GIET POLYTECHNIC, JAGATPUR,

CUTTACK

LESSON PLAN

Discipline: ETC	Semester: 3RD	Name Of The Teaching Faculty: DWITIKRUSHNA BEHERA
Subject: EM&I (Th4)	No. Of Days Per Week Class Allotted: 05P	Semester From Date: 01.07.2024 To Date: 08.11.2024 No.ofweeks: 15
Week	Class Day	Theory Topic
1ST	1st	**1. MEASURINGINSTRUMENTS** 1.1 Define Accuracy, precision, Errors, Resolutions, Sensitivity and tolerance.
	2nd	1.2Classificationofmeasuringinstruments.
	3rd	1.3ExplainDeflecting,controllinganddampingarrangementsin indicating type of instruments.
	4th	1.3ExplainDeflecting,controllinganddampingarrangementsinindicating type of instruments
2nd week	1st	1.4Calibrationofinstruments.
	2nd	**2. ANALOGAMMETERSANDVOLTMETERS** 2.1. Describe Construction, principle of operation, errors, ranges, merits and demerits. 2.1.1 Moving iron type instruments.
	3rd	2.1. Describe Construction, principle of operation, errors, ranges, merits and demerits of: 2.1.1 Moving iron type instruments
	4th	2.1.2PermanentMagnetMovingcoiltypeinstruments
3rd week	1st	2.1.3Dynamometertypeinstruments
	2nd	2.1.4Rectifiertype instruments
	3rd	2.1.5Inductiontypeinstruments
	4th	2.1.5Inductiontypeinstruments
4TH week	1st	2.2Extend the range of instruments by use of shunts and Multipliers.
	2nd	2.3SolveNumerical.
	3rd	2.3SolveNumerical.
	4th	**3. WATTMETERSANDMEASUREMENTOFPOWER** 3.1 Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)
5thweek	1st	3.1 Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)
	2nd	3.1 Describe Construction, principle of working of Dynamometer type wattmeter.(LPF and UPF type)
	3rd	3.2TheErrorsinDynamometertypewattmeterandmethodsoftheir correction.
	4th	3.2TheErrorsinDynamometertypewattmeterandmethodsoftheir Correction.

6th week	1st	3.3 Discuss Induction type wattmeter's
	2nd	3.3 Discuss Induction type wattmeter's
	3rd	3.3 Discuss Induction type wattmeter's
	4th	**CLASS TEST**
7th week	1st	**4.ENERGYMETERSANDMEASUREMENTOFENERGY** 4.1 Introduction
	2nd	4.2 Single Phase Induction type Energy meters–construction, working principle and their compensation & adjustments.
	3rd	4.2 Single Phase Induction type Energy meters–construction, working principle and their compensation & adjustments.
	4th	4.2 Single Phase Induction type Energy meters–construction, working principle and their compensation & adjustments.
8th week	1st	4.3 Testing of Energy Meters
	2nd	4.3 Testing of Energy Meters
	3rd	**5. MEASUREMENTOFSPEED,FREQUENCYANDPOWERFACTOR** 5.1 Tachometers, types and working principles
	4th	REVISION
9th week	1st	5.2 Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters
	2nd	5.2 Principle of operation and construction of Mechanical and Electrical Resonance Type frequency meters
	3rd	5.2 Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters
	4th	5.3 Principle of operation and working of Dynamometer type single phase and three phase power factor meters.
10th week	1st	5.3 Principle of operation and working of Dynamometer type single phase and three phase power factor meters.
	2nd	5.3 Principle of operation and working of Dynamometer type single phase and three phase power factor meters.
	3rd	**6. MEASUREMENTOFRESISTANCE,INDUCTANCE&C APACITANCE** 6.1 Classification of resistance 6.1..1.Measurement of low resistance by potentiometer method
	4th	6.1 .. 2.MeasurementofmediumresistancebyWheatstonebridge method.6.13.Measurementofhighresistancebylossofcharge method
11th week	1st	6.2 Construction, principle of operations of Megger & Earth tester for insulation resistance and earth resistance measurement respectively
	2nd	6.2 Construction, principle of operations of Megger & Earth tester for insulation Resistance and earth resistance measurement respectively
	3rd	6.3 Construction and principles of Multimeter. (Analog and Digital)
	4th	6.3 Construction and principles of MultiMate.(Analog and Digital)
12th week	1st	6.4 Measurement of inductance by Maxwell's Bridge method
	2nd	6.5 Measurement of capacitance by Schering Bridge method

13th week	3rd	**7. SENSORS AND TRANSDUCER** 7.1. Define Transducer, sen single mentor detector element and transduction elements.
	4th	7.2. Classify transducer.Giveexamplesofvariousclassoftransducer
	1st	7.3.2 Thermistor and Resistance thermometers. 7.3.3 Wire Resistance Strain Gauges
	2nd	7.3. InductiveTransducer
	3rd	7.4.1 Principle of linear variable differential Transformer(LVDT) 7.4.2 Uses of LVDT.
	4th	7.4.2 Uses of LVDT.
14th week	1st	7.5. Capacitive Transducer. 7.5.1 General principle of capacitive transducer.
	2nd	7.5.2 Variable area capacitive transducer. 7.5.3 Change in distance between plate capacitive transducer
	3rd	7.6. PiezoelectricTransducerandHallEffectTransducerwiththeirapplications
	4th	**8. OSCILLOSCOPE** 8.1. Principle of operation of Cathode Ray Tube.
15th week		8.2. Principle of operation of Oscilloscope (with the help of block diagram).
	1st	8.3. Measurement of DC Voltage & current.
	2nd	8.4. Measurement of AC Voltage, current, phase & frequency.
	3rd	8.5. Measurement of AC Voltage, current, phase & frequency.
	4th	CLASS TEST

Debiprasad Behera 29/06/24
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Head of Dept. (HOD)
Electrical & ETC Engg.
G.I.E.T (POLY), ...

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