UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING, ROURKELA

LESSON PLAN

SESSION: 2025-2026

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

SUBJECT CODE: Th.4i
NAME OF THE SUBJECT: Renewable energy sources
BRANCH: ELECTRONICS & TELECOMMUNICATION ENGG.
SEMESTER: DIPLOMA 6TH sem
NUMBER OF CLASSES ALLOTTED PER WEEK: 4
NAME OF FACULTY-DEEPAK RANJAN PATNAIK/TAPAN KUMAR DAS

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DISCIPLINE	SEMESTER	NAME OF THE TEACHER
E&TC ENGG.	**6th**	DEEPAK RANJAN PATNAIK, TAPAN KUMAR DAS SR.LECTURER IN E&TC ENGG./Lecturer stage-II
SUBJECT: RENEWABLE ENERGY SOURCES	**NO OF DAYS/ WEEK CLASS ALLOTTED**: 04	SEMESTER FROM- 22.12.2025 TO 13.04.2026 NO OF WEEKS: - 17

WEEK NO.	CLASS DAY	THEORY TOPICS
1st	22-12-2025	**Energy Situation and Renewable Energy Sources**- Renewable and Non-renewable Energy Sources
2nd	29-12-2025	Energy and Environment Origin of Renewable Energy Sources
	02-01-2026	Potential of Renewable Energy Sources
	03-01-2026	Direct-use Technology
3rd	05-01-2026	**Solar Radiation & Collectors**- Solar Radiation Through Atmosphere
	09-01-2026	Terrestrial Solar Radiation Measurement of Solar Radiation Classification of Solar Radiation Instruments
4th	12-01-2026	Flat Plate Collectors Optical Characteristics
	16-01-2026	**Low-Temperature Applications of Solar Energy-** Swimming Pool Heating
	17-01-2026	Solar water Heating Systems
5th	19-01-2026	Solar Drying
6th	30-01-2026	Solar Pond
	31-01-2026	**Passive Space Conditioning & Collectors-** Principle Space conditioning
7th	02-02-2026	Passive building concepts- Heating, Direct gain, Indirect Gain, Passive Cooling, Shading,Paints, Collings
	06-02-2026	Construction of Concentrator
	07-02-2026	Energy losses
8th	09-02-2026	**Solar Thermal Power Plants-**
	13-02-2026	Solar Collection System
9th	16-02-2026	Capacity Factor and Solar Multiple
	20-02-2026	Energy Conversion

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	21-02-2026	**Solar Photovoltaics**-
10th	23-02-2026	Solar Cell Characteristics
	27-02-2026	Equivalent Circuit Diagram of Solar Cells. Cell Types - Crystalline Silicon Solar Cell , Solar Cells for Concentrating Photovoltaic Systems , Dye –sensitized Solar Cell (DSC)
11th	02-03-2026	Solar Module
	06-03-2026	Further System Components -Solar inverters ,Mounting
	07-03-2026	Grid-independent Systems -System Configuration. Grid-connected Systems -Small Roof Top Systems, Medium-
12th	09-03-2026	**Wind Energy -**
	13-03-2026	Wind Energy Wind Flow and Wind Direction
13th	16-03-2026	Hot wire Anemometer
	20-03-2026	Cup Anemometer (Robinson's Anemometer) Wind Direction Indicators
14th	23-03-2026	**Wind Energy Converters**- Historical Development
15th	30-03-2026	Aerodynamic of Rotor Blade -Wind Stream Profile -Buoyancy Coefficient
	04-04-2026	Components of a Wind Power Plant -Wind Turbine -Tower -Electric Generators – Foundation. Power Control -Slow Rotors; Poor Control Mechanism -Control of Fast Rotors.
16th	06-04-2026	**Energy economics**-
	10-04-2026	savings. calculations for Solar thermal system
17th	13-04-2026	Solar PV system, Wind system, Biomass system

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