GOVT. POLYTECHNIC MAYURBHANJ
LESSON PLAN

Discipline :	**Semester: 1st**			**Name of the Teaching Faculty :LEENA MARNDI**
Subject :	**FUNDAMENTAL OF ELECTRICAL AND ELECTRONICS**			
No. of Days / per week class allotted : 04				**Semester From date : 14.08.2024 To Date : 10.12.2024**
MONTH	**Week**	**Day**	**UNIT**	**TOPICS**
AUGUST	UNIT-1			Overview of Electronic Components & Signals
	Week 3	3rd	UNIT - 1	Passive Components: Resistors. Types, Series and parallel Connection
	Week 4	2nd		Passive Components: Resistors Colour code and simple problem on
		3rd		Passive Components: Capacitors, Basic principle, unit etc
		4th		Capacitance Series and parallel Connections with simple problems
	Week 5	2nd		Passive Components: Inductor-Types, Basic principle, unit etc
		3rd		Inductance Series and parallel Connections with simple problems
		4th		Active Components : PN Junction Diode
SEPTEMBER	Week 1	1st		Diode-Forward bias, Reverse Bias
		2nd		Zener Diode and LED - Working and application
		3rd		Transistor - Construction and Working of NPN and PNP Transistor
		4th		Transistor configuration - CE, CB, CC with amplification factor
	Week 2	1st		MOS and CMOS and their Applications.
		2nd		Simple problems of Resistance, Capacitor & Inductor
		3rd		FET and Concept of MOS and CMOS
		4th		Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values,
	Week 3	2nd		REVISION
	UNIT - 2			Overview of Analog Circuits:
	Week 3	3rd		Different types of signal waveforms, Ideal/non-ideal voltage/current sources,independent/dependent voltage current sources.
		4th	UNIT - 2	Overview of Analog Circuits: Op Amp parameters
	Week 4	1st		Ideal Op Amp characteristics
		2nd		Op Amp open loop configuration
		3rd		Op Amp close loop configuration
		4th		Op Amp Inverting mode amplifier
	Week 5	1st		Op Amp Non-inverting mode amplifier
	Week 1	2nd		Op Amp as an adder
		4th		Op Amp as a differentiator, integrator
	Week 3	1st		INTERNAL ASSESSMENT 1

OCTOBER		2nd		REVISION
	UNIT - 3			Overview of Digital Electronics
	Week 3	4th		Overview of Digital Electronics - Number system and conversions
	Week 4	1st	UNIT - 3	Boolean laws and theorem
		2nd		Logic gates
		3rd		Flip flops and its types
		4th		Use of flip flops as counter - asynchronous counters and synchronous counters
	Week 5	1st		Introduction to Integrated Circuits - Transistor Transistor Logic (TTL)
		2nd		REVISION
		3rd		REVISION
	UNIT - 4			Electric and Magnetic Circuits
	Week 5	3rd	UNIT - 4	Electric and Magnetic Circuits - EMF, Current, Potential Difference, Power and Energy
NOVEMBER	Week 2	1st		M.M.F, magnetic force, permeability
		2nd		hysteresis loop, reluctance, leakage factor and BH curve
		3rd		Electromagnetic induction, Faraday's laws of electromagnetic induction, Lenz's law
		4th		Dynamically induced emf, Statically induced emf
	Week 3	1st		Equations of self and mutual inductance
		2nd		Analogy between electric and magnetic circuits
		3rd		REVISION
	UNIT - 5			A.C. Circuits
	Week 3	4th	UNIT - 5	A.C. Circuits:Cycle, Frequency, Periodic time, Amplitude, Angular velocity
	Week 4	1st		RMS value, Average value, Form Factor,Peak Factor
		2nd		Impedance, phase angle, and power factor;
		3rd		Mathematical and phasor representation of alternating emf and current;
		4th		Voltage and Current relationship in Star and Delta connections;
	Week 5	1st		A.C in resistors, inductors and capacitors;
		2nd		A.C in R-L series, R-C series
		3rd		A.C in R-L-C series and parallel circuits;
		4th		Power in A. C. Circuits, power triangle.
DECEMBER	Week 1	1st		REVISION
	UNIT - 6			Transformer and Machines
	Week 1	2nd	UNIT - 6	Transformer and Machines: General construction and principle of different type of transformers
		3rd		Emf equation and transformation ratio of transformers
		4th		Auto transformers, Construction and Working principle of DC motors
	Week 2	1st		Basic equations and characteristic of motors.
		2nd		REVISION