



DEPARTMENT OF ELECTRONICS & TELE COMMUNICATION ENGINEERING

LESSON PLAN	
JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA	
Name of the Faculty: YASOBANTI NAYAK	Academic Year: 2025-26
Course Code.: Th-4	Course name: ELECTRONICS MEASUREMENT & INSTRUMENTS
Programme: Diploma	Branch: E&TC
Year/ Sem:-3 <sup>rd</sup> /5 <sup>th</sup>	Section:

Sl. No.	Period	Time (min)	Unit	Topic to be Covered	Teaching Method
1.	1.	1Hr	1	Qualities of Measurement :Discuss the Static Characteristics	Black board
2.	2.	1Hr	1	Accuracy, sensitivity, reproducibility and static error of instruments	Black board
3.	3.	1Hr	1	Dynamic characteristics and speed of instruments	Black board
4.	4.	1Hr	1	Errors of an instrument	Black board
5.	5.	1Hr	2	Introduction , Types of Indicating Instruments	SMART BOARD
6.	6.	1Hr	2	Basic operating principle of Indicating Instruments ,Working principle of permanent magnetic moving coil Instruments	Black board
7.	7.	1Hr	2	Working principle of Moving Iron Instrument Basic principle of operation of DC Ammeter and Multi range Ammeter	Black board
8.	8.	1Hr	2	Basic principle of operation of DC Ammeter and Multi range Ammeter	Black board
9.	9.	1Hr	2	Basic principle of operation of DC Voltmeter and its applications ,, Basic principle of operation of AC Voltmeter and its application	Black board
10	10.	1Hr	2	Basic principle of Ohm Meter (Series & Shunt type)	Black board
11	11.	1Hr	2	Basic principle of Analog Multimeter and its types & applications ,, Operation of Q meter and its essentials	Black board
12	12.	1Hr	3	Principle of operation of Ramp type Digital Voltmeter & applications	Black board
13	13.	1Hr	3	Operation of display of Digital Multimeter & Resolution and Sensitivity	Black board
14	14.	1Hr	3	Basic Operating principle of Digital Multimeter, its types & applications	Black board
15	15.	1Hr	3	Basic Operating principle of Digital Frequency Meter	Black board
16	16.	1Hr	3	Digital Measurement of Time ,,Measurement of Frequency	Black board
17	17.	1Hr	3	Operating principle of Digital Tachometer	SMART BOARD

18	18.	1Hr	3	LCR meter & its working principle	Black board
19	19.	1Hr	4	Basic Operating principle of Oscilloscope & its Block Diagram	Black board
20	20.	1Hr	4	Basic Operating principle of Dual Trace Oscilloscope & its specification	Black board
21	21.	1Hr	4	CRO Measurements	Black board
22	22.	1Hr	4	Lissajous figures	SMART BOARD
23	23.	1Hr	4	Applications of Oscilloscope in measurement of Voltage and frequency	Black board
24	24.	1Hr	4	Basic Operating principle of Digital Storage Oscilloscope	Black board
25	25.	1Hr	4	Basic Operating principle of High frequency Oscilloscope	Black board
26	26.	1Hr	5	Types of Bridges (DC & AC Bridges)	SMART BOARD
27	27.	1Hr	5	DC Bridges (Measurement of Resistance by Wheatstone's Bridge)	Black board
28	28.	1Hr	5	AC bridges (Measurement of inductance by Maxwell's Bridge & Hay's Bridge)	Black board
29	29.	1Hr	5	Measurement of capacitance by Schering's Bridge & DeSauty Bridge	Black board
30	30.	1Hr	5	Working principle of Q meter its circuit diagram & measurement of Low impedance	Black board
31	31.	1Hr	5	Measurement of frequency , LCR Meter & its measurements.	Black board
32	32.	1Hr	6	Define Transducer and Sensor ,,Type of Transducer	Black board
33	33.	1Hr	6	Parameters and advantages of Transducer ,, Working principle of Strain Gauges.	Black board
34	34.	1Hr	6	Define Strain Gauge (No mathematical Derivation) ,,Working principle of LVDT	Black board
35	35.	1Hr	6	Working principle of capacitive transducers (pressure) ,,Working principle of Load Cell (Pressure Cell)	Black board
36	36.	1Hr	6	Working principle of Temperature Transducer (RTD, Optical Pyrometer, Thermocouple, and Thermister)	Black board
37	37.	1Hr	6	10 Working principle of Current transducer.	SMART BOARD
38	38.	1Hr	6	Working principle of Proximity & Light sensors.	Black board
39	39.	1Hr	7	General aspect & classification of Signal generators	Black board
40	40.	1Hr	7	Working principle of AF Sine and Square wave generator	Black board
41	41.	1Hr	7	Working principle of AF Sine and Square wave generator	Black board
42	42.	1Hr	7	Working principle of the Function Generator	Black board
43	43.	1Hr	7	Working principle of the Function Generator	Black board
44	44.	1Hr	7	Function of basic Wave Analyser and Spectrum Analyser	Black board
45	45.	1Hr	7	Basic concept of Data Acquisition System (DAS)	Black board

