

**BHUBANANANDA ORISSA SCHOOL OF
ENGINEERING, CUTTACK**

ELECTRICAL ENGG.DEPARTMENT

LESSON PLAN

SEMESTER : 6th (C)

SESSION – SUMMER (2022-23)

SUBJECT: RENEWABLE ENERGY SYSTEMS

NAME OF FACULTY: PRIYANKA SAHU

Discipline: Electrical Engg.	Semester: 6th (C)	Name of the teaching faculty: Mrs. Priyanka Sahu
Subject- RENEWABLE ENERGY SYSTEMS	No. of Days/per week class allotted: 05PERIODS /WEEK (TUE-2 periods, THU-1 period, FRI- 2 periods)	Semester: From Date: 14/02/2023 To Date: 23/05/2023 No. of weeks: 15 WEEKS
Week	Class Day	Theory/Practical Topics
1 st (14/02/2023-18/02/2023)	14/02/2023	1. Introduction to Renewable energy: 1.1. Environmental consequences of fossil fuel use.
	14/02/2023	1.2. Importance of renewable sources of energy.
	16/02/2023	1.3. Sustainable Design and development.
	17/02/2023	1.4. Types of RE sources.
	17/02/2023	1.5. Limitations of RE sources. 1.6. Present Indian and international energy scenario of conventional and RE sources
2 nd (20/02/2023-25/02/2023)	21/02/2023	1.4. Types of RE sources.
	21/02/2023	2. Solar energy: 2.1.Solar photovoltaic system-Operating principle
	23/02/2023	2.2. Photovoltaic cell concepts
	24/02/2023	2.2.1. Cell, module, array, Series and parallel connections.
	24/02/2023	2.2.1 Maximum power point tracking (MPPT).
3 rd (27/02/2023-04/03/2023)	28/02/2023	2.2.1 Maximum power point tracking (MPPT).
	28/02/2023	2.3. Classification of energy Sources.
	02/03/2023	2.4. Extra-terrestrial and terrestrial Radiation.

	03/03/2023	2.5. Azimuth angle, Zenith angle, Hour angle, Irradiance, Solar constant.
	03/03/2023	2.6. Solar collectors, Types and performance characteristics,
4 th (06/03/2023-11/03/2023)	07/03/2023	DOLA PURNIMA....
	07/03/2023	
	09/03/2023	2.6. Solar collectors, Types and performance characteristics,
	10/03/2023	2.6. Solar collectors, Types and performance characteristics,
	10/03/2023	CLASS TEST 1
5 TH (13/03/2023-18/03/2023)	14/03/2023	2.7. Applications: Photovoltaic - battery charger, domestic lighting, street lighting, water pumping, solar cooker, Solar Pond.
	14/03/2023	2.7. Applications: Photovoltaic - battery charger, domestic lighting, street lighting, water pumping, solar cooker, Solar Pond.
	16/03/2023	3. Wind Energy: 3.1. Introduction to Wind energy.
	17/03/2023	3.2. Wind energy conversion.
	17/03/2023	3.3. Types of wind turbines
6 TH (20/03/2023-25/03/2023)	21/03/2023	3.3. Types of wind turbines
	21/03/2023	3.4. Aerodynamics of wind rotors.
	22/03/2023	3.5. Wind turbine control systems; conversion to electrical power
	23/03/2023	3.5. Wind turbine control systems; conversion to electrical power
	23/03/2023	3.6. Induction and synchronous generators.
7 th (27/03/2023-01/04/2023)	28/03/2023	3.7. Grid connected and self excited induction generator operation.
	28/03/2023	3.8. Constant voltage and constant frequency generation with power electronic control.
	30/03/2023	Ram Navami....

	31/03/2023	3.9. Single and double output systems.
	31/03/2023	3.9. Single and double output systems.
8 th (03/04/2023-08/04/2023)	04/04/2023	3.10. Characteristics of wind power plant.
	04/04/2023	4. Biomass Power: 4.1. Energy from Biomass. 4.2. Biomass as Renewable Energy Source
	06/04/2023	4.3. Types of Biomass Fuels - Solid, Liquid and Gas.
	07/04/2023	Good Friday....
	07/04/2023	
9 th (10/04/2023-15/04/2023)	11/04/2023	4.4. Combustion and fermentation.
	11/04/2023	4.5. Anaerobic digestion.
	13/04/2023	CLASS TEST 2
	14/04/2023	Dr. B.R Ambedkar Jayanti....
	14/04/2023	
10 th (17/04/2023-22/04/2023)	18/04/2023	4.6. Types of biogas digester.
	18/04/2023	4.6. Types of biogas digester.
	20/04/2023	4.7. Wood gasifier.
	21/04/2023	4.7. Wood gasifier.
	21/04/2023	4.8. Pyrolysis
11 th (24/04/2023-29/04/2023)	25/04/2023	4.9. Applications: Bio gas, Bio diesel
	25/04/2023	4.9. Applications: Bio gas, Bio diesel
	27/04/2023	INTERNAL ASSESSMENT
	28/04/2023	5. Other Energy Sources: 5.1. Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems.
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12th (01/05/2023-06/05/2023)	02/05/2023	5.2. Ocean Thermal Energy Conversion (OTEC)
	02/05/2023	5.3. Geothermal Energy – Classification.
	04/05/2023	5.3. Geothermal Energy – Classification.
	05/05/2023	Buddha Purnima....
	05/05/2023	
13th (08/05/2023-13/05/2023)	09/05/2023	5.4. Hybrid Energy Systems.
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	11/05/2023	QUIZ TEST
	12/05/2023	5.5. Need for Hybrid Systems.
	12/05/2023	5.6. Diesel-PV, Wind-PV, Microhydel-PV.
14th (15/05/2023-20/05/2023)	16/05/2023	5.6 Diesel-PV, Wind-PV, Microhydel-PV.
	16/05/2023	5.7. Electric and hybrid electric vehicles.
	18/05/2023	5.7. Electric and hybrid electric vehicles.
	19/05/2023	Sabitri Amabasya....
	19/05/2023	
15th (15/05/2023-20/05/2023)	23/05/2023	Revision and Discussions
	23/05/2023	Revision and Discussions