



LESSONPLAN

DISCIPLINE:- ELECTRONICS TELECOMMUNICATION ENGINEERING	SEMESTER:- 3 rd	NAME OF THE TEACHING FACULTY: PRATIK MOHANTY
SUBJECT TH:3- EM&I	NO. OF DAYS/PER WEEK CLASS ALLOTTED:- 3	SEMESTER FROM DATE:- 14-07-2025 TO DATE :- 15 - 11-2025
Week	Class day	Theory
1 st	1 st	1.Qualities of Measurement 1.1 Discuss the Static Characteristics
	2 nd	1.2 Accuracy, sensitivity, reproducibility and static error of instruments
	3 rd	1.3 Dynamic characteristics and speed of instruments.
2 nd	1 st	1-4 Errors of an instrument
	2 nd	2.Indicating Instruments 2.1 Introduction 2.2 Types of Indicating Instrument
	3 rd	2.3 Basic operating principle of Indicating Instruments 2.4 Working principle of permanent magnetic moving coil Instrument
3 rd	1 st	2.5 Working principle of Moving Iron Instrument
	2 nd	2.6 Basic principle of operation of DC Ammeter and Multi range Ammeter 2.7 Basic principle of operation of AC Ammeter and Multi range Ammeter
	3 rd	2.8 Basic principle of operation of DC Voltmeter and its applications 2.9 Basic principle of operation of AC Voltmeter and its application
4 th	1 st	2.10 Basic principle of Ohm Meter (Series & Shunt type)
	2 nd	2.11 Basic principle of Analog Multimeter and its types & applications 2.12 Operation of Q meter and its essentials
	3 rd	3.Digital Instruments 3.1 Principle of operation of Ramp type Digital Voltmeter & applications
5 th	1 st	3.2 Operation of display of Digital Multimeter & Resolution and Sensitivity
	2 nd	3.3 Basic Operating principle of Digital Multimeter, its types & application
	3 rd	3.4 Basic Operating principle of Digital Frequency Meter
6 th	1 st	3.5 Digital Measurement of Time
	2 nd	3.6 Measurement of Frequency
	3 rd	3.7 Operating principle of Digital Tachometer 3.8 LCR meter & its working principle
7 th	1 st	4.Oscilloscope 4.1 Basic Operating principle of Oscilloscope & its Block Diagram
	2 nd	4.2 Basic Operating principle of Dual Trace Oscilloscope & its specification
	3 rd	4.3 CRO Measurements
8 th	1 st	4.4 Lissajous figures
	2 nd	4.5 Applications of Oscilloscope in measurement of Voltage and frequency 4.5 Basic Operating principle of Digital Storage Oscilloscope
	3 rd	4.6 Basic Operating principle of High frequency Oscilloscope
9 th	1 st	4.6 Basic Operating principle of High frequency Oscilloscope
	2 nd	5.Bridges 5.1 Types of Bridges (DC & AC Bridges)
	3 rd	5.2 DC Bridges (Measurement of Resistance by Wheatstone's Bridge)
10 th	1 st	5.3 AC bridges (Measurement of inductance by Maxwell's Bridge & Hay's Bridge)
	2 nd	5.4 Measurement of capacitance by Schering's Bridge & DeSauty Bridge
	3 rd	5.5 Working principle of Q meter its circuit diagram & measurement of Low impedance

11 th	1st	5.6 Measurement of frequency 5.7 LCR Meter & its measurements
	2 nd	6. Transducers & Sensors 6.1 Define Transducer and Sensor 6.2 Type of Transducer
	3 rd	6.3 Parameters and advantages of Transducer 6.4 Working principle of Strain Gauges,
12 th	1st	6.5 Define Strain Gauge (No mathematical Derivation) 6.6 Working principle of LVDT
	2 nd	6.7 Working principle of capacitive transducers (pressure) 6.8 Working principle of Load Cell (Pressure Cell)
	3 rd	6.9 Working principle of Temperature Transducer (RTD, Optical Pyrometer, Thermocouple, and Thermister)
13 th	1st	6.10 Working principle of Current transducer.
	2 nd	6.11 Working principle of Proximity & Light sensors.
	3 rd	7. Signal Generator, Wave Analyser & DAS 7.1 General aspect & classification of Signal generators
14 th	1st	7.2 Working principle of AF Sine and Square wave generator
	2 nd	7.3 Working principle of the Function Generator
	3 rd	7.4 Function of basic Wave Analyser and Spectrum Analyser
15 th	1st	7.5 Basic concept of Data Acquisition System (DAS)
	2 nd	7.4 Function of basic Wave Analyser and Spectrum Analyser
	3 rd	7.5 Basic concept of Data Acquisition System (DAS)

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