Bhubanananda Orissa School of Engineering
Lesson Plan

Discipline:E&TC	Semester:6th	Name of the Teaching Faculty : Jyoti Prakash Behura
Subject: **RENEWABLE ENERGY SOURCES**	No of Days/per week class allotted:4	Semester from14.02 2023 to23.05.2023 No of weeks:15
Week No.	Class Day **MON,TUE,THU,FRI**	Theory Topics
1st	14-02-2023	Introduction of the Subject and Syllabus discussion.
	16-02-2023	**Energy Situation and Renewable Energy Sources** 1.1 Renewable and Non-renewable Energy Sources
	17-02-2023	1.2 Energy and Environment
2nd	20-02-2023	1.3 Origin of Renewable Energy Sources
	21-02-2023	**Solar Radiation & Collectors** 2.1 Solar Radiation Through Atmosphere
	23-02-2023	2.2 Terrestrial Solar Radiation
	24-02-2023	2.3 Measurement of Solar Radiation
3rd	27-02-2023	2.4 Classification of Solar Radiation Instruments
	28-02-2023	2.5 Flat Plate Collectors
	02-03-2023	2.6 Optical Characteristics
	03-03-2023	**Low-Temperature Applications of Solar Energy.** 3.1 Swimming Pool Heating 3.2 Solar water Heating Systems
4th	06-03-2023	3.2 Natural Convection water Heating Systems
	09-03-2023	3.3 Solar Drying 3.4 Solar Pond
	10-03-2023	**Revision**
5th	13-03-2023	**Passive Space Conditioning & Collectors** 4.1 Principle Space conditioning
	14-03-2023	4.2 Passive building concepts- Heating, Direct gain, Indirect Gain
	16-03-2023	Passive Cooling, Shading, Paints, Coolings

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	17-03-2023	4.3 Construction of Concentrator
6th	20-03-2023	4.4 Energy losses
	21-03-2023	**Solar Thermal Power Plants** 5.1 Introduction
	23-03-2023	5.2 Solar Collection System
	24-03-2023	5.3 Thermal Storage for Solar Power Plants
7th	27-03-2023	5.4 Capacity Factor and Solar Multiple
	28-03-2023	5.5 Energy Conversion
	31-03-2023	**Class Test -I**
8th	03-04-2023	**Solar Photovoltaic** 6.1 Band Theory of Solids, Physical Processes in a Solar Cell.
	04-04-2023	6.2 Solar Cell Characteristics
	06-04-2023	6.3 Equivalent Circuit Diagram of Solar Cells
9th	10-04-2023	6.4 Cell Types - Crystalline Silicon Solar Cell
	11-04-2023	Solar Cells for Concentrating Photovoltaic Systems
	13-04-2023	Dye –sensitized Solar Cell (DSC)
10th	17-04-2023	6.5 Solar Module
	18-04-2023	6.6 Further System Components -Solar inverters ,Mounting Systems, Storage Batteries ,Other System Components
	20-04-2023	6.7 Grid-independent Systems -System Configuration
	21-04-2023	6.8 Grid-connected Systems -Small Roof Top Systems
11th	24-04-2023	Medium-scale PV Generator, Centralized System.
	25-04-2023	**Revision**
	27-04-2023	**INTERNAL-I**
	28-04-2023	**Wind Energy** 7.1 Wind Flow and Wind Direction

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12th	01-05-2023	7.2 Wind Measurements
	02-05-2023	7.3 Measurement of Pressure Head 7.4 Hot wire Anemometer
	04-05-2023	7.5 Cup Anemometer (Robinson's Anemometer)
		7.6 Wind Direction Indicators
13th	08-05-2023	**Wind Energy Converters** 8.1 Historical Development
	09-05-2023	8.2 Aerodynamic of Rotor Blade -Wind Stream Profile -Buoyancy Coefficient and the Drag Coefficient
	11-05-2023	8.3 Components of a Wind Power Plant -Wind Turbine -Tower -Electric Generators –Foundation
	12-05-2023	8.4 Power Control -Slow Rotors; Poor Control Mechanism -Control of Fast Rotors
14th	15-05-2023	**ENERGY ECONOMICS** 9.1 Present worth, Life cycle costing (LCC), Annual Life cycle costing (ALCC) Annual savings. calculations for Solar thermal system 9.2 Solar PV system,
	16-05-2023	9.3 Wind system, 9.4 Biomass system,
	18-05-2023	**CLASS TEST-II**
15th	22-05-2023	**INTERNAL-I**
	23-05-2023	Important Questions Discussion

Jyoti Prakash Behera
13/02/2023
Signature of Faculty

13/02/2023
HOD,E&TC
Sr. Lecturer
Electronics & Telecomm. Engg.
BOSE, Cuttack

13/02
Principal