



Email Id:-gpbselectricalengg@gmail.com

DEPARTMENT OF ELECTRICAL ENGINEERING

Govt. Polytechnic, Balasore

LESSON PLAN FOR ACADEMIC SESSION - 2026-27 RENEWABLE ENERGY POWER PLANTS

Course Code : EEPC209 (Th.5)	Semester : 3rd
Total Periods : 45 Hours	Examination : 3 Hours
Theory Periods : 3 P/Week	Progressive Assessment: 30 Marks
Maximum Marks : 100	End Semester Examination : 70 Marks
Semester From Date : 01/07/2026	To Date : 05/11/2026 (approx.)
Name of the Teaching Faculty: Er. Bikash Jena, Lect Stage-I (ELECT)	

WEEK	PERIOD	TOPIC
1st	1 st	Solar PV and Concentrated Solar Power Plants Solar Map of India: Global solar power radiation
	2 nd	Solar Map of India: Global solar power radiation
	3 rd	Solar Map of India: Solar PV
2nd	1 st	2 Concentrated Solar Power (CSP) plants, construction and working of: Power Tower
	2 nd	Construction and working of: Parabolic Trough
	3 rd	Construction and working of: Parabolic Dish
3 rd	1 st	Construction and working of: Fresnel Reflectors
	2 nd	Solar Photovoltaic (PV) power plant: components layout, construction, working
	3 rd	Solar Photovoltaic (PV) power plant: components layout, construction, working
4 th	1 st	Solar Photovoltaic (PV) power plant: components layout, construction, working
	2 nd	Roof top solar PV power system
	3 rd	Roof top solar PV power system
5 th	1 st	Large Wind Power Plants Wind map of india: wind power density in watts per square meter lift
	2 nd	Wind Map of India: Wind power density in watts per square meter Lift
	3 rd	Drag principle; long path theory
6 th	1 st	Geared type wind power plants: components, layout and working
	2 nd	Geared type wind power plants: components, layout and working
	3 rd	Direct drive type wind power plants: components, layout and working
7 th	1 st	Direct drive type wind power plants: components, layout and working
	2 nd	Constant speed electric generators: squirrel cage induction generators(scig)

	3 rd	Wound rotor induction generator (wrig)
8 th	1 st	Variable Speed Electric Generators: Doubly-fed induction generator (DFIG)
	2 nd	Wound rotor synchronous generator (WRSG)
	3 rd	Permanent magnet synchronous generator (PMSG)
9 th	1 st	Small Wind Turbines Horizon axis small wind turbine: direct drive type, components and working
	2 nd	Horizon axis small wind turbine: direct drive type, components and working
	3 rd	Horizontal axis small wind turbine: geared type, components and working
10 th	1 st	Horizontal axis small wind turbine: geared type, components and working
	2 nd	Vertical axis small wind turbine: direct drive and geared
	3 rd	Components and Working Types of towers and installation of small wind turbines on rooftops and open fields
11 th	1 st	Components and Working Types of towers and installation of small wind turbines on rooftops and open fields
	2 nd	Electric generators used in small wind power plants
	3 rd	Electric generators used in small wind power plants
12 th	1 st	Biomass-Based Power Plants Properties of solid fuel for biomass power plants: bagasse, wood chips, rice husk, municipal waste
	2 nd	Properties of solid fuel for biomass power plants: bagasse, wood chips, rice husk, municipal waste
	3 rd	Properties of solid fuel for biomass power plants: bagasse, wood chips, rice husk, municipal waste
13 th	1 st	Properties of liquid and gaseous fuel for bio mass power plants: Jatropha, bio- diesel gobar gas
	2 nd	Properties of liquid and gaseous fuel for bio mass power plants: Jatropha, bio- diesel gobar gas
	3 rd	Properties of liquid and gaseous fuel for bio mass power plants: Jatropha, bio- diesel gobar gas
14 th	1 st	Layout of a Bio-chemical based (e.g. Biogas) power plant
	2 nd	Layout of a Bio-chemical based (e.g. Biogas) power plant
	3 rd	Layout of a Thermo-chemical based (e.g. Municipal waste) power plant
15 th	1 st	Layout of a Thermo-chemical based (e.g. Municipal waste) power plant
	2 nd	Layout of a Agro-chemical based (e.g.bio-diesel) power plant
	3 rd	Layout of a Agro-chemical based (e.g.bio-diesel) power plant

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01/07/26
Lect. Stage-I, Elect Dept.
Government Polytechnic, BLS
Teaching Faculty

[Signature]
01/07/26
I/C HOD, Dept of EE
Government Polytechnic, BLS

[Signature]
01/07/26
Academic Coordinator
Government Polytechnic,
Balasore

[Signature]
Principal
Government Polytechnic,
Balasore