



GIET POLYTECHNIC

JAGATPUR, CUTTACK

LESSON PLAN

Discipline: Civil, Electrical & ETC. Engg.	Semester: 1 ST	Name Of The Teaching Faculty: SUDIPTA KUMAR DAS
Subject: Fundamentals of Electrical & Electronics Engg.(TH-4(a))	No. Of Days Per Week Class Allotted: 04P Lecture:04	Semester From Date: 06/08/2025 To Date: 04/12/2025 No.ofweeks:18
Week	Class Day	Theory Topic
1 st week		UNIT I- Overview of Electronic Components & Signals:
	1 st	Passive Active Components: Concept of Resistances, Capacitors and Inductors and their Applications.
	2 nd	Concept of Resistances, Capacitors and Inductors and their Applications.
	3 rd	Simple problems of Resistance, Capacitor & Inductor.
	4 th	Simple problems of Resistance, Capacitor & Inductor.
2 nd week	1 st	Definition, classification and Working of diode(PN junction, LED, Zener)
	2 nd	Definition, classification and Working of diode(PN junction, LED, Zener)
	3 rd	Definition, classification and Working of transistor
	4 th	Definition, classification and Working of transistor
3 rd week	1 st	Definition, classification and Working of FET
	2 nd	Definition, classification and Working of FET
	3 rd	Concept of MOS and CMOS and their Applications
	4 th	Concept of MOS and CMOS and their Applications
4 th week	1 st	DC/AC, Voltage/Current, Periodic/Non-periodic signals, average, rms, peak values. (Definitions)
	2 nd	Different types of signal waveforms, Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources. (Definitions)
	3 rd	Different types of signal waveforms, Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources. (Definitions)
		UNIT II- Overview of Analog Circuits:
	4 th	Operational Amplifiers-Ideal Op-Amp, Practical op amp

5 th week	1 st	Operational Amplifiers-Ideal Op-Amp, Practical op amp
	2 nd	Open loop and closed loop configurations
	3 rd	Open loop and closed loop configurations
	4 th	Application of Op-Amp as amplifier, adder, differentiator and integrator
	1 st	Application of Op-Amp as amplifier, adder, differentiator and integrator
6 th week		UNIT III -Overview of Digital Electronics:
	2 nd	Introduction to Boolean Algebra, Electronic Implementation of Boolean Operations, Gates-Functional Block Approach (Simple problems of Number system)
	3 rd	Introduction to Boolean Algebra, Electronic Implementation of Boolean Operations, Gates-Functional Block Approach (Simple problems of Number system)
	4 th	Storage elements-Flip Flops-A Functional block approach,
7 th week	1 st	Storage elements-Flip Flops-A Functional block approach,
	2 nd	Counters: Ripple, Up/down and decade, Introduction to digital IC Gates (of TTL Type).
	3 rd	Counters: Ripple, Up/down and decade, Introduction to digital IC Gates (of TTL Type).
	4 th	Counters: Ripple, Up/down and decade, Introduction to digital IC Gates (of TTL Type).
8 th week		Unit IV -Electric and Magnetic Circuit:
	1 st	EMF, Current, Potential Difference, Power and Energy
	2 nd	EMF, Current, Potential Difference, Power and Energy
	3 rd	M.M.F, magnetic force, permeability, hysteresis loop, reluctance, leakage factor and BH curve
		M.M.F, magnetic force, permeability, hysteresis loop, reluctance, leakage factor and BH curve
9 th week	1 st	M.M.F, magnetic force, permeability, hysteresis loop, reluctance, leakage factor and BH curve
	2 nd	Electromagnetic induction, Faraday's laws of electromagnetic induction, Lenz's law;
	3 rd	Electromagnetic induction, Faraday's laws of electromagnetic induction, Lenz's law;
	4 th	Dynamically induced emf; Statically induced emf
10 th week		Dynamically induced emf; Statically induced emf
	1 st	
	2 nd	Equations of self and mutual inductance; Analogy between electric and magnetic circuits.
	3 rd	Equations of self and mutual inductance; Analogy between electric and magnetic circuits
	4 th	Equations of self and mutual inductance; Analogy between electric and magnetic circuits

11 th week	1 st	Equations of self and mutual inductance; Analogy between electric and magnetic circuits
	2 nd	Unit V- A.C. Circuits:
		Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form Factor Peak Factor, impedance, phase angle, P.F
	3 rd	Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form Factor Peak Factor, impedance, phase angle, P.F
	4 th	Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form Factor Peak Factor, impedance, phase angle, P.F
12 th week	1 st	Cycle, Frequency, Periodic time, Amplitude, Angular velocity, RMS value, Average value, Form Factor Peak Factor, impedance, phase angle, P.F
	2 nd	Mathematical and phasor representation of alternating emf and current
	3 rd	Mathematical and phasor representation of alternating emf and current
	4 th	Voltage and Current relationship in Star and Delta connections; A.C in resistors, inductors and capacitors
13 th week	1 st	Voltage and Current relationship in Star and Delta connections; A.C in resistors, inductors and capacitors
	2 nd	Voltage and Current relationship in Star and Delta connections; A.C in resistors, inductors and capacitors
	3 rd	A.C in resistors, inductors and capacitors
	4 th	A.C in resistors, inductors and capacitors
14 th week	1 st	A.C in resistors, inductors and capacitors
		A.C in R-L series, R-Cseries, R-L-C series and parallel circuits
	2 nd	A.C in R-L series, R-Cseries, R-L-C series and parallel circuits
	3 rd	A.C in R-L series, R-Cseries, R-L-C series and parallel circuits
	4 th	Power in A. C. Circuits, power triangle.
15 th week	1 st	Power in A. C. Circuits, power triangle.
	2 nd	Power in A. C. Circuits, power triangle.
	3 rd	Unit VI- Transformer and Machine:
		General construction and principle of different type of transformers
	4 th	General construction and principle of different type of transformers
16 th week	1 st	General construction and principle of different type of transformers
	2 nd	Emf equation and transformation ratio of transformer
	3 rd	Emf equation and transformation ratio of transformer
	4 th	Auto transformers; Construction and Working principle of motors
17 th week	1 st	Auto transformers; Construction and Working principle of motors
	2 nd	Auto transformers; Construction and Working principle of motors
	3 rd	Basic equations and characteristic of motors
	4 th	Basic equations and characteristic of motors
18 th week	1 st	REVISION
	2 nd	REVISION
	3 rd	REVISION
	4 th	REVISION

SIGN OF FACULTY

SIGN OF SR. LECT.

SIGN OF PRINCIPAL

Principal
JNET (Polytechnic)
Jagatpur, Cuttack