



NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)



LESSON PLAN

SUBJECT: EEPC207 (Electronics Measurement & Instrumentation)

Name Of The Faculty :- Er. Niranjan Sahu

Branch :- Electrical & Electronics Engineering

Academic Year : 2025-26

Semester :- 3rd

Examination :- 2025 (W)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Qualities of Measurement	6	7
2	Indicating Instruments	8	11
3	Digital Instruments	6	10
4	Oscilloscope	6	7
5	Bridges	6	16
6	Transducers & Sensors	8	7
7	Signal Generator, Wave Analyser & DAS	5	6
TOTAL		45	60

Sign of Faculty

Sign of H.O.D.

Name of the programme: Diploma in Electrical & Electronics Engineering	Semester: 3RD	Name of the Teaching Faculty: Er. Niranjan Sahu	
		Academic Year : 2025-26	Examination : 2025 (W)
Course Code: EEEPC207/ TH:3	Course Year: Second Year	No. of Classes Alloted Per Week :	4
		Planned Classes Required to Complete the Course	60
Week	Class Day	Topics to be Covered	
1st	1st	Qualities of Measurement 1.1 Discuss the Static Characteristics	
	2nd	1.1 Discuss the Static Characteristics	
	3rd	1.2 Accuracy, sensitivity, reproducibility and static error of instruments	
	4th	1.2 Accuracy, sensitivity, reproducibility and static error of instruments	
2nd	1st	1.3 Dynamic characteristics and speed of instruments	
	2nd	1.3 Dynamic characteristics and speed of instruments	
	3rd	1-4 Errors of an instrument	
	4th	Indicating Instruments 2.1 Introduction 2.2 Types of Indicating Instruments	
3rd	1st	2.3 Basic operating principle of Indicating Instruments	
	2nd	2.4 Working principle of permanent magnetic moving coil Instruments	
	3rd	2.5 Working principle of Moving Iron Instrument	
	4th	2.6 Basic principle of operation of DC Ammeter and Multi range Ammeter	
4th	1st	2.7 Basic principle of operation of AC Ammeter and Multi range Ammeter	
	2nd	2.8 Basic principle of operation of DC Voltmeter and its applications	
	3rd	2.9 Basic principle of operation of AC Voltmeter and its application	
	4th	2.10 Basic principle of Ohm Meter (Series & Shunt type)	
5th	1st	2.11 Basic principle of Analog Multimeter and its types & applications	
	2nd	2.12 Operation of Q meter and its essentials	
	3rd	Digital Instruments 3.1 Principle of operation of Ramp type Digital Voltmeter & applications	
	4th	3.2 Operation of display of Digital Multimeter & Resolution and Sensitivity	

Week	Class Day	Topics to be Covered
6 th	1 st	3.3 Basic Operating principle of Digital Multimeter, its types & applications
	2 nd	3.4 Basic Operating principle of Digital Frequency Meter
	3 rd	3.5 Digital Measurement of Time
	4 th	3.6 Measurement of Frequency
7 th	1 st	3.7 Operating principle of Digital Tachometer
	2 nd	3.8 LCR meter & its working principle
	3 rd	3.8 LCR meter & its working principle
	4 th	Oscilloscope 4.1 Basic Operating principle of Oscilloscope & its Block Diagram
8 th	1 st	4.2 Basic Operating principle of Dual Trace Oscilloscope & its specification
	2 nd	4.3 CRO Measurements
	3 rd	4.4 Lissajous figures
	4 th	4.4 Applications of Oscilloscope in measurement of Voltage and frequency
9 th	1 st	4.5 Basic Operating principle of Digital Storage Oscilloscope
	2 nd	4.6 Basic Operating principle of High frequency Oscilloscope
	3 rd	Bridges 5.1 Types of Bridges (DC & AC Bridges)
	4 th	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
	4 th	5.6 Measurement of frequency
11 th	1 st	5.7 LCR Meter & its measurements
	2 nd	Transducers & Sensors 6.1 Define Transducer and Sensor 6.2 Type of Transducer
	3 rd	6.3 Parameters and advantages of Transducer
	4 th	6.4 Working principle of Strain Gauges
12 th	1 st	6.5 Define Strain Gauge (No mathematical Derivation)
	2 nd	6.6 Working principle of LVDT
	3 rd	6.7 Working principle of capacitive transducers (pressure)
	4 th	6.7 Working principle of capacitive transducers (pressure)

Week	Class Day	Topics to be Covered
13 th	1 st	6.8 Working principle of Load Cell (Pressure Cell)
	2 nd	6.9 working principle of Temperature Transducer (RTD, Optical Pyrometer, Thermocouple and Thermister)
	3 rd	6.10 Working principle of Current transducer
	4 th	6.11 Working principle of Proximity & Light sensors
14 th	1 st	Signal Generator, Wave Analyser & DAS 7.1 General aspect & classification of Signal generators
	2 nd	7.1 General aspect & classification of Signal generators
	3 rd	7.2 Working principle of AF Sine and Square wave generator
	4 th	7.2 Working principle of AF Sine and Square wave generator
15 th	1 st	7.3 Working principle of the Function Generator
	2 nd	7.3 Working principle of the Function Generator
	3 rd	7.4 Function of basic Wave Analyser and Spectrum Analyser
	4 th	7.5 Basic concept of Data Acquisition System (DAS)

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