

GOVT. POLYTECHNIC MAYURBHANJ

LESSON PLAN

Discipline :		Semester: 1st		Name of the Teaching Faculty : MANOJ KUMAR PRADHAN		
Subject :		FUNDAMENTAL OF ELECTRICAL AND ELECTRONICS ENGG [TH-4 (A)]				
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		
		5th		Passive Components: Resistors Colour code and simple problem on		
	Week 4	3rd		Passive Components: Capacitors, Basic principle, unit etc		
		4th		Capacitance Series and parallel Connections with simple problems		
		5th		Passive Components: Inductor-Types, Basic principle, unit etc		
	Week 5	3rd		Inductance Series and parallel Connections with simple problems		
		4th		Active Components : PN Junction Diode		
		5th		Diode-Forward bias, Reverse Bias		
				Zener Diode and LED - Working and application		
SEPTEMBER	Week 1	1st		Transistor - Construction and Working of NPN and PNP Transistor		
		3rd	Transistor configuration - CE, CB, CC with amplification factor			
		4th	MOS and CMOS and their Applications.			
		5th	Simple problems of Resistance, Capacitor & Inductor			
	Week 2	1st	FET and Concept of MOS and CMOS			
3rd		Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms, peak values,				
4th		Different types of signal waveforms, Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources.				
Week 3	3rd	REVISION				
UNIT - 2			Overview of Analog Circuits:			
OCTOBER	Week 3	4th	UNIT - 2	Overview of Analog Circuits: Op Amp parameters		
		5th		Ideal Op Amp characteristics		
	Week 4	1st		Op Amp open loop configuration		
		3rd		Op Amp close loop configuration		
		4th		Op Amp Inverting mode amplifier		
	Week 5	5th		Op Amp Non-inverting mode amplifier		
		1st		Op Amp as an adder		
		4th		Op Amp as a differentiator, integrator		
		5th		INTERNAL ASSESSMENT 1		
	Week 3	1st		REVISION		
UNIT - 3			Overview of Digital Electronics			
Week 3	4th	UNIT - 3	Overview of Digital Electronics - Number system and conversions			
	5th		Boolean laws and theorem			
	1st		Logic gates			
	3rd		Flip flops and its types			
	4th		Use of flip flops as counter - asynchronous counters and synchronous counters			
Week 4	5th		Introduction to Integrated Circuits - Transistor Transistor Logic (TTL)			
	1st		REVISION			
UNIT - 4			Electric and Magnetic Circuits			
NOVEMBER	Week 5		3rd	UNIT - 4	Electric and Magnetic Circuits - EMF, Current, Potential Difference, Power and Energy	
			5th		M.M.F, magnetic force, permeability	
	Week 1	1st	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 2	5th	Equations of self and mutual inductance			
		1st	Analogy between electric and magnetic circuits			
		3rd	REVISION			
		UNIT - 5			A.C. Circuits	
	DECEMBER	Week 3	4th		UNIT - 5	A.C. Circuits: Cycle, Frequency, Periodic time, Amplitude, Angular velocity
1st			RMS value, Average value, Form Factor, Peak Factor			
Week 4		3rd	Impedance, phase angle, and power factor;			
		4th	Mathematical and phasor representation of alternating emf and current;			
		5th	Voltage and Current relationship in Star and Delta connections;			
Week 5		1st	A.C in resistors, inductors and capacitors;			
		3rd	A.C in R-L series, R-C series			
		4th	A.C in R-L-C series and parallel circuits;			
		5th	Power in A. C. Circuits, power triangle.			
Week 1		1st	REVISION			
UNIT - 6			Transformer and Machines			
Week 1	3rd	UNIT - 6	Transformer and Machines: General construction and principle of different type of transformers			
	4th		Emf equation and transformation ratio of transformers			
	5th		Auto transformers, Construction and Working principle of DC motors			
Week 2	1st	Basic equations and characteristic of motors.				