DISCIPLINE– ELECTRICAL ENGG	SEMESTER- 3RD	NAME OF THE TEACHING FACULTY- SIBANI PANDA,LECT (ELECT)	
SUB- ELECTRICAL & ELECTRONICS MEASUREMENT	NO OF CLASSES/ WEEK – 3P	TIME PERIOD- 14.07.2025 TO 15.11.2025 NO OF WEEKS- 18	
SL NO	CLASS DAY	TOPIC TO BE COVERED	REMARK
1	1ST DAY 2ND DAY 3RD DAY	**Fundamentals of Measurements** 1.1 Measurement: Significance, units, fundamental quantities and standards 1.2 Classification of Instrument Systems 1.3 Null and deflection type instruments	
2	1ST DAY 2ND DAY 3RD DAY	1.4 Absolute and secondary instruments 1.5 Analog and digital instruments 1.6 Static and dynamic characteristics, types of errors	
3	1ST DAY 2ND DAY 3RD DAY	1.7 Calibration: need and procedure 1.8 Classification of measuring instruments: indicating, recording and integrating instruments	
4	1ST DAY 2ND DAY 3RD DAY	1.9 Essential requirements of an indicating instruments **Measurement of voltage and current** 2.1 DC Ammeter: Basic, Multi range, Universal shunt,	
5	1ST DAY 2ND DAY 3RD DAY	2.2 DC Voltmeter: Basic, Multi-range, concept of loading effect and sensitivity **CLASS TEST**	
6	1ST DAY 2ND DAY 3RD DAY	2.3 AC voltmeter: Rectifier type (half wave and full wave) 2.4 CT : construction, working and applications	
7	1ST DAY 2ND DAY 3RD DAY	2.4 PT : construction, working and applications **Measurement of Electric Power** 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	1ST DAY 2ND DAY 3RD DAY	3.2 Dynamometer type wattmeter: Construction and working 3.3 Errors and compensations of PMMI,PMMC and Dynamometer type wattmeter	
9	1ST DAY 2ND DAY 3RD DAY	3.4 Active and reactive power measurement: One, two and three wattmeter method	
10	1ST DAY 2ND DAY 3RD DAY	3.5 Effect of Power factor on wattmeter reading in two wattmeter method 3.6 Maximum Demand indicator(Definition only) **Measurement of Electric Energy** 4.1 Single and three phase electronic energy meter: Constructional features and working principle	
11	1ST DAY 2ND DAY 3RD DAY	4.1 Single and three phase electronic energy meter: Constructional features and working principle 4.2 Errors and their compensations	
12	1ST DAY 2ND DAY 3RD DAY	INTERNAL 4.3 Calibration of single-phase electronic energy meter using direct loading.	
13	1ST DAY 2ND DAY 3RD DAY	**Circuit Parameter Measurement, CRO and Other Meters** 5.1 Measurement of resistance 5.1.1 Low resistance: Kelvin's double bridge, 5.1.2 Medium Resistance: Voltmeter and ammeter method	
14	1ST DAY 2ND DAY 3RD DAY	5.1.3 High resistance: Megger and Ohm meter: Series and shunt 5.2 Measurement of inductance using Anderson bridge (no derivation and phasor diagram) 5.3 Measurement of capacitance using Schering bridge (no derivation and phasor diagram)	
15	1ST DAY 2ND DAY 3RD DAY	5.4 Single beam/single trace CRO (Working principle and block diagram only) 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	1ST DAY 2ND DAY	Other meters: Earth tester, Digital Multimeter; L-C-R meter, Frequency meter (ferromagnetic and Weston type), Phase sequence indicator, power factor meter	

	3RD DAY	(single phase and three phase dynamometer type	
17	1ST DAY 2ND DAY 3RD DAY	Synchro scope, Tri-vector meter 5.7 Signal generator: need, working and basic block diagram.	
18	1ST DAY 2ND DAY 3RD DAY	REVISION VST	

01.08.2025