GOVT. POLYTECHNIC MAYURBHANJ LESSON PLAN- 2024-25 (SUMMER)				
Discipline : ELECTRICAL ENGG.		Semester: 4th Sem		Name of the Teaching Faculty : MANOJ KUMAR PRADHAN
Subject : EM&I		No. of Days / per week class allotted : 05		Semester From date : 04.02.2025 To Date : 17.05.2025
MONTH	Week	Day	Unit	Topics
FEBRUARY	WEEK 1	2ND	UNIT-1	1. MEASURING INSTRUMENTS
		4TH		Define Accuracy, precision, Errors, Resolutions Sensitivity and tolerance.
		4TH		Classification of measuring instruments
		5TH		Explain Deflecting, controlling and damping arrangements in indicating type of instruments.
	WEEK 2	1ST		Calibration of instruments.
		2ND	UNIT-2	2. ANALOG AMMETERS AND VOLTMETERS
		4TH		Describe Construction, principle of operation, errors, ranges merits and demerits of: Moving iron type instruments.
		4TH		Permanent Magnet Moving coil type instruments.
		5TH		Dynamometer type instruments
	WEEK 3	1ST		Rectifier type instruments
		2ND		Induction type instruments
		4TH		Extend the range of instruments by use of shunts and Multipliers.
		4TH		Solve Numerical
		5TH	UNIT-3	3. WATTMETERS AND MEASUREMENT OF POWER
	WEEK 4	1ST		Describe Construction, principle of working of Dynamometer type wattmeter. (LPF and UPF type)
		2ND		The Errors in Dynamometer type wattmeter and methods of their correction.
		4TH		Discuss Induction type watt meters.
		4TH	UNIT-4	4. ENERGYMETERS AND MEASUREMENT OF ENERGY
		5TH		Introduction
MARCH	WEEK 1	1ST		Single Phase Induction type Energy meters – construction
		2ND		working principle and their compensation & adjustments.
		4TH		Testing of Energy Meters
		4TH	UNIT-5	5. MEASUREMENT OF SPEED, FREQUENCY AND POWER FACTOR
		5TH		Tachometers, types and working principles
	WEEK 2	1ST		CLASS TEST-1
		2ND		
		4TH		Principle of operation and construction of Mechanical and Electrical resonance Type frequency meters.
		4TH		
	WEEK 3	1ST		Principle of operation and working of Dynamometer type single phase and three phase power factor meters.
		2ND		
		4TH	UNIT-6	6. MEASUREMENT OF RESISTANCE, INDUCTANCE& CAPACITANCE
		4TH		Classification of resistance
		5TH		Measurement of low resistance by potentiometer method.
	WEEK 4	1ST		Measurement of medium resistance by wheat Stone bridge method
		2ND		Measurement of high resistance by loss of charge method.
		4TH		Construction, principle of operations of Megger.
		4TH		Question Discussion
		5TH		Construction, principle of operations of Earth tester for insulation resistance.
APRIL	WEEK 1	4TH		Construction, principle of operations of earth resistance measurement.
		5TH		Construction and principles of Multimeter:- Analog
	WEEK 2	1ST		Construction and principles of Multimeter:- Digital
		2ND		Measurement of inductance by Maxewell's Bridge method.
		4TH		Measurement of capacitance by Schering Bridge method
		4TH	UNIT-7	7. SENSORS AND TRANSDUCER
		5TH		Define Transducer, sensing element or detector element and transduction elements.
	WEEK 3	2ND		Classify transducer. Give examples of various class of transducer.
		4TH		INTERNAL ASSESSMENT
		4TH		
	WEEK 4	1ST		Linear and angular motion potentiometer.
		2ND		Thermistor and Resistance thermometers.
		4TH		Wire Resistance Strain Gauges
		4TH		Inductive Transducer- Principle of linear variable differential Transformer (LVDT)
		5TH		Uses of LVDT.
	WEEK 5	1ST		Capacitive Transducer.General principle of capacitive transducer. Variable area capacitive transducer.
		2ND		Change in distance between plate capacitive transducer.
		4TH		Piezo electric Transducer with their applications.
MAY	WEEK 1	4TH	UNIT-8	Hall Effect Transducer with their applications.
		5TH		Question Discussion
	WEEK 2	1ST		8. OSCILLOSCOPE
		2ND		Principle of operation of Cathode Ray Tube.
		4TH		Measurement of DC Voltage & DC Current.
		4TH		Measurement of AC Voltage & AC Current.
		5TH		Measurement of AC Phase.
	WEEK 3	2ND		Measurement of AC frequency.
		4TH		REVISION
		4TH		REVISION
		5TH		2ND CLASS TEST