LESSON PLAN

DEPT. OF ELECT. ENGG GOVT. POLY. BHADRAK ESTD-2017

SUB: RENEWABLE ENERGY POWER PLANTS

BRANCH:- ELECTRICAL ENGG.

SEMESTER: 3rd

SESSION:2025-2026

NAME OF FACULTY: NIBEDITA HO

GOVERNMENT POLYTECHNIC, BHADRAK

Hod Electrical 11-07-25

HOD (ELECT.)
G.P.BHADRAK

Academic Co-ordinator 11.7.25

Academic Co-ordinator

Principal
Govt. Polytechnic, Bhadrak 11.07.25

Principal
Govt.Polytechnic
Bhadrak

Discipline: Electrical Engg.	Semester: 3rd	Name of the Teaching Faculty : Nibedita Ho
Subject:Renewable Energy Power Plants	No. of Days/per week class allotted:3	Semester from date: 14.07.2025 To Date: 15.11.2025 No. of Weeks:15
Week	**Class Day**	**Theory**
1st	1st	**Solar PV and Concentrated SolarPower Plants** Solar Map of India: Global solar power radiation
	2nd	Solar PV Concentrated SolarPower(CSP)plants
	3rd	constructionandworkingof: PowerTower,ParabolicTrough
2nd	1st	Construction and working of Parabolic Dish
	2nd	Construction and working of Fresnel Reflectors
	3rd	Solar Photovoltaic(PV)power plant components
3rd	1st	SolarPhotovoltaic(PV)power plant layout
	2nd	SolarPhotovoltaic(PV)power plant construction
	3rd	SolarPhotovoltaic(PV)power plant construction
4th	1st	SolarPhotovoltaic(PV)powerplant working.
	2nd	Roof top solar PV power system
	3rd	Roof top solar PV power system
5th	1st	**Large Wind Power Plants** Wind Map of India:Wind power density in watts persquaremeter
	2nd	Lift and drag principle; long path theory.
	3rd	Geared type windpower plants: components,layout and working.
6th	1st	Direct drive type wind power plants: components,layout and working

	2nd	Constant Speed ElectricGenerators: Squirrel Cage Induction Generators(SCIG),
	3rd	Wound Rotor Induction Generator (WRIG)
7th	1st	Variable Speed Electric Generators
	2nd	Doubly-fed induction generator(DFIG)
	3rd	Wound rotor synchronous generator(WRSG)
8th	1st	Wound rotor synchronous generator(WRSG)
	2nd	Permanent magnet synchronous generator(PMSG).
	3rd	Permanent magnet synchronous generator(PMSG).
9th	1st	**Small WindTurbines** Horizonaxissmallwindturbine
	2nd	Direct drive type,components and working
	3rd	Horizontal axis small wind turbine
10th	1st	Geared type,components and working
	2nd	Vertical axis small wind turbine
	3rd	direct drive and geared, components and Working
11th	1st	WorkingTypes of towers and installation of small wind urbines on roof tops and open fields.
	2nd	WorkingTypes of towers and installation of small wind urbines on roof tops and open fields.
	3rd	Electricgenerators used in small wind powerplants
	1st	**Biomass-basedPowerPlants** Properties of solid fuel for biomass power plants

12th	2nd	bagasse,woodchips,rice husk, municipal waste
	3rd	Properties of liquid and gaseous fuel for biomass power plants : Jatropha
13th	1st	bio- diesel gobar gas
	2nd	LayoutofaBio-chemicalbased(e.g.biogas)power plant:
	3rd	Lay out of a Bio-chemical based(e.g.biogas)power plant:
14th	1st	Lay out of aThermo-chemical based(e.g.Municipalwaste) power plant
	2nd	Lay out of aThermo-chemical based(e.g.Municipalwaste) power plant
	3rd	Lay out of a Thermo-chemical based(e.g.Municipalwaste) power plant
15th	1st	Lay out of a Agro Agro-chemical based(e.g.bio-diesel) power plant
	2nd	Lay out of a Agro Agro-chemical based(e.g.bio-diesel) power plant
	3rd	Lay out of Agro-chemical based(e.g.bio-diesel) power plant

Signature of the faculty

Lect.in Elect.Engg.
Govt.Poly.Bhadrak