LESSON PLAN



SUB: ELECTRICAL MEASUREMENT & INSTRUMENTATION

BRANCH:- ELECTRICAL ENGG.

SEMESTER: 4th

NAME OF FACULTY: UMESH KU. DALAI



GOVERNMENT POLYTECHNIC, **BHADRAK SESSION:2024-25**

HOD (ELIO? G.P.BHADRAK

Academic Co-ordinator

Academic Co-ordinator

Govt. Polytechnic, Bhadrak

Family Welfare, Parliamentary Affairs

Discipline: Electrical Engg.	Semester:	Name of the Teaching Faculty: UMESH KU DALAI(LECT IN ELECT.ENGG.)
Subject: Electrical Measurement & Instrumentation	No. of Days/per week class allotted:4+1	Semester from date: 04.02.2025 - 17.05.2025 No. of Weeks:15
Week	Class Day	Theory
1 st	1 st	Define Accuracy, precision, Errors, Resolutions Sensitivity and tolerance.
	2 nd	Classification of measuring instruments.
	3 rd	Explain Deflecting, controlling arrangements in indicating type of instruments.
	4 th	Explain damping arrangements in indicating type of instruments.
	5 th	Calibration of instruments.
	1 st	Describe Construction, principle of operation of Moving iron type instruments.
2 nd	2 nd	errors, ranges merits and demerits of Moving iron type instruments.
	3 rd	Describe Construction, principle of operation of Permanent Magnet Moving coil type instruments.
	4 th	errors, ranges merits and demerits of Permanent Magnet Moving coil type instruments.
	5 th	Describe Construction, principle of operation, errors, ranges merit and demerits of Dynamometer type instruments.
***	1 st	Describe Construction, principle of operation, errors, ranges merits and demerits of Rectifier type instruments.
	2 nd	Describe Construction, principle of operation, errors, ranges merits and demerits of Induction type instruments.
3 rd	3 rd	Extend the range of instruments by use of shunts and Multipliers.
· · · · · · · · · · · · · · · · · · ·	4 th	Extend the range of instruments by use Multipliers.
. · · · · ·	5 th	Solve Numerical
2 ° 1 ° 1	1 st	Describe Construction, principle of working of Dynamometer type wattmeter (LPF Type)
4 th	2 nd	Describe Construction, principle of working of Dynamometer type wattmeter (UPF Type)
	3 rd	The Errors in Dynamometer type wattmeter
	4 th	methods of their correction.
	5 th	Discuss Induction type watt meters.
	1 st	Discuss Induction type watt meters.
	2 nd	Introduction of Energy meter.

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		4 th	Define Transducer, sensing element of details
			detector element.
5 th Define transduction elements.		5 th	Define transduction elements

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10 th	1 st	Classify transducer. Give examples of various class of transducer
	2 nd	Resistive transducer .
	3 rd	Linear and angular motion potentiometer
	4 th	Thermistor and Resistance thermometers.
	5 th	Wire Resistance Strain Gauges
	1 st	Principle of linear variable differential Transformer (LVDT
11 th	2 nd	Principle of linear variable differential Transformer (LVDT
	3 rd	Construction and principles of Multimeter. (Analog and Digital)
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13 th	1 st	Wire Resistance Strain Gauges.
	2 nd	Inductive Transducer.
	3 rd	Principle of linear variable differential Transformer (LVDT).
	4 th	Uses of LVDT.
	5 th	Capacitive Transducer
	1 st	General principle of capacitive transducer.

	2 nd	Variable area capacitive transducer.
14 th	3 rd	Change in distance between plate capacitive transducer
	4 th	Piezo electric Transducer
	5 th	Hall Effect Transducer with their applications.
15 th	1 st	Principle of operation of Cathode Ray Tube.
	2 nd	Principle of operation of Oscilloscope (with help of block diagram).
	3 rd	Measurement of DC Voltage & current.
	4 th	Measurement of AC Voltage, current,
	5 th	Measurement of phase & frequency.

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