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DEPARTMENT OF ELECTRICAL ENGINEERING

Govt. Polytechnic, Balasore

LESSON PLAN FOR ACADEMIC SESSION - 2025-26

Fundamentals of Electrical & Electronics Engineering

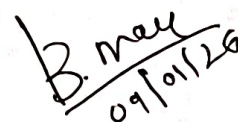
Course Code : Th.4(a)	Semester : Common to 1st & 2nd Sem
Total Periods : 60 Periods	Examination : 3 Hours
Theory Periods : 4 P/Week	Internal Assessment : 30 Marks
Tutorial : Nil	End Semester Examination : 70 Marks
Semester From Date : 09/01/2026.	To Date :
Name of Teaching Faculty: Er. Bikash Jena, Lecturer Stage-I (Electrical) & Prasanta Ray, Guest Faculty (Electrical)	

WEEK	PERIOD	TOPIC
1st	1 st	Unit I overview of electronic components & signals: Passive active components: resistances, capacitors, inductors
	2 nd	Passive Active Components: Resistances, Capacitors, Inductors
	3 rd	Diodes, Transistors, FET, MOS and CMOS and their Applications.
	4 th	Diodes, Transistors, FET, MOS and CMOS and their Applications.
2 nd	1 st	Diodes, transistors, fet, mos and cmos and their applications.
	2 nd	(Concept and simple problems of Resistance, Capacitor & Inductor
	3 rd	(Concept and simple problems of Resistance, Capacitor & Inductor
	4 th	Definition, classification and Working of diode(PN junction, LED, Zener)
3 rd	1 st	Definition, classification and working of diode(pn junction, led, zener)
	2 nd	Transistor, FET, Concept of MOS and CMOS)
	3 rd	Transistor, FET, Concept of MOS and CMOS)
	4 th	Signals: DC/AC, voltage/current, periodic/non-periodic signals
4 th	1 st	Signals: dc/ac, voltage/current, periodic/non-periodic signals
	2 nd	Average, rms, peak values, different types of signal waveforms
	3 rd	Average, rms, peak values, different types of signal waveforms
	4 th	Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources. (Definitions)
5 th	1 st	Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources. (definitions)
	2 nd	UNIT II Overview of Analog Circuits: Operational Amplifiers-Ideal Op-Amp, Practical op amp
	3 rd	Operational Amplifiers-Ideal Op-Amp, Practical op amp
	4 th	Open loop and closed loop configurations
6 th	1 st	Application of op-amp as amplifier, adder, differentiator and integrator
	2 nd	Application of Op-Amp as amplifier, adder, differentiator and integrator
	3 rd	Application of Op-Amp as amplifier, adder, differentiator and integrator
	4 th	UNIT III Overview of Digital Electronics: Introduction to Boolean Algebra
7 th	1 st	Electronic implementation of boolean operations
	2 nd	Gates-Functional Block Approach (Simple problems of Number system)
	3 rd	Gates-Functional Block Approach (Simple problems of Number system)
	4 th	Storage elements-Flip Flops-A Functional block approach

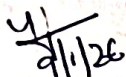
8 th	1 st	Counters: ripple, up/down and decade
	2 nd	Counters: Ripple, Up/down and decade
	3 rd	Introduction to digital IC Gates (of TTL Type).
	4 th	Introduction to digital IC Gates (of TTL Type).
9 th	1 st	Unit v a.c. circuits: Cycle, frequency, periodic time
	2 nd	Amplitude, Angular velocity, RMS value, Average value
	3 rd	Amplitude, Angular velocity, RMS value, Average value
	4 th	Form Factor Peak Factor, impedance, phase angle, and power factor
10 th	1 st	Form factor peak factor, impedance, phase angle, and power factor
	2 nd	Mathematical and phasor representation of alternating emf and current
	3 rd	Voltage and Current relationship in Star and Delta connections
	4 th	Voltage and Current relationship in Star and Delta connections
11 th	1 st	A.c in resistors, inductors and capacitors; a.c in r-l series
	2 nd	A.C In resistors, inductors and capacitors; A.C in R-L series
	3 rd	R-C series, R-L-C series and parallel circuits
	4 th	R-C series, R-L-C series and parallel circuits
12 th	1 st	Power in a. C. Circuits, power triangle
	2 nd	Power in A. C. Circuits, power triangle
	3 rd	Unit VI Transformer and Machines: General construction and principle of different type of transformers
	4 th	General construction and principle of different type of transformers
13 th	1 st	General construction and principle of different type of transformers
	2 nd	Emf equation and transformation ratio of transformers
	3 rd	Emf equation and transformation ratio of transformers
	4 th	Auto transformers
14 th	1 st	Auto transformers
	2 nd	Construction and Working principle of DC motors
	3 rd	Construction and Working principle of DC motors
	4 th	Construction and Working principle of DC motors
15 th	1 st	Basic equations and characteristic of motors.
	2 nd	Basic equations and characteristic of motors.
	3 rd	Basic equations and characteristic of motors.
	4 th	Basic equations and characteristic of motors.

 09/01/26.  9/01/26


Lect, Elect Dept.
Government Polytechnic, BLS
Teaching Faculty

 B. May
09/01/26

I/C HOD, Dept of EE
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 9/1/26

Academic Coordinator
Government Polytechnic,
Balasore


Principal
Government Polytechnic,
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