Review**
13th	1st	**Monthly Test**
	2nd	Revision class
	3rd	Revision class
	4th	Revision class
	5th	Revision class
	6th	Revision class
14th	1st	Revision class
	2nd	Revision class
	3rd	Revision class
	4th	Revision class
	5th	Revision class
	6th	Revision class
15th	1st	Revision class
	2nd	Revision class
	3rd	Revision class
	4th	Revision class
	5th	Revision class
	6th	Revision class