GOVT. POLYTECHNIC MAYURBHANJ LESSON PLAN				
Discipline : Metallurgical		Semester: 2ND	Name of the Teaching Faculty : LEENA MARNDI	
Subject :		FUNDAMENTAL OF ELECTRICAL AND ELECTRONICS		
No. of Days / per week class allotted : 04			Semester From date : 09.01.2026 To Date :08.05.2026	
MONT	Week	Day	UNIT	TOPICS
JANUARY	UNIT-1			Overview of Electronic Components & Signals
	Week 2	5TH	UNIT-1	Passive Components: Resistors. Types, Series and parallel Connection
	Week 3	1ST		Passive Components: Resistors Colour code and simple problem on
		2ND		Passive Components: Capacitors, Basic principle, unit etc
		5TH		Capacitance Series and parallel Connections with simple problems
		6TH		Passive Components: Inductor-Types, Basic principle, unit etc
	Week 4	1ST		Inductance Series and parallel Connections with simple problems
		2ND		Active Components : PN Junction Diode
	Week 5	2ND		Diode-Forward bias, Reverse Bias
		5TH		Zener Diode and LED - Working and application
		6TH		Transistor - Construction and Working of NPN and PNP Transistor
FEBRUARY	Week 1	1ST		Transistor configuration - CE, CB, CC with amplification factor
		2ND		MOS and CMOS and their Applications.
		5TH		Simple problems of Resistance, Capacitor & Inductor
		6TH		FET and Concept of MOS and CMOS
	Week 2	1ST		Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values,
		2ND		Different types of signal waveforms, Ideal/non-ideal voltage/current
		5TH		REVISION
	UNIT-2			Overview of Analog Circuits:
	Week 3	1ST	UNIT - 2	Overview of Analog Circuits: Op Amp parameters
		2ND		Ideal Op Amp characteristics
		5TH		Op Amp open loop configuration, Op Amp close loop configuration
		6TH		Op Amp Inverting mode amplifier, Op Amp Non-inverting mode amplifier
	Week 4	1ST		Op Amp as an adder
		2ND		Op Amp as a differentiator, integrator
		5TH		REVISION
		6TH		REVISION
	UNIT-3			Overview of Digital Electronics
MARCH	Week 1	1ST	UNIT - 3	Overview of Digital Electronics - Number system and conversions
		5TH		Boolean laws and theorem, Logic gates
		6TH		Flip flops and its types,
	Week 2	1ST		Use of flip flops as counter - asynchronous counters and synchronous counters
		2ND		Introduction to Integrated Circuits - Transistor Transistor Logic (TTL)
		5TH		REVISION
	UNIT-4			Electric and Magnetic Circuits
	Week 3	1ST	UNIT - 4	Electric and Magnetic Circuits - EMF, Current, Potential Difference, Power and Energy
		2ND		M.M.F, magnetic force, permeability
		5TH		hysteresis loop, reluctance, leakage factor and BH curve
	Week 4	1ST		Electromagnetic induction, Faraday's laws of electromagnetic induction, Lenz's law
		2ND		Dynamically induced emf, Statically induced emf
	Week 5	1ST		Equations of self and mutual inductance, Analogy between electric and magnetic circuits
	UNIT - 5			A.C. Circuits
	Week 5	2ND	UNIT - 5	A.C. Circuits:Cycle, Frequency, Periodic time, Amplitude, Angular velocity
APRIL	Week 1	6TH		RMS value, Average value, Form Factor,Peak Factor
	Week 2	1ST		Impedance, phase angle, and power factor; Mathematical and phasor representation of
		2ND		Voltage and Current relationship in Star and Delta connections;
		5TH		A.C in resistors, inductors and capacitors;
	Week 3	1ST		A.C in R-L series, R-C series, A.C in R-L-C series and parallel circuits
		5TH		Power in A. C. Circuits, power triangle.
		6TH		REVISION
	UNIT - 6			Transformer and Machines
	Week 4	1ST		Transformer and Machines: General construction and principle of different type of
		2ND		

		5TH	UNIT - 6	**Transformer and Machines: General construction and principle of different type of**
	Week 5	1ST		**Emf equation and transformation ratio of transformers**
		2ND		**Auto transformers**
MAY	**Week 1**	6TH		**Construction and Working principle of DC motors**
	Week 2	1ST		**Basic equations and characteristic of motors.**
		2ND		**Basic equations and characteristic of motors.**
		5TH		**REVISION**