

Lesson Plan

Discipline: Electronics and Telecommunication Engineering	Semester: 4th	Name of the Teaching Faculty: Er. Priyambika Sahoo
Subject- Th.4(i)- RENEWABLE ENERGY SOURCES	No. Of Days/Weekclass allotted: 04	Semester From date: 13.02.2023 To date: 23.05.2023 (No ofweeks: 15)
Weeks/Months	Class Day	Topic
1 st	1st	1. Energy Situation and Renewable Energy Sources
	2nd	1. Energy Situation and Renewable Energy Sources
	3rd	1.2 Energy and Environment
	4th	1.2 Energy and Environment
2 nd	1st	1.3 Origin of Renewable Energy Sources
	2nd	1.3 Origin of Renewable Energy Sources
	3rd	1.4 Potential of Renewable Energy Sources
	4th	1.4 Potential of Renewable Energy Sources
3 rd	1st	1.4 Potential of Renewable Energy Sources
	2nd	1.5 Direct-use Technology
	3rd	1.5 Direct-use Technology
		2. Solar Radiation & Collectors
	4th	2. Solar Radiation & Collectors
4 th	1st	2.3 Measurement of Solar Radiation
	2nd	2.3 Measurement of Solar Radiation
	3rd	2.4 Classification of Solar Radiation Instruments
	4th	2.4 Classification of Solar Radiation Instruments
5 th	1st	2.4 Classification of Solar Radiation Instruments
	2nd	2.5 Flat Plate Collectors
	3rd	2.6 Optical Characteristics
	4th	3. Low-Temperature Applications of Solar Energy.
	4th	3. Low-Temperature Applications of Solar Energy.
6 th	1st	3.2 Solar water Heating Systems
	2nd	3.2 Solar water Heating Systems
	3rd	3.3 Natural Convection water Heating Systems
	4th	3.3 Natural Convection water Heating Systems
	4th	3.4 Solar Drying
7 th	1st	3.4 Solar Drying
	2nd	3.5 Solar Pond
	3rd	3.5 Solar Pond
	4th	4. Passive Space Conditioning & Collectors
8 th	1st	4. Passive Space Conditioning & Collectors
	2nd	4.2 Passive building concepts- Heating, Direct gain, Indirect Gain, Passive
	3rd	4.2 Passive building concepts- Heating, Direct gain, Indirect Gain, Passive
	4th	4.3 Construction of Concentrator
9 th	1st	4.4 Energy losses
	2nd	5. Solar Thermal Power Plants
	3rd	5.2 Solar Collection System
	4th	5.3 Thermal Storage for Solar Power Plants
	5th	5.4 Capacity Factor and Solar Multiple
	1st	5.4 Capacity Factor and Solar Multiple

10 th	2nd	6. Solar Photovoltaics
	3rd	6. Solar Photovoltaics
	4th	6.2 Solar Cell Characteristics
	5th	6.3 Equivalent Circuit Diagram of Solar Cells
11 th	1st	6.3 Equivalent Circuit Diagram of Solar Cells
	2nd	6.4 Cell Types - Crystalline Silicon Solar Cell , Solar Cells for Concentrating
	3rd	6.4 Cell Types - Crystalline Silicon Solar Cell , Solar Cells for Concentrating
	4th	6.5 Solar Module
	5th	6.6 Further System Components -Solar inverters ,Mounting Systems,Storage
12 th	1st	6.6 Further System Components -Solar inverters ,Mounting Systems,Storage
	2nd	6.7 Grid-independent Systems -System Configuration
	3rd	6.7 Grid-independent Systems -System Configuration
	4th	6.8 Grid-connected Systems -Small Roof Top Systems ,Medium-scale PV
13 th	1st	6.8 Grid-connected Systems -Small Roof Top Systems ,Medium-scale PV
	2nd	7. Wind Energy
	3rd	7.2 Wind Measurements
	4th	7.3 Measurement of Pressure Head
14 th	1st	7.4 Hot wire Anemometer
	2nd	7.5 Cup Anemometer (Robinson's Anemometer)
	3th	7.6 Wind Direction Indicators
	4th	8. Wind Energy Converters
15 th	1st	8.2 Aerodynamic of Rotor Blade -Wind Stream Profile -Buoyancy Coefficient and
	2nd	8.3 Components of a Wind Power Plant -Wind Turbine -Tower –Electric Generators – Foundation
	3rd	8.4 Power Control -Slow Rotors; Poor Control Mechanism -Control of Fast Rotor
	4th	9. Energy economics: Present worth, Life cycle costing (LCC), Annual Life cycle costing (ALCC), Annual savings. Calculations for Solar thermal system, Solar PV, Wind and Biomass Systems.