

Discipline : ETC	Semester:- 6th	Name of the Teaching Faculty: - Lincoln Mohanty
Subject:- Renewable energy sources (Th. 4(1))	No of Days/per Week Class Allotted :- 04	Semester From:- 14.02.2023 To:- 23.05.2023
Week	Class Day	Theory
1 st	1 st	Energy Situation and Renewable Energy Sources, Renewable and Non-renewable Energy Sources
	2 nd	Energy and Environment
	3 rd	Origin of Renewable Energy Sources
	4 th	Potential of Renewable Energy Sources
2 nd	1 st	Direct-use Technology
	2 nd	Solar Radiation & Collectors, Solar Radiation Through Atmosphere
	3 rd	Terrestrial Solar Radiation
	4 th	Measurement of Solar Radiation
3 rd	1 st	Classification of Solar Radiation Instruments
	2 nd	Flat Plate Collectors
	3 rd	Optical Characteristics
	4 th	Low-Temperature Applications of Solar Energy
4 th	1 st	Swimming Pool Heating
	2 nd	Solar water Heating Systems
	3 rd	Natural Convection water Heating Systems
	4 th	Solar Drying
5 th	1 st	Solar Pond
	2 nd	Passive Space Conditioning & Collectors
	3 rd	Principle Space conditioning
	4 th	Passive building concepts- Heating, Direct gain
6 th	1 st	Indirect Gain, Passive Cooling,
	2 nd	Shading, Paints, Collings
	3 rd	Construction of Concentrator
	4 th	Energy losses
7 th	1 st	Solar Thermal Power Plants
	2 nd	Introduction
	3 rd	Solar Collection System
	4 th	
8 th	1 st	Thermal Storage for Solar Power Plants
	2 nd	
	3 rd	Capacity Factor and Solar Multiple
	4 th	Energy Conversion
	1 st	Solar Photovoltaic, Band Theory of Solids, Physical Processes in a

9 th		Solar Cell , Solar Cell Characteristics
	2 nd	Equivalent Circuit Diagram of Solar Cells,
	3 rd	Cell Types- Crystalline Silicon Solar Cell , Solar Cells for Concentrating
	4 th	Photovoltaic Systems , Dye –sensitized Solar Cell (DSC)
10 th	1 st	Solar Module ,Further System Components -Solar inverters ,
	2 nd	Mounting Systems,Storage Batteries ,Other System Components
	3 rd	Grid-independent Systems -System Configuration ,Grid-connected Systems
	4 th	Small Roof Top Systems ,Medium-scale PV Generator,Centralized System
11 th	1 st	Wind Energy ,Wind Flow and Wind Direction
	2 nd	Wind Measurements
	3 rd	Measurement of Pressure Head ,Hot wire Anemometer
	4 th	Cup Anemometer (Robinson's Anemometer)
12 th	1 st	Wind Direction Indicators
	2 nd	Wind Energy Converters
	3 rd	Historical Development
	4 th	Aerodynamic of Rotor Blade -Wind Stream Profile
13 th	1 st	Buoyancy Coefficient and the Drag Coefficient
	2 nd	Components of a Wind Power Plant -Wind Turbine
	3 rd	Tower -Electric Generators –Foundation
	4 th	Power Control -Slow Rotors; Poor Control Mechanism -Control of Fast Rotors
14 th	1 st	
	2 nd	Energy economics
	3 rd	Present worth, Life cycle costing (LCC), Annual Life cycle costing(ALCC),
	4 th	Annual savings. calculations for Solar thermal system
15 th	1 st	Solar PV system,
	2 nd	Wind system,
	3 rd	
	4 th	Biomass system

Teaching Faculty

HOD, ETC

