LESSON PLAN FOR SESSION: 2025-26

DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
E&TC ENGG.	2ND	MRS MANORAMA PADHY,LECT(E&TC)

SUBJECT: FUNDAMENTALS OF ELECTRICAL & ELECTRONICS ENGG (TH-4A)	NO. OF DAYS PER WEEK CLASS ALLOTED : 04	SEMESTER FROM 09/01/2026 TO 08/05/2026
		NO. OF WEEKS : 15 NOS.

WEEKS	CLASS DAYS	UNITS	THEORY TOPICS
1ST WEEK	1ST	UNIT I: Overview of Electronic Components & Signals	Basic Concept of Electronics and its application
	2ND		Basic Concept of voltage, current and power & Electronics components and their classification
	3RD		Explain about passive and active components
	4TH		Define passive components and basic concept of Resistor, Capacitor, Inductor and Transformer
2ND WEEK	1ST		Concept and simple problems of Resistance, Capacitor & Inductor
	2ND		Concept and simple problems of Resistance, Capacitor & Inductor
	3RD		Define Active components and explain some basic concept of Diodes, Transistors, FET, MOS and CMOS
	4TH		Definition, classification and Working of PN juction diode,LED, Zener diode
3RD WEEK	1ST		Definition, classification and Working of transistor,FET
	2ND		Define Signals. Explain basic concept of alternating current and direct current
	3RD		Classification of signals. And definitions of different types of signals. And explain it.
	4TH		Define waveforms and explain the different types of signal waveforms
4TH WEEK	1ST		Definition of average, rms, peak values, amplitude, frequency, time period, wave length of different types of signal waveforms
	2ND		Definition of Ideal/non-ideal voltage/current sources, independent/dependent voltage current sources.
	3RD	UNIT II: Overview of Analog Circuits	Introduction to Operational Amplifiers. Pin configuration of OPAMP
	4TH		Basic concept of Ideal OPAMP & Practical OPAMP
5TH WEEK	1ST		Explain Open loop and closed loop configuration of OPAMP
	2ND		Aplication of OPAMP as ADDER, AMPLIFIER
	3RD		Application of OPAMP as differentiator and integrator
	4TH	UNIT III: Overview of Digital Electronics	Introduction to Boolean Algebra
6TH WEEK	1ST		Electronic implementation of Boolean operation
	2ND		Introduction to Number system and Simple problems og Number system
	3RD		Introduction to Logic gates and explain the Gates-Functional Block Approach
	4TH		Explain the combinational and sequential circuit
7TH WEEK	1ST		Introduction to storage element such as Flip Flop, Counter, Register
	2ND		Explain Functional Block Approach of Flip Flop
	3RD		Introduction to the Functional Block Approach of Ripple counter
	4TH		Introduction to the Functional Block Approach of Up/Down counter
8TH WEEK	1ST		Introduction to the Functional Block Approach of Decade counter
	2ND		Introduction to digital IC gates(of TTL Type)
	3RD		Introduction to Basic Principles of Electricity
	4TH		Introduction to Generation,transmission & Distribution
9TH	1ST		Definations of EMF, Current, Potential Difference, Power and Energy
	2ND		Defination of Resistances, Capacitance, Inductance & ohms law

9TH WEEK	3RD	Unit IV: Electric and Magnetic Circuits	Series and Parallel connection of Resistances, Capacitance, Inductance with Numericals
	4TH		Introduction to Magnetic Circuit & Defination of M.M.F, magnetic force, permeability & susceptibility.
10TH WEEK	1ST		Defination of reluctance, leakage factor and BH curve
	2ND		Description of Hysteresis loop
	3RD		Electromagnetic induction & Faraday's laws of electromagnetic induction
	4TH		Lenz's law; Dynamically induced emf; Statically induced emf
11TH WEEK	1ST		Equations of self and mutual inductance
	2ND		Analogy between electric and magnetic circuits
	3RD	Unit V: A.C. Circuits	Basic terminology : Cycle, Frequency, Periodic time, Amplitude, Angular velocity
	4TH		RMS value, Average value, Form Factor Peak Factor
12TH WEEK	1ST		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		A.C in resistors, inductors circuit
13TH WEEK	1ST		A.C in Capacitive Circuit, A.C in R-L series Circuit
	2ND		R-C series, R-L-C series Circuit
	3RD		A.C in R-L parallel
	4TH		A.C in R-C Parallel, R-L-C Parallel Circuit.
14TH WEEK	1ST		Power in A. C. Circuits, power triangle
	2ND	Unit VI: Transformer and Machines	General construction and principle of Transformer
	3RD		Classification of transformer with construction and pinciple
	4TH		Emf equation transformers
15TH WEEK	1ST		Transformation ratio of transformers
	2ND		Auto transformers
	3RD		Construction and Working principle of DC motors
	4TH		Basic equations and characteristic of motors

Madhu
09/01/2026
(Guest Faculty)
E&TC