Lesson plan		
Name of Faculty		Sh. Surender Kumar
Discipline		Electrical Engineering
Semester		6th sem.
Subject		Electrical Energy Conservation and Management
Lesson Plan Duration		15 week(From March 2023 to June 2023) Theory: 05
Week	**Theory**	
	Lecture Day	**Topic (Including Assignment/ Test)**
1st	Day1	**1 Lighting System**
	Day2	1.1. Basic definitions- Lux, lumen and illumination space to height ratio
	Day3	1.2Types of different lamps and their features
	Day4	1.3 Energy efficient practices in lighting
	Day5	1.4.Tips for energy saving in building - New Building, Existing Building
2nd	Day1	1.5Laws of Illumination
	Day2	1.6 Calculation of illumination at different points, Main requirements for proper lighting
	Day3	1.7Macro level approach at design stage
	Day4	Revision/ Assignment
	Day5	**2 Energy Conservation and EC Act 2001**
3rd	Day1	Introduction to energy management, energy conservation, energy efficiency and its need
	Day2	Salient features of Energy Conservation Act 2001 &
	Day3	The Energy Conservation (Amendment) Act, 2010 and its importance
	Day4	Standards and Labeling - Concept of star rating and its importance, Types of product available for star rating
	Day5	Revision/ Assignment
4th	Day1	Class Test
	Day2	**3 Energy Audit**
	Day3	Types and methodology
	Day4	Energy auditing reporting format
	Day5	Energy audit instruments
5th	Day1	Revision/ Assignment
	Day2	4 **Electrical Supply System and Motors**
	Day3	Types of electrical supply system
	Day4	Single line diagram
	Day5	Transformer loading
6th	Day1	Tips for energy savings in transformers
	Day2	Motor Loading
	Day3	Variation in efficiency and power factor with loading
	Day4	Tips for energy savings in motors
	Day5	Need for energy efficient motors
7th	Day1	Initial cost versus like cycle cost
	Day2	Cost analysis on life cycle basis
	Day3	Various constructional features of EEMs
	Day4	EEM as compared to standard motors
	Day5	Revision/ Assignment
8th	Day1	**5 Energy Efficiency in Electrical Utilities**
	Day2	Understanding Electricity Bill , Tariff structure
	Day3	Components of power (kW, kVA and kVAR) and power factor
	Day4	Concept of sanctioned load, maximum demand, contract demand and monthly minimum charges (MMC)

	Day5	**5.2 Pumps;** Introduction to pump and its application, Efficient pumping system operation,
9th	Day1	Energy efficiency in agriculture pumps, Tips for energy saving in pumps,
	Day2	**5.3 Compressed Air System** Types of air compressor and its applications,
	Day3	Leakage test, Energy saving opportunities in compressors
	Day4	**5.4 Energy Conservation in HVAC and Refrigeration System;** Introduction
	Day5	Concept of Energy Efficiency Ratio (EER)
10th	Day1	Energy saving opportunities in Heating, Ventilation and
	Day2	Air-conditioning (HVAC) and Refrigeration Systems
	Day3	**5.5 Thermal Basics**: Types of fuels, Thermal energy
	Day4	Energy contents in fuel, Energy Units and
	Day5	its conversion in terms of metric ton of oil equivalent (MTOE)
11th	Day1	Revision/ Assignment
	Day2	Class Test
	Day3	**6 General Energy Saving Tips;** Lighting System, Room Air Conditioners
	Day4	Refrigerators, Water Heater, Computers,
	Day5	Fans, Heaters
12th	Day1	Blowers and Washing Machines
	Day2	Water Pumps
	Day3	Kitchens, Transport
	Day4	Revision/ Assignment
	Day5	**Class Test**
13th	Day1	**7 Energy Conservation Building Code**
	Day2	Haryana ECBC and its salient features including thermal behavior of buildings
	Day3	ECBC Guidelines on Building Envelope
	Day4	ECBC Prescriptive Requirements for Building Envelope
	Day5	ECBC Guidelines on Heating, Ventilation and Air Conditioning
14th	Day1	ECBC Guidelines on Service Hot Water and Pumping
	Day2	ECBC Guidelines on Lighting
	Day3	ECBC Guidelines on Electrical Power
	Day4	ECBC Guidelines on Star Labelling and Minimum Star rating
	Day5	Revision/ Assignment
15th	Day1	**Class Test**
	Day2	Revision/Review/Test of old HSBTE Papers
	Day3	Revision/Review/Test of old HSBTE Papers
	Day4	Revision/Review/Test of old HSBTE Papers
	Day5	Revision/Review/Test of old HSBTE Papers