

Lesson Plan

Subject:-E M & I(Code) **TH-3**

Name of faculty: **-Biswabandita Khuntia**

Semester: **-4th(Summer)2025**

Class allotted:- **4 p/w**

Branch :- **Electrical Engg.**

Discipline	Semester:-4 th	From date:-04/02/25 To date:17/05/25	Teaching Aid
Subject:EC-1	No. of days/ per week 4 p/w	Theory/ Practical –Topics/Lesson	
Week	Date/Period		

1	04/02/25 to 08/02/25	1. 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.	White board & marker
2	10/02/25 to 15/02/25	2. 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.	White board & marker
3	17/02/25 to 22/02/25	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. 2.3 Solve Numerical 3.WATTMETERS AND MEASUREMENT OF POWER 3.1 Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type) 3.2The Errors in Dynamometer type wattmeter and methods of their correction.	White board & marker
4	24/02/25 to 01/03/25	3.3 Discuss Induction type watt meters. 4.ENERGY METERS AND MEASUREMENT OF ENERGY 4.1 Introduction 4.2 Single Phase Induction type Energy meters —construction, working principle and their compensation & adjustments 4.3 Testing of Energy Meters	White board & marker
5	03/03/25 to 08/03/25	5.MEASUREMENT OF SPEED, FREQUENCY AND POWER FACTOR 5.1 Tachometers, types and working principles	White board & marker
6	10/03/25 to 13/03/25	5.2 Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters. 5.3 Principle of operation and working of Dynamometer type single phase and three phase power factor meters.	White board & marker
7	17/03/25 to 21/03/25	6. MEASUREMENT OF RESISTANCE, INDUCTANCE & CAPACITANCE Classification of resistance 6.1.1. Measurement of low resistance by potentiometer method.. 6.1.2. Measurement of medium resistance by wheat Stone bridge method. 6.1.3. Measurement of high resistance by loss of charge method.	White board & marker
8	24/03/25 to 29/03/25	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)	White board & marker

9	02/04/25 to 15/04/25	6.4 Measurement of inductance by Maxwell's Bridge method. 6.5 Measurement of capacitance by Schering Bridge method	White board & marker
10	07/04/25 to 12/04/25	7. SENSORS AND TRANSDUCERS 7.1 Define Transducer, sensing element or detector element and transduction elements. 7.2 Classify transducer. Give examples of various class of transducer.	White board & marker
11	15/04/25 to 19/04/25	7.3 Resistive transducer 7.3.1 Linear and angular motion potentiometer. 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)	White board & marker
12	21/04/25 to 26/04/25	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. 7.5.3 Change in distance between plate capacitive transducer. 7.6 Piezoelectric Transducer and Hall Effect Transducer with their applications	White board & marker & smart board
13	28/04/25 to 03/05/25	8. OSCILLOSCOPE 8.1 Principle of operation of Cathode Ray Tube 8.2 Principle of operation of Oscilloscope (with help of block diagram). 8.3 Measurement of DC Voltage & current. 8.4 Measurement of AC Voltage, current, phase & frequency.	White board & marker
14	05/05/25 to 10/05/25	Revision	White board & marker
15	13/05/25 to 17/05/25	Revision	White board & marker & smart board

Biswadevita Ghosh
Signature of faculty

Bikram Keshari Panigrahi
Signature of HOD