GANDHI SCHOOL OF ENGINEERING

BHABANDHA,BERHAMPUR

PROPOSED WORK

3rd SEM SUBJECT- Th4. ELECTRONICS MEASUREMENT & INSTRUMENTATION

NAME OF FACULTY- SATYABRATA TRIPATHY

SL NO. CHAPTER	TOPICS	NO OF PERIODS ASSIGNED BY SCTE&VT	PLANNING DATES	REMARKS
1	**Qualities of Measurement** 1.1 Discuss the Static Characteristics, 1.2 Accuracy, sensitivity, reproducibility & static error of instruments 1.3 Dynamic characteristics& speed of instruments. 1-4 Errors of an instrument & explain various types.	05	01 OCT 2021 To 08 OCT 2021	
2	**Indicating Instruments** 2.1 Introduction to Indicator & Display devices & its types 2.2 Basic principle of meter movement, permanent magnetic moving coil movement & its advantages & disadvantages. 2.3 Operation of Moving Iron Instrument 2.4 Basic principle of operation of DC Ammeter and Multi range Ammeter 2.5 Basic principle of operation of AC Ammeter and Multi range Ammeter 2-6 Basic principle of operation of DC Voltmeter and its applications 2.7 Basic principle of operation of AC Voltmeter and its application 2.8 Basic	10	09 0CT 2021 To 08 NOV 2021	

	principle of Ohm Meter (Series & Shunt type) 2.9 Basic principle of Analog Multimeter, its types & applications 2-10 Operation of Q meter and its essentials			
3	**Digital Instruments** 3.1 Principle of operation of Ramp type Digital Voltmeter & applications 3.2 Operation of display of 3 1/2, 4 1/2– Digital Multimeter & Resolution and Sensitivity 3.3 Basic principle of operation of working of Digital Multimeterits types & applications 3.4 Basic principle of operation of working of Digital Frequency Meter 3.5 Operation of working of Digital Measurement of Time 3.6 Measurement of Frequency. 3.7 Principle of operation of working of Digital Tachometer 3rd Semester ETC 14 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.	**10**	**12 NOV 2021** **To** **30 NOV 2021**	
4	**Oscilloscope** 4.1 Basic principle of Oscilloscope& its Block Diagram 4.2 Basic principle & Block diagram of CRO, Dual Trace Oscilloscope & its specification 4.3 CRO Measurements, Lissajous figures 4.4 Applications of Oscilloscope (Voltage period & frequency measurement) 4.5 Operation of Digital Storage Oscilloscope& High frequency Oscilloscope	**08**	**02 DEC 2021** **To** **27 DEC 2021**	

5	**Bridges** 5.1 Types of Bridges (DC& Ac Bridges) 5.2 DC Bridges (Measurement of Resistance by Wheatstone's Bridge) 5.3 AC bridges (Measurement of inductance by Maxwell's Bridge & by Hay's Bridge) 5.4 Measurement of capacitance by Schering's Bridge & DeSauty Bridge. 5.5 Working principle of Q meter its circuit diagram & measurement of Low impedance 5.6 Measurement of frequency 5.7 LCR Meter & its measurements	**11**	**26 OCT 2021 To 04 DEC 2021**	
6	**Transducers & Sensors** 6.1 Parameter, method of Selecting & advantage of Electrical Transducer & Resistive Transducer 6.2 Working principle of Strain Gauges, define Strain Gauge (No mathematical Derivation) 6.3 Working principle of LVDT 6.4 Working principle of capacitive transducers (pressure) 6.5 Working principle of Load Cell (Pressure Cell) 6.6 Working principle of Temperature Transducer (RTD, Optical Pyrometer, Thermocouple, Thermister) 6.7 Working principle of Current transducer and KW Transducer. 6.8 Working principle of Proximity & Light sensors.	**11**	**05 DEC 2021 To 03 DEC 2021**	
7	**Signal Generator, Wave Analyser & DAS** 7.1 General aspect & classification of Signal generators 7.2 Working principle of AF Sine & Square wave generator . 3rd Semester ETC 15 7.3 Working principle of the Function Generator	**05**	**04 JAN 2022 To 17 JAN 2022**	

	7.4 Function of basic Wave Analyser& Spectrum Analyser 7.5 Basic concept of Data Acquisition System (DAS)			

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