



GOVERNMENT POLYTECHNIC, BALASORE

Government of Odisha.

ସରକାରୀ ବହୁବୃତ୍ତି ଅନୁଷ୍ଠାନ, ବାଲେଶ୍ଵର


LESSON PLAN (WINTER-2024)

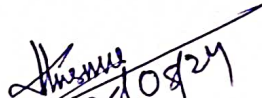
Week	Class Day	Theory / Practical Topics
Discipline: CIVIL ENGINEERING, COMPUTER ENGINEERING & IOT(SECTION – I & II)		
Semester: 1st		
Name of the Teaching Faculty: PRAKASH CHANDRA DAS(GF IN E&TC)		
Subject: Fundamentals of Electrical & Electronics Engineering(Course Code- TH 4(a))		
No of Days /per week class allotted: 4		
Semester From date:16TH August 2024		
No of Weeks:15		
Week	Class Day	Theory / Practical Topics
1st	1st	UNIT I Overview of Electronic Components & Signals: Passive Active Components: Resistances, Capacitors, Inductors,
	2nd	Diodes, Transistors,
	3rd	FET, MOS and CMOS and their Applications.
	4th	classification and Working of diode(PN junction,LED, Zener
2nd	1st	classification and Working of diode(PN junction,LED, Zener)
	2nd	classification and Working of diode(PN junction,LED, Zener), transistor, FET, Concept of MOS and CMOS)
	3rd	classification and Working of diode(PN junction,LED, Zener), transistor, FET, Concept of MOS and CMOS)
	4th	classification and Working of diode(PN junction,LED, Zener), transistor, FET, Concept of MOS and CMOS)
3rd	1st	Signals: DC/AC, voltage/current, periodic/non-periodic signals, average, rms
	2nd	peak values, different types of signal waveforms,
	3rd	Ideal/non-ideal voltage/current sources
	4th	independent/dependent voltage current sources. (Definitions)
4th	1st	UNIT II Overview of Analog Circuits: Operational Amplifiers-Ideal Op-Amp, Practical op amp
	2nd	Operational Amplifiers-Ideal Op-Amp, Practical op amp
	3rd	Operational Amplifiers-Ideal Op-Amp, Practical op amp
	4th	Open loop and closed loop configurations, Application of Op-Amp as amplifier,
5th	1st	Open loop and closed loop configurations, Application of Op-Amp as amplifier,
	2nd	Open loop and closed loop configurations, Application of Op-Amp as amplifier,
	3rd	adder, differentiator and integrator.
	4th	adder, differentiator and integrator.
6th	1st	adder, differentiator and integrator.
	2nd	UNIT III Overview of Digital Electronics: Introduction to Boolean Algebra,

7th	3rd	Electronic Implementation of Boolean Operations
	4th	Gates-Functional Block Approach (Simple problems of Number system)
	1st	Gates-Functional Block Approach (Simple problems of Number system)
	2nd	Storage elements-Flip Flops-A Functional block approach, Counters: Ripple, Up/down and decade
	3rd	Storage elements-Flip Flops-A Functional block approach, Counters: Ripple, Up/down and decade
8th	4th	Storage elements-Flip Flops-A Functional block approach, Counters: Ripple, Up/down and decade
	1st	Introduction to digital IC Gates (of TTL Type).
	2nd	Introduction to digital IC Gates (of TTL Type).
	3rd	Unit IV Electric and Magnetic Circuits: EMF, Current, Current, Potential Difference, Power and Energy; M.M.F, magnetic force,
9th	4th	permeability, hysteresis loop, reluctance,
	1st	leakage factor and BH curve; Electromagnetic induction
	2nd	Faraday's laws of electromagnetic induction
	3rd	Lenz's law; Dynamically induced emf; Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.
10th	4th	Lenz's law; Dynamically induced emf; Statically induced emf; Equations of self and mutual inductance; Analogy between electric and magnetic circuits.
	1st	Unit V A.C. Circuits: Cycle, Frequency, Periodic time, Amplitude,
	2nd	Angular velocity, RMS value, Average value, Form Factor Peak Factor,
	3rd	impedance, phase angle, and power factor;
11th	4th	Mathematical and phasor representation of alternating emf and current; Voltage and Current relationship in Star and Delta connections;
	1st	Mathematical and phasor representation of alternating emf and current; Voltage and Current relationship in Star and Delta connections;
	2nd	Mathematical and phasor representation of alternating emf and current; Voltage and Current relationship in Star and Delta connections;
	3rd	Mathematical and phasor representation of alternating emf and current; Voltage and Current relationship in Star and Delta connections;
12th	4th	Mathematical and phasor representation of alternating emf and current; Voltage and Current relationship in Star and Delta connections;
	1st	A.C in resistors, inductors and capacitors; A.C in R-L series, R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.
	2nd	A.C in resistors, inductors and capacitors; A.C in R-L series, R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.
	3rd	A.C in resistors, inductors and capacitors; A.C in R-L series, R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.
13th	4th	A.C in R-L series, R-C series, R-L-C series and parallel circuits; Power in A. C. Circuits, power triangle.
	1st	Unit VI Transformer and Machines: General construction and principle of different type of transformers;
	2nd	General construction and principle of different type of transformers;
	3rd	Emf equation and transformation ratio of transformers;
14th	4th	Emf equation and transformation ratio of transformers;
	1st	Emf equation and transformation ratio of transformers;
	2nd	Auto transformers;
	3rd	Construction and Working principle of motors;

ACADEMIC LESSION PLAN FOR SUMMER - 2025

15th	4th	Construction and Working principle of motors;
	1st	Construction and Working principle of motors;
	2nd	Basic equations and characteristic of motors.
	3rd	Basic equations and characteristic of motors.
	4th	Basic equations and characteristic of motors.


Faculty


Hod


Academic Co-ordinator


Principal