

Lesson Plan

Subject:-RE(Code) TH-4B

Name of faculty: -Bikram Keshari Parida

Semester: -6th Summer 2025 Class allotted:- 4p/w Branch :- Electrical Engg.

Discipline	Semester: -6th	From date:-04/02/25 To date:17/05/25	Teaching Aid
Subject:	No. of days/ per week 4p/w	Theory/ Practical –Topics/Lesson	
Week	Date/Period		

1	04/02/25 to 08/02/25	1. Introduction to Renewable energy: 1.1 Environmental consequences of fossil fuel use. 1.2 Importance of renewable sources of energy. 1.3 Sustainable Design and development. 1.4 Types of RE sources. 1.5 Limitations of RE sources. 1.6 Present Indian and international energy scenario of conventional and RE sources	White board & marker
2	10/02/25 to 15/02/25	2. Solar Energy: 2.1 Solar photo voltaic system-Operating principle 2.2 Photo voltaic cell concepts 2.2.1 Cell, module, array, Series and parallel connections. Maximum power point tracking (MPPT). 2.3 Classification of energy Sources.	White board & marker
3	17/02/25 to 22/02/25	2.4 Extra-terrestrial and terrestrial Radiation. 2.5 Azimuth angle, Zenith angle, Hour angle, Irradiance, Solar constant. 2.6 Solar collectors, Types and performance characteristics,	White board & marker
4	24/02/25 to 01/03/25	2.7 Applications: Photovoltaic - battery charger, domestic lighting, street lighting, water pumping, solar cooker, Solar Pond.	White board & marker
5	03/03/25 to 08/03/25	3.Wind Energy: 3.1 Introduction to Wind energy. 3.2 Wind energy conversion. 3.3 Types of wind turbines	White board & marker
6	10/03/25 to 13/03/25	3.4 Aerodynamics of wind rotors. 3.5 Wind turbine control systems; conversion to electrical power: 3.6 Induction and synchronous generators. 3.7 Grid connected and self excited induction generator operation	White board & marker
7	17/03/25 to 21/03/25	3.8 Constant voltage and constant frequency generation with power electronic control. 3.9 Single and double output systems. 3.10 Characteristics of wind power plant	White board & marker
8	24/03/25 to 29/03/25	4.Biomass Power: 4.1 Energy from Biomass. 4.2 Biomass as Renewable Energy Source 4.3 Types of Biomass Fuels-Solid, Liquid and Gas.	White board & marker

	02/04/25 to 05/04/25	4.4 Combustion and fermentation. 4.5 Anaerobic digestion. 4.6 Types of biogas digester.	White board & marker
10	07/04/25 to 12/04/25	4.7 Woodgassifier. 4.8 Pyrolysis. 4.9 Applications: Biogas, Biodiesel	White board & marker
11	15/04/25 to 19/04/25	5. Other Energy Sources 5.1 Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems. 5.2 Ocean Thermal Energy Conversion (OTEC).	White board & marker
12	21/04/25 to 26/04/25	5.3 Geothermal Energy-Classification. 5.4 Hybrid Energy Systems. 5.5 Need for Hybrid Systems	White board & marker & smart board
13	28/04/25 to 03/05/25	5.6 Diesel-PV, Wind-PV, Microhydel-PV. 5.7 Electric and hybrid electric vehicles	White board & marker
14	05/05/25 to 10/05/25	Revision	White board & marker
15	13/05/25 to 17/05/25	Revision	White board & marker & smart board

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Signature of faculty

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Signature of HOD