

Subject Renewable Energy System (Code) TH-4 Name of faculty Smruti Rekha Mohanty
 Semester 6th Class allotted 4P/week Branch Electrical Engg

Lesson Plan

Discipline	Semester	From date:	To date:	Teaching Aid
Subject:	No. of days/ per week <u>4P/week</u>	Theory/ Practical - Topics/Lesson		
Week	Date/Period			
1	10/03/22 +0	Introduction of Renewable energy. Environmental consequences of fossil fuel use. Importance of renewable sources of energy. Sustainable Design & development.		
	12/03/22			
2	14/03/22 +0	Type of RE sources. Limitations of RE sources. Present		
	19/03/22	India and International Energy scenarios of conventional and RE sources.		
3	21/03/22 +0	Solar photovoltaic system operating principle. Photo		
	26/03/22	voltage cell concepts. Cell module. array, series and parallel connections. Max Power		
4	28/03/22 +0	Classification of energy sources		
	02/04/22	Extra-terrestrial and terrestrial radiation. Azimuth angle. Zenith angle. Hour angle. Irradiance, solar constant		
5	4/04/22 +0	Solar collectors. Types and performance characteristics.		
	09/04/22	Applications:- Photovoltaic battery chargers, domestic lighting, street lighting.		
6	11/04/22 +0	Applications - water Pumping		
	16/04/22	Solar Cooker, Solar Pond. Introduction to wind energy conversion. Types of wind turbine		
7	18/4/22 +0	Aerodynamics of wind		
	23/4/22	rotor. Wind turbine control system, conversion to electrical power. Introduction and synchronous generators.		

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Week	Date/Period	Theory Practical - Topics/Lesson	Teaching Aid
8	25/04/22 to 30/4/22	constant voltage and constant frequency generation with power electronics control.	
9	02/5/22 to 07/5/22	single and double output systems. Characteristics of wind power plant.	
10	9/5/22 to 14/05/22	Energy from Biomass. Biomass as Renewable energy source. Types of Biomass fuels. Combustion and fermentation.	
11	17/5/22 to 21/05/22	Anaerobic digestion. Types of biogas digester. Wood gasifiers. Pyrolysis.	
12	23/5/22 to 28/5/22	Applications. Biogas. Biogas. Tidal Energy - Energy from the tidal Barrage and Non Barrage Tidal Power.	
13	31/05/22 to 4/06/22	Ocean Thermal Energy Conversion. Geothermal energy - classification. Hybrid Energy Systems.	
14	6/06/22 to 10/06/22	Need for hybrid systems. Diesel - PV. Wind - PV. Microhydro - PV. Electrical and hybrid electric vehicles.	
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