LESSON PLAN FOR BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

[Th4a&b]

Discipline : Electrical Engineering		**Semester:** 1st	**Name of the Teaching Faculty: MS. Deepika Sarkar**
Subject: BASIC ELECTRICAL AND ELECTRONICS ENGINEERING(**Th4AB**)		**No. of days/ per week class allotted:** 4	**Semester From Date : 16.08.23 to Date: 11.12.23** **No. of Weeks:** 15 No. of class : 60
Week	**Date Range**	**Class Day**	**Theory Topics**
			Basic Electrical:- 1. FUNDAMENTALS :
1st	16.08.23 to 19.08.23	1st	Introduction to the syllabus and the course
		2nd	1.1 Concept of current flow.
		3rd	1.2 Concept of source and load.
2nd	21.08.23 to 26.08.23	1st	1.3 State Ohm's law and concept of resistance. Simple problems on ohms law
		2nd	1.4 Relation of V, I & R in series circuit.
		3rd	1.5 Relation of V, I & R in parallel circuit.
		4th	1.6 Division of current in parallel circuit. Simple problems on series and parallel circuit
3rd	28.08.23 to 02.09.23	1st	1.7 Effect of power in series & parallel circuit.
		2nd	1.8 Kirchhoff's law 1.9 Simple problems on Kirchhoff's law.
		3rd	**Basic Electrical:-2. A.C. THEORY :-** 2.1 Generation of alternating emf.
		4th	2.2 Difference between D.C. & A.C.
4th	14.11.22 to 19.11.22	1st	2.3 Define Amplitude, instantaneous value, cycle, Time period, frequency, phase angle,phase difference.
		2nd	2.4 State & Explain RMS value, Average value, Amplitude factor & Form factor with Simple problems.
		3rd	2.5 Represent AC values in phasor diagrams.
		4th	2.6 AC through pure resistance, inductance & capacitance

5th	04.09.23 to 09.09.23	1st	2.7 AC though RL, RC, RLC series circuits
		2nd	2.8 Simple problems on RL, RC & RLC series circuits
		3rd	2.9 Concept of Power and Power factor 2.10 Impedance triangle and power triangle.
		4th	Unit test
			Basic Electronics:-1. ELECTRONIC DEVICES:-
6th	11.09.23 to 16.09.23	1st	1.1 Basic Concept of Electronics and its application. 1.2 Basic Concept of Electron Emission & its types
		2nd	1.3 Classification of material according to electrical conductivity (Conductor, Semiconductor & Insulator) with respect to energy band diagram only.
		3rd	1.4 Difference between Intrinsic & Extrinsic Semiconductor
		4th	1.5 Difference between vacuum tube & semiconductor
7th	18.09.23 to 23.09.23	1st	1.6 Principle of working and use of PN junction diode, Zener diode and Light Emitting Diode (LED)
		2nd	1.7 Integrated circuits (I.C) & its advantages.
		3rd	**Basic Electronics:- 2. ELECTRONIC CIRCUITS :-** 2.1 Rectifier & its uses. 2.2 Principles of working of different types of Rectifiers with their merits and demerits
		4th	2.3 Functions of filters and classification of simple Filter circuit (Capacitor, choke input and π)
8th	25.09.23 to 30.09.23	1st	2.4 Working of D.C power supply system (unregulated) with help of block diagrams only
		2nd	2.5 Transistor, Different types of Transistor Configuration and state output and input current gain relationship in CE,CB and CC configuration(No mathematical derivation)
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		4th	2.6 Need of biasing and explain different types of biasing with circuit diagram.(only CE configuration) 2.7 Amplifiers(concept) , working principles of single phase CE amplifier
9th	02.10.23 to 07.10.23	1st	2.8 Electronic Oscillator and its classification
		2nd	2.9 Working of Basic Oscillator with different elements through simple Block Diagram
			Basic Electrical :- 3. GENERATION OF ELECTRICAL POWER:-
		3rd	3.1 Give elementary idea on generation of electricity from , hydro with block diagram
		4th	3.1 Give elementary idea on generation of electricity from thermal , with block diagram.
		1st	3.1 Give elementary idea on generation of electricity from nuclear

10th	09.10.23 to 14.10.23	2nd	**Basic Electrical: 4. CONVERSION OF ELECTRICAL ENERGY:-** 4.1 Introduction of DC machines. 4.2 Main parts of DC machines
		3rd	4.3 Classification of DC generator 4.4 Classification of DC motor
		4th	4.5 Uses of different types of DC generators & motors. 4.6 Types and uses of single phase induction motors.
11th	30.10.23 to 04.11.23	1st	4.7 Concept of Lumen. 4.8 Different types of Lamps (Filament, Fluorescent, LED bulb) its Construction and Principle
		2nd	4.9 Star rating of home appliances (Terminology, Energy efficiency, Star rating Concept)
			Basic Electrical:-5. WIRING AND POWER BILLING:-
		3rd	5.1 Types of wiring for domestic installations.
		4th	5.2 Layout of household electrical wiring (single line diagram showing all the important component in the system).
12th	06.11.23 to 11.11.23	1st	5.3 List out the basic protective devices used in house hold wiring.
		2nd	5.4 Calculate energy consumed in a small electrical installation.
			Basic Electronics:- 3. COMMUNICATION SYSTEM
		3rd	3.1 Basic communication system (concept & explanation with help of Block diagram)
		4th	3.2 Concept of Modulation and Demodulation, Difference between them.
13th	20.11.23 to 25.11.23	1st	3.3 Different types of Modulation (AM, FM & PM) based on signal, carrier wave and modulated wave (only concept, No mathematical Derivation)
			Basic Electrical :-6. MEASURING INSTRUMENTS:-
		2nd	6.1 Introduction to measuring instruments. 6.2 Torques in instruments
		3rd	6.3 Different uses of PMMC type of instruments (Ammeter & Voltmeter).
		4th	6.4 Different uses of MI type of instruments (Ammeter & Voltmeter).
14th	27.11.23 to 02.12.23	1st	6.5 Draw the connection diagram of A.C/ D.C Ammeter, voltmeter, energy meter and wattmeter. (Single phase only)
			Basic Electronics:- 4.TRANSDUCERS AND MEASURING INSTRUMENTS
		2nd	4.1 Concept of Transducer and sensor with their differences 4.2 Different type of Transducers & concept of active and passive transducer.
		3rd	4.3 Working principle of photo emissive, photoconductive, photovoltaic

			Transducer and its application.
		4th	4.4 Multimeter and its applications 4.5 Analog and Digital Multimeter and their differences
15th	04.12.23 to 09.12.23	1st	4.6 Working principle of Multimeter with Basic Block diagram.
		2nd	4.7 CRO, working principle of CRO with simple Block diagram.
		3rd	Doubt clearing class
		4th	Last Unit test
	11.12.23	1st	Doubt clearing class

Signature of faculty

Signature of HOD(Math & Science)

Signature of Academic coordinator