Email Id:-gpblselectricalengg@gmail.com

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 to1st & 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	1st	**Unit i overview of electronic components & signals:** Passive active components: resistances, capacitors, inductors
	2nd	Passive Active Components: Resistances, Capacitors, Inductors
	3rd	Diodes, Transistors, FET, MOS and CMOS and their Applications.
	4th	Diodes, Transistors, FET, MOS and CMOS and their Applications.
2nd	1st	Diodes, transistors, fet, mos and cmos and their applications.
	2nd	(Concept and simple problems of Resistance, Capacitor & Inductor
	3rd	(Concept and simple problems of Resistance, Capacitor & Inductor
	4th	Definition, classification and Working of diode(PN juction,LED, Zener)
3rd	1st	Definition, classification and working of diode(pn juction,led, zener)
	2nd	Transistor, FET, Concept of MOS and CMOS)
	3rd	Transistor, FET, Concept of MOS and CMOS)
	4th	Signals: DC/AC, voltage/current, periodic/non-periodic signals
4th	1st	Signals: dc/ac, voltage/current, periodic/non-periodic signals
	2nd	Average, rms, peak values, different types of signal waveforms
	3rd	Average, rms, peak values, different types of signal waveforms
	4th	Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources. (Definitions)
5th	1st	Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources. (definitions)
	2nd	**UNIT II Overview of Analog Circuits:** Operational Amplifiers-Ideal Op-Amp, Practical op amp
	3rd	Operational Amplifiers-Ideal Op-Amp, Practical op amp
	4th	Open loop and closed loop configurations
6th	1st	Application of op-amp as amplifier, adder, differentiator and integrator
	2nd	Application of Op-Amp as amplifier, adder, differentiator and integrator
	3rd	Application of Op-Amp as amplifier, adder, differentiator and integrator
	4th	**UNIT III Overview of Digital Electronics:** Introduction to Boolean Algebra
7th	1st	Electronic implementation of boolean operations
	2nd	Gates-Functional Block Approach (Simple problems of Number system)
	3rd	Gates-Functional Block Approach (Simple problems of Number system)
	4th	Storage elements-Flip Flops-A Functional block approach

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

09/01/26. 9/01/26

Lect, Elect Dept.
Government Polytechnic, BLS
Teaching Faculty

B. Mau 09/01/26

I/C HOD, Dept of EE
Government Polytechnic, BLS

9/1/26

Academic Coordinator
Government Polytechnic,
Balasore

Principal
Government Polytechnic,
Balasore