

DISCIPLINE – ELECTRICAL ENGG	SEMESTER 4 TH	NAME OF THE TEACHING FACULTY- SIBANI PANDA, LECT(ELECT.)	
SUB-EM&I	No Of Days Per Week Class Alloted-5	SEMESTER FROM 14.02.2023 to 25.05.2023 NO OF WEEK – 15 WEEKS	
WEEK	CLASS DAY	THEORY	STATUS
1 ST WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	MEASURING INSTRUMENTS 1.1 Define Accuracy, precision, Errors, Resolutions Sensitivity and tolerance. 1.2 Classification of measuring instruments. 1.3 Explain Deflecting, controlling and damping arrangements in indicating type of instruments. 1.4 Calibration of instruments	
2 ND WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	ANALOG AMMETERS AND VOLTMETERS 2.1. Describe Construction, principle of operation, errors, ranges merits and demerits of: 2.1.1 Moving iron type instruments. 2.1.2 Permanent Magnet Moving coil type instruments.	
3 RD WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	2.1.3 Dynamometer type instruments 2.1.4 Rectifier type instruments 2.1.5 Induction type instruments 2.2 Extend the range of instruments by use of shunts and Multipliers.	
4 TH WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	2.3 Solve Numerical WATTMETERS AND MEASUREMENT OF POWER 3.1 Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)	
5 TH WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	3.2 The Errors in Dynamometer type wattmeter and methods of their correction. 3.3 Discuss Induction type watt meters.	
6 TH WEEK	1 ST day 2 nd day 3 rd day 4 th day 5 th day	ENERGYMETERS AND MEASUREMENT OF ENERGY 4.1 Introduction 4.2 Single Phase Induction type Energy meters – construction, working principle and their compensation & adjustments.	

7 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	4.3 Testing of Energy Meters. Internal assessment 1 MEASUREMENT OF SPEED, FREQUENCY AND POWER FACTOR 5.1 Tachometers, types and working principles 5.2 Principle of operation and construction of Mechanical resonance Type frequency meters	
8 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	Electrical resonance Type frequency meters. 5.3 Principle of operation and working of Dynamometer type single phase and three phase power factor meters MEASUREMENT OF RESISTANCE, INDUCTANCE & CAPACITANCE 6.1 Classification of resistance 6.1.1. Measurement of low resistance by potentiometer method.	
9 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	6.1.2. Measurement of medium resistance by wheat Stone bridge method. 6.1.3. Measurement of high resistance by loss of charge method. 6.2 Construction, principle of operations of Megger & Earth tester for insulation resistance and earth resistance measurement respectively. 6.3 Construction and principles of Multimeter. (Analog and Digital)	
10 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	6.4 Measurement of inductance by Maxwell's Bridge method. 6.5 Measurement of capacitance by Schering Bridge method SENSORS AND TRANSDUCER 7.1. Define Transducer, sensing element or detector element and transduction elements. 7.2. Classify transducer. Give examples of various class of transducer. 7.3. Resistive transducer	
11 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	7.3.1 Linear and angular motion potentiometer. 7.5.3 Change in distance between plate capacitive transducer. 7.6. Piezo electric Transducer and Hall Effect Transducer with their applications.	

12 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	7.3.2 Thermistor and Resistance thermometers. 7.3.3 Wire Resistance Strain Gauges 7.4. Inductive Transducer 7.4.1 Principle of linear variable differential Transformer (LVDT)	
13 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	7.4.2 Uses of LVDT 7.5. Capacitive Transducer. 7.5.1 General principle of capacitive transducer. 7.5.2 Variable area capacitive transducer	
14 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	OSCILLOSCOPE 8.1. Principle of operation of Cathode Ray Tube. 8.2. Principle of operation of Oscilloscope (with help of block diagram).	
15 TH WEEK	1 ST day 2 ND day 3 RD day 4 TH day 5 TH day	8.3. Measurement of DC Voltage & current. 8.4. Measurement of AC Voltage, current, phase & frequency Internal assessment 2	

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13.02.23