

BALASORE SCHOOL OF ENGINEERING, BALASORE
 Department of Electronics & Telecommunication Engineering
 LESSON PLAN FOR 3RD SEMESTER, ELECTRONICS & TELECOMMUNICATION ENGG.
 SUBJECT- **ELECTRONICS MEASUREMENT & INSTRUMENTATION (TH-04)**
 NAME OF THE FACULTY- ER. GOUR GOPAL DAS

SL NO	MONTH	DATE	CH. NO	TOPICS TO BE COVERED	NO. OF PERIODS REQUIRED AS PER SYLLABUS	NO OF PERIODS AVAILABLE AS PER PLAN		
01	SEPT'22	16/09/2022	Ch-01	Unit-1: Qualities of Measurement	05	04		
		19/09/2022		1.1 Discuss the Static Characteristics				
		20/09/2022		1.2 Accuracy, sensitivity, reproducibility & static error of instruments				
		21/09/2022		1.3 Dynamic characteristics & speed of instruments				
		23/09/2022	Ch-02	Unit-2: Indicating Instruments			10	10
		24/09/2022		2.1 Introduction to Indicator & Display devices & its types				
		26/09/2022		2.2 Basic principle of meter movement, permanent magnetic moving coil movement & its advantages & disadvantages.				
		27/09/2022		2.3 Operation of Moving Iron Instrument				
		28/09/2022		2.4 Basic principle of operation of DC Ammeter and Multi range Ammeter				
		30/09/2022		2.5 Basic principle of operation of AC Ammeter and Multi range Ammeter				
02	OCT'22	01/10/2022		2-6 Basic principle of operation of DC Voltmeter and its applications	08	08		
		11/10/2022		2.7 Basic principle of operation of AC Voltmeter and its application				
		12/10/2022		2.8 Basic principle of Ohm Meter (Series & Shunt type)				
		14/10/2022		2.9 Basic principle of Analog Multimeter, its types & applications				
		15/10/2022	Ch-03	Unit-3: Digital Instruments			08	08
		17/10/2022		3.1 Principle of operation of Ramp type Digital Voltmeter & applications				
		18/10/2022		3.2 Operation of display of 3 1/2, 4 1/2- Digital Multimeter & Resolution and Sensitivity				
		19/10/2022		3.3 Basic principle of operation of working of Digital Multimeter its types & applications				
		21/10/2022		3.4 Basic principle of operation of working of Digital Frequency Meter				
		22/10/2022		3.5 Operation of working of Digital Measurement of Time				
	3.6 Measurement of Frequency							



03	NOV'22	25/10/2022		3.7 Principle of operation of working of Digital Tachometer	08	06
		26/10/2022		3.8 Principle of operation of working of Automation in Digital Instruments (Polarity Indication, Ranging, Zeroing & Fully Automatic) 3.9 Block diagram of LCR meter & its working principle		
		28/10/2022	Ch-04	Unit-4: Oscilloscope 4.1 Basic principle of Oscilloscope& its Block Diagram		
		29/10/2022		4.2 Basic principle & Block diagram of CRO, Dual Trace Oscilloscope & its specification		
	31/10/2022	4.3 CRO Measurements, Lissajous figures				
	01/11/2022	4.4 Applications of Oscilloscope (Voltage period & frequency measurement)				
		02/11/2022		4.5 Operation of Digital Storage Oscilloscope& High frequency Oscilloscope		
		04/11/2022				
		05/11/2022	Ch-05	Unit-5: Bridges 5.1 Types of Bridges (DC& Ac Bridges)	11	09
		08/11/2022		5.2 DC Bridges (Measurement of Resistance by Wheatstone's Bridge)		
		09/11/2022		5.3 AC bridges (Measurement of inductance by Maxwell's Bridge & by Hay's Bridge)		
		11/11/2022		5.4 Measurement of capacitance by Schering's Bridge & DeSauty Bridge		
		12/11/2022		5.5 Working principle of Q meter its circuit diagram & measurement of Low impedance		
		21/11/2022		5.6 Measurement of frequency		
	22/11/2022	5.7 LCR Meter & its measurements				
	23/11/2022					
	25/11/2022					
	26/11/2022	Ch-06	Unit-6: Transducers & Sensors 6.1 Parameter, method of Selecting & advantage of Electrical Transducer & Resistive Transducer	11	11	
	28/11/2022		6.2 Working principle of Strain Gauges, define Strain Gauge (No mathematical Derivation)			
	29/11/2022		6.3 Working principle of LVDT			
	30/11/2022		6.4 Working principle of capacitive transducers (pressure)			
			6.5 Working principle of Load Cell (Pressure Cell)			
	02/12/2022		6.6 Working principle of Temperature Transducer (RTD, Optical Pyrometer, Thermocouple, Thermister)			
	03/12/2022		6.7 Working principle of Current transducer and KW Transducer.			
	05/12/2022		6.8 Working principle of Proximity & Light sensors			
	06/12/2022					
	07/12/2022					
	09/12/2022					
	10/12/2022					
04	DEC'22	12/12/2022	Ch-07	Unit-7: Signal Generator, Wave Analyser & DAS 7.1 General aspect & classification of Signal generators	05	05
		13/12/2022		7.2 Working principle of AF Sine & Square wave generator		
		14/12/2022		7.3 Working principle of the Function Generator		
		16/12/2022		7.4 Function of basic Wave Analyser& Spectrum Analyser		
		17/12/2022		7.5 Basic concept of Data Acquisition System (DAS)		



Sl. NO.	MONTH	CHAPTERS TO BE COMPLETED	% OF COURSE COMPLETION
01	SEP'22	Chapter -01, Chapter-02 Continue	
02	OCT'22	Chapter - 02, 03, Chapter-04 Continue	20%
03	NOV'22	Chapter- 04, 05, Chapter-06 Continue	30%
04	DEC'22	Chapter-06, 07	30%
			20%

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