

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2023-2024

Discipline: Electrical Engg. Semester: 6th

Subject: Renewable Energy

Name of the Teaching Faculty: Bimal Kumar Gaudra

Subject: Renewable Energy No. of Days/per week class allotted : 5

Semester From Date : 16-01-2024 To Date : 26-04-2024

No. of Weeks : 15

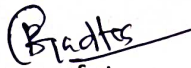
Week	Class Day	Theory /Practical Topics
1-	1.	Introduction to Renewable Energy Environmental Consequence of fossil fuel use.
		Importance of Renewable source of Energy
	2.	Sustainable Design and Development
	3.	Type of Renewable Energy Sources.
		Limitation of Renewable Energy Sources
	4.	Present Indian and International energy Scenario of Conventional and RE Sources
	5.	Tutorial Class
2.	6	Solar Energy Solar photovoltaic system - Operating Principle
	7.	Solar photovoltaic operating Principle
	8.	Photovoltaic cell Concept, cell and module
	9.	Array, Series and parallel connection, max ^m Power point Tracking (MPPT)
	10.	Tutorial Class


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Week	Class Day	Theory /Practical Topics
	23.	Water Pumping
	24.	Solar Cooker & Solar pad.
	25.	Tutorial Class
6	26	Wind Energy :- Introduction to wind energy, Wind Energy Conversion.
	27.	Type of Wind Turbine
	28.	Type of Wind Turbine
	29.	Aerodynamics of Wind Rotor.
	30.	Tutorial class
7.	31.	Induction and Synchronous Generator
	32.	Induction and Synchronous Generator.
	33.	Grid connected & self excited Induction Generator operation.
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Week	Class Day	Theory /Practical Topics
	35.	Tutorial class
8.	36	Constant voltage & Constant frequency Generation with power electronics control
	37	Constant voltage & constant frequency Generation with power electronics control.
	38.	Constant voltage & Constant frequency Generation with power electronics control.
	39.	Single and Double output system
	40.	Tutorial class
9	41.	Single & Double output system.
	42.	Characteristics of wind Power plant.
	43.	Characteristics of wind Power plant.
	44.	Characteristic of wind Power plant
	45.	Tutorial class
10.	46.	Biomass power :- Energy from Biomass


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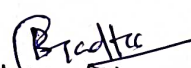
Week	Class Day	Theory /Practical Topics
	47.	Biomass as Renewable Energy Source.
	48.	Biomass as Renewable Energy Source.
	49.	Type of Biomass fuel - Solid, Liquid & Gas.
	50.	Tutorial Class
11	51.	Type of Biomass fuel :- Solid, liquid & Gas
	52.	Type of Biomass fuel :- Solid, liquid & Gas.
	53.	Combustion & Fermentation
	54.	Anaerobic Digestion
	55.	Tutorial Class
12.	56.	Type of Biogas Digester.
	57.	Wood gasifier
	58.	Pyrolysis


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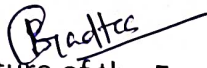
Week	Class Day	Theory /Practical Topics
	59.	Application of Biogas , Bio Diesel.
	60.	Tutorial class
13.	61	Application of Biogas , Bio Diesel
	62	Other Energy sources , Tidal energy , Energy from tides , Barrage & Non Barrage tidal Power system.
	63	Barrage & Non Barrage tidal Power system.
	64.	Ocean thermal energy Conversion (OTEC)
	65.	Tutorial class
14	66.	Ocean Thermal Energy Conversion (OTEC)
	67.	Geothermal Energy & Classification
	68.	Geothermal energy
	69.	Geothermal energy
	70.	Tutorial class


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Week	Class Day	Theory /Practical Topics
15.	71	Need of Hybrid system.
	72.	Diesel-PV, wind-PV, Microhydel-PV Energy Conversion system.
	73.	Diesel-PV, wind-PV, Microhydel-PV Energy Conversion system.
	74.	Electric and Hybrid-electric Vehicle
	75.	Tutorial Class


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