

**BHUBANANANDA ORISSA SCHOOL OF
ENGINEERING, CUTTACK
ELECTRICAL ENGG.DEPARTMENT**

LESSON PLAN

SEMESTER : 6th (C)

SESSION – SUMMER (2021-22)

SUBJECT: RENEWABLE ENERGY SYSTEMS

NAME OF FACULTY: PRIYANKA SAHU

Discipline: Electrical Engg.	Semester: 6 th (C)	Name of the teaching faculty: Mrs. Priyanka Sahu
Subject-RENEWABLE ENERGY SYSTEMS	No. of Days/per week class allotted: 05 PERIODS /WEEK (MON, WED, THU-1 period each FRI- 2 periods)	Semester: From Date: 10/03/2022 To Date: 10/06/2022 No. of weeks: 14 WEEKS
Week	Class Day	Theory/Practical Topics
1 st (10/03/2022-12/03/2022)	10/03/2022	1. Introduction to Renewable energy: 1.1. Environmental consequences of fossil fuel use.
	11/03/2022	1.2. Importance of renewable sources of energy.
	11/03/2022	1.3. Sustainable Design and development.
2 nd (14/03/2022-19/03/2022)	14/03/2022	1.4. Types of RE sources.
	16/03/2022	1.5. Limitations of RE sources. 1.6. Present Indian and international energy scenario of conventional and RE sources
	17/03/2022	2. Solar energy: 2.1. Solar photovoltaic system-Operating principle
	18/03/2022	Dola Purnima
	18/03/2022	
3 rd (21/03/2022-26/03/2022)	21/03/2022	2.1. Solar photovoltaic system-Operating principle
	23/03/2022	2.2. Photovoltaic cell concepts

	24/03/2022	2.2.1. Cell, module, array, Series and parallel connections.
	25/03/2022	Maximum power point tracking (MPPT).
4 th (28/03/2022-02/04/2022)	25/03/2022	Maximum power point tracking (MPPT).
	28/03/2022	2.3. Classification of energy Sources.
	30/03/2022	2.4. Extra-terrestrial and terrestrial Radiation.
	31/03/2022	2.5. Azimuth angle, Zenith angle, Hour angle, Irradiance, Solar constant.
	01/04/2022	Utkal Dibas
	01/04/2022	
5 th (04/04/2022-09/04/2022)	04/04/2022	Class Test 1
	06/04/2022	2.6. Solar collectors, Types and performance characteristics.
	07/04/2022	2.6. Solar collectors, Types and performance characteristics.
	08/04/2022	2.6. Solar collectors, Types and performance characteristics.
	08/04/2022	2.6. Solar collectors, Types and performance characteristics.
	08/04/2022	2.7. Applications: Photovoltaic - battery charger, domestic lighting, street lighting, water pumping, solar cooker, Solar Pond.
6 th (11/04/2022-16/04/2022)	11/04/2022	2.7. Applications: Photovoltaic - battery charger, domestic lighting, street lighting, water pumping, solar cooker, Solar Pond.
	13/04/2022	3. Wind Energy: 3.1. Introduction to Wind energy.
	14/04/2022	Ambedkar Jayanti
	15/04/2022	Good Friday
	15/04/2022	

7 th (18/04/2022-23/04/2022)	18/04/2022	3.2. Wind energy conversion.
	20/04/2022	3.3. Types of wind turbines
	21/04/2022	3.3. Types of wind turbines
8 th (25/04/2022-30/04/2022)	22/04/2022	3.4. Aerodynamics of wind rotors.
	22/04/2022	3.5. Wind turbine control systems; conversion to electrical power:
	25/04/2022	3.6. Induction and synchronous generators.
	27/04/2022	Class Test 2
	28/04/2022	3.7. Grid connected and self excited induction generator operation.
	29/04/2022	3.8. Constant voltage and constant frequency generation with power electronic control.
9 th (02/05/2022-07/05/2022)	29/04/2022	3.9. Single and double output systems.
	02/05/2022	3.9. Single and double output systems.
	04/05/2022	3.10. Characteristics of wind power plant.
	05/05/2022	4. Biomass Power:
	06/05/2022	4.1. Energy from Biomass.
10 th (09/05/2022-14/05/2022)	06/05/2022	4.2. Biomass as Renewable Energy Source
	06/05/2022	4.3. Types of Biomass Fuels - Solid, Liquid and Gas.
	09/05/2022	4.4. Combustion and fermentation.
	11/05/2022	Internal Assessment
	12/05/2022	Internal Assessment
	13/05/2022	4.5. Anaerobic digestion.

	13/05/2022	4.6. Types of biogas digester.
11 th (16/05/2022-21/05/2022)	16/05/2022	Buddha Purnima
	18/05/2022	4.6. Types of biogas digester.
	19/05/2022	4.7. Wood gasifier.
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	20/05/2022	4.8. Pyrolysis
12 th (23/05/2022-28/05/2022)	23/05/2022	4.9. Applications: Bio gas, Bio diesel
	25/05/2022	5. Other Energy Sources: 5.1. Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems.
	26/05/2022	5.1. Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems.
	27/05/2022	5.2. Ocean Thermal Energy Conversion (OTEC)
	27/05/2022	5.3. Geothermal Energy – Classification.
13 th (30/05/2022-04/06/2022)	30/05/2022	Sabitri Amabasya
	01/06/2022	5.3. Geothermal Energy – Classification.
	02/06/2022	5.4. Hybrid Energy Systems.
	03/06/2022	5.5. Need for Hybrid Systems.
	03/06/2022	5.6. Diesel-PV, Wind-PV, Microhydel-PV.
14 th (06/06/2022-10/06/2022)	06/06/2022	Class Test 3
	08/06/2022	5.6. Diesel-PV, Wind-PV, Microhydel-PV.
	09/06/2022	5.7. Electric and hybrid electric vehicles.
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	10/06/2022	Revision and Discussions