

**PNS SCHOOL OF ENGINEERING AND TECHNOLOGY**  
**DEPARTMENT OF ELECTRICAL ENGINEERING**

Branch: Electrical Engg.	Semester: 3RD	Name of the Lecturer: J Pratul Kumar Nanda
Subject: REP	Class allotted in a week: 4	Duration of Semester: 14.07.2025 to Date : 15.11.2025
week	Class Day	Theory/ Practical Topic:
1st	1	Solar PV & Concentrated Solar Power Plants: Solar Map of India - Global solar power radiation, Solar PV
	2	Concentrated Solar Power (CSP) plants - Construction and working of Power Tower
	3	Construction and working of Power Tower
	4	Construction & working of Parabolic Trough.
2nd	1	Construction & working of Parabolic Trough.
	2	Construction & working of Parabolic Dish.
	3	Construction & working of Parabolic Dish.
	4	Construction & working of Fresnel Reflectors.
3rd	1	Construction & working of Fresnel Reflectors.
	2	Solar Photovoltaic (PV) power plant: components layout
	3	construction & working.
	4	Roof top solar PV power system.
4th	1	Large Wind Power Plants: Wind map of India - Wind power density in watts per square meter Lift and drag principle
	2	Long path theory
	3	Geared type wind power plants: components, layout and working.
	4	Geared type wind power plants: components, layout and working.
5th	1	Direct drive type wind power plants: components, layout and working.
	2	Direct drive type wind power plants: components, layout and working.
	3	Constant Speed Electric Generators: Squirrel Cage Induction Generators(SCIG)
	4	Wound Rotor Induction Generator (WRIG).
6th	1	Variable Speed Electric generators: Types and application
	2	Doubly-fed induction generator (DFIG)
	3	Wound rotor synchronous generator(WRSG)
	4	Permanent magnet synchronous generator (PMSG).
7th	1	Small Wind Turbines: Horizon axis small wind turbine
	2	Horizon axis small wind turbine: direct drive type, components and working.
	3	Horizontal axis small wind turbine: geared type, components and working.
	4	Vertical axis small wind turbine: direct drive components and Working

8th	1	Vertical axis small wind turbine: geared type components and Working
	2	Types of towers& their installations.
	3	Installation of small wind turbines on rooftops.
	4	Installation of small wind turbines on openfields.
9th	1	Electric generators used in small wind power plants
	2	Biomass-based Power Plants : Properties of solid fuel for biomass power lants: bagases
	3	Properties of solid fuel for biomass power plants: wood chips
	4	Properties of solid fuel for biomass power plants: rice husk.
10th	1	Properties of solid fuel for biomass power plants: municipal waste.
	2	Properties of solid fuel for biomass power plants: municipal waste.
	3	Properties of liquid and gaseous fuel for bio mass power plants: Jatropa
	4	Properties of liquid and gaseous fuel for bio mass power plants: bio - diesel
11th	1	Properties of liquid and gaseous fuel for bio mass power plants: gobar gas
	2	Layout of a Bio-chemical based (e.g. biogas) power plant
	3	Layout of a Thermo-chemical based (e.g. Municipal waste) power plant
	4	Layout of a Agro-chemical based (e.g.bio-diesel) power plant.



Signature of Lecturer



Signature of HOD



Signature of Principal