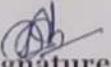


PNS SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ELECTRICAL ENGINEERING

Branch: Electrical Engg.	Semester: 3 rd	Name of the Lecturer: SNIGDHA DASH
Subject: EEM	Classes Allotted in a Week: 4	Duration of Semester: 14.07.2025 - 15.11.2025
Week	Class Day	Theory / Practical Topic
1st	1	Fundamentals of Measurements - Measurement: Significance, units, fundamental quantities and standards
	2	Classification of Instrument Systems
	3	Null and deflection type instruments
	4	Absolute and secondary instruments
2nd	1	Analog and digital instruments
	2	Static and dynamic characteristics
	3	Types of errors
	4	Calibration: need and procedure
3rd	1	Classification of measuring instruments: indicating, recording and integrating instruments
	2	Essential requirements of an indicating instruments
	3	Measurement of voltage and current - DC Ammeter: Basic DC Ammeter
	4	Multi range DC Ammeter
4th	1	Universal shunt DC Ammeter
	2	DC Voltmeter: Basic DC Voltmeter
	3	Multi-range DC Voltmeter
	4	concept of loading effect and sensitivity
5th	1	AC voltmeter: Rectifier type (half wave)
	2	AC voltmeter: Rectifier type (full wave)
	3	CT and PT: construction, working and applications
	4	Measurement of Electric Power - Analog meters: Permanent magnet moving coil (PMMC) their construction, working, salient features, merits and demerits
6th	1	Permanent magnet moving iron (PMMI) meter, their construction, working, salient features, merits and demerits
	2	Construction Of Dynamometer type wattmeter
	3	working Of Dynamometer type wattmeter
	4	Errors of PMMI,PMMC and Dynamometer type wattmeter
7th	1	compensations of PMMI,PMMC and Dynamometer type wattmeter
	2	Active and reactive power measurement: One, two and three wattmeter method
	3	Effect of Power factor on wattmeter reading in two wattmeter method
	4	Maximum Demand indicator(Definition only)

8th	1	Measurement of Electric Energy - Single phase electronic energy meter: Constructional features and working principle
	2	Single phase electronic energy meter: Constructional features and working principle
	3	three phase electronic energy meter: Constructional features and working principle
	4	three phase electronic energy meter: Constructional features and working principle
9th	1	Errors and their compensations
	2	Errors and their compensations
	3	Calibration of single-phase electronic energy meter using direct loading
	4	Circuit Parameter Measurement, CRO and Other Meters - Measurement of resistance
10th	1	Low resistance: Kelvin's double bridge,
	2	Medium Resistance: Voltmeter and ammeter method
	3	High resistance: Megger and Ohm meter: Series and shunt
	4	Measurement of inductance using Anderson bridge (no derivation and phasor diagram)
11th	1	Measurement of capacitance using Schering bridge (no derivation and phasor diagram)
	2	Single beam/single trace CRO (Working principle and block diagram only)
	3	Digital storage Oscilloscope: Basic block diagram, working, Cathode ray tube, electrostatic deflection, vertical amplifier, time base generator, horizontal amplifier, measurement of voltage/ amplitude/ time period/ frequency/ phase angle delay line, specifications
	4	Other meters: Earth tester, Digital Multimeter; L-C-R meter, Frequency meter (ferromagnetic and Weston type), Phase sequence indicator, power factor meter (single phase and three phase dynamometer type), Synchro scope, Tri-vector meter
12th	1	Signal generator: need, working and basic block diagram.
	2	Revision
	3	Revision
	4	Revision


Signature of the
Lecturer


Signature of the
H.O.D.

Signature of the
Principal