

DISCIPLINE- ELECTRICAL ENGG	SEMESTER- 3 RD	NAME OF THE TEACHING FACULTY- SIBANI PANDA,LECT (ELECT)	
SUB- ELECTRICAL & ELECTRONICS MEASUREMENT	NO OF CLASSES/ WEEK – 3P	TIME PERIOD- 01.07.2026 TO 05.11.2026 NO OF WEEKS- 18	
SL NO	CLASS DAY	TOPIC TO BE COVERED	REMARK
1	1 ST DAY	Fundamentals of Measurements	
	2 ND DAY	1.1 Measurement: Significance, units, fundamental quantities and standards	
	3 RD DAY	1.2 Classification of Instrument Systems	
2	1 ST DAY	1.3 Null and deflection type instruments	
	2 ND DAY	1.4 Absolute and secondary instruments	
	3 RD DAY	1.5 Analog and digital instruments	
3	1 ST DAY	1.6 Static and dynamic characteristics, types of errors	
	2 ND DAY	1.7 Calibration: need and procedure	
	3 RD DAY	1.8 Classification of measuring instruments: indicating, recording and integrating instruments	
4	1 ST DAY	1.9 Essential requirements of an indicating instruments	
	2 ND DAY	Measurement of voltage and current	
	3 RD DAY	2.1 DC Ammeter: Basic, Multi range, Universal shunt,	
5	1 ST DAY	2.2 DC Voltmeter: Basic, Multi-range, concept of loading effect and sensitivity	
	2 ND DAY	CLASS TEST	
	3 RD DAY		
6	1 ST DAY	2.3 AC voltmeter: Rectifier type (half wave and full wave)	
	2 ND DAY	2.4 CT : construction, working and applications	
	3 RD DAY		
7	1 ST DAY	2.4 PT : construction, working and applications	
	2 ND DAY	Measurement of Electric Power	
	3 RD DAY	3.1 Analog meters: Permanent magnet moving coil (PMMC) and Permanent magnet moving iron (PMMI) meter, their construction, working, salient features, merits and demerits	
8	1 ST DAY	3.2 Dynamometer type wattmeter: Construction and working	
	2 ND DAY	3.3 Errors and compensations of PMMI,PMMC and Dynamometer type wattmeter	
	3 RD DAY		
9	1 ST DAY	3.4 Active and reactive power measurement: One, two and three wattmeter method	
	2 ND DAY		
	3 RD DAY		
10	1 ST DAY	3.5 Effect of Power factor on wattmeter reading in two wattmeter method	
	2 ND DAY	3.6 Maximum Demand indicator(Definition only)	
	3 RD DAY	Measurement of Electric Energy	
11	1 ST DAY	4.1 Single and three phase electronic energy meter: Constructional features and working principle	
	2 ND DAY	4.1 Single and three phase electronic energy meter: Constructional features and working principle	
	3 RD DAY	4.2 Errors and their compensations	
12	1 ST DAY	INTERNAL	
	2 ND DAY	4.3 Calibration of single-phase electronic energy meter using direct loading.	
	3 RD DAY		
13	1 ST DAY	Circuit Parameter Measurement, CRO and Other Meters	
	2 ND DAY	5.1 Measurement of resistance	
	3 RD DAY	5.1.1 Low resistance: Kelvin's double bridge,	
14	1 ST DAY	5.1.2 Medium Resistance: Voltmeter and ammeter method	
	2 ND DAY	5.1.3 High resistance: Megger and Ohm meter: Series and shunt	
	3 RD DAY	5.2 Measurement of inductance using Anderson bridge (no derivation and phasor diagram)	
15	1 ST DAY	5.3 Measurement of capacitance using Schering bridge (no derivation and phasor diagram)	
	2 ND DAY	5.4 Single beam/single trace CRO (Working principle and block diagram only)	
	3 RD DAY	5.5 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.	

16	1 ST DAY 2 ND DAY 3 RD DAY	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)	
17	1 ST DAY 2 ND DAY 3 RD DAY	Synchro scope, Tri-vector meter 5.7 Signal generator: need, working and basic block diagram.	
18	1 ST DAY 2 ND DAY 3 RD DAY	REVISION VST	

Paul
26.06.26