Lesson Plan

Name of the faculty: Sh. Aakash Suran & Mohit Kadyan

Discipline: Mechanical

Semester: 3rd Mechanical A & B

Subject: Basics of Electrical and Electronics Engineering

Lesson Plan Duration: 15 weeks

Work Load (Lecture/ Practical) per week (in hours): Lecture- 02

Week	**Theory**			
	Lecture day	**Topic (including assignment / test)**		
1st	1st	Definition of voltage, current, power and energy with their units, name of instruments used for measuring above quantities, connection of these instruments in an electric circuit.		
	2nd	Difference between ac and dc. Various applications of electricity.		
2nd	1st	Electromagnetic induction-Faraday's Laws, Lenz's Law; Fleming's rules, Principles of a.c. Circuits		
	2nd	Alternating emf, Definition of cycle, frequency, amplitude and time period. Concept of electrical power, Concept of phase and phase difference.		
3rd	1st	Concept of resistance, inductance and capacitance in simple a.c. circuit. Concept of three phase system; star and delta connections; voltage and current relationship		
	2nd	Revision		
4th	1st	Working principle and construction of single phase transformer, transformer ratio, emf equation, tapping of transformer		
	2nd	power transformer, auto transformer and distribution transformer (brief idea and difference between them), cooling of transformer, applications of various types of transformers.		
5th	1st	sessional		
	2nd	sessional		
6th	1st	Difference between high and low voltage distribution system, identification of three-phase wires, neutral wire and earth wire in a low voltage distribution system.		
	2nd	Identification of voltages between phases and between one phase and neutral.		

		Difference between three-phase and single-phase supply		
7th	1st	Description and applications of single-phase and three-phase motors. Introduction to DC motor and its applications,		
	2nd	Difference between ac and dc motor, Connection and starting of three-phase induction motors by DOL and star-delta starter.		
8th	1st	Changing direction of rotation of a given 3 phase induction motor. Motors used for driving pump, compressor and e vehicles.		
	2nd	Revision		
9th	1st	Revision		
	2nd	Distinction between light-fan circuit and single phase power circuit, sub-circuits, various accessories and parts of domestic electrical installation.		
10th	1st	Different types of wires and their IS specification, Identification of wiring systems. Colour coding of electrical wires.		
	2nd	Second sessional		
11th	1st	Second sessional		
	2nd	Electrical shock and precautions against shock, treatment of electric shock, concept of fuses and their classification,		
12th	1st	concept of earthing and various types of earthing, brief description of range of protective devices like MCB, ELCB, and RCB		
	2nd	Concept of semi conductor, types- P and N type. Diodes and their applications, Transistor – PNP and NPN. Their characteristics and uses.		
13th	1st	Introduction to integrated circuit (IC), Different types of ICs used in electric drives and their control circuit.		
	2nd	Revision		
14th	1st	3rd sessional		
	2nd	3rd sessional		
15th	1st	Revision(Remedial Classes)		