

GOVERNMENT POLYTECHNIC JAJPUR**LESSON PLAN****SUBJECT- TH:5- RENEWABLE ENERGY POWER PLANTS****SEMESTER-3RD****SESSION-WINTER 2026 (DT-01/07/2026)**

Week	Class	Unit	Topic / Sub-topic	Hours
Week 1	Class 1	Unit I	Course Introduction, Renewable Energy Overview, Solar Map of India	1
	Class 2	Unit I	Global Solar Radiation and Solar Energy Potential	1
	Class 3	Unit I	Solar Photovoltaic (PV) Basics	1
Week 2	Class 1	Unit I	Concentrated Solar Power (CSP): Introduction	1
	Class 2	Unit I	Power Tower: Construction and Working	1
	Class 3	Unit I	Parabolic Trough: Construction and Working	1
Week 3	Class 1	Unit I	Parabolic Dish: Construction and Working	1
	Class 2	Unit I	Fresnel Reflectors: Construction and Working	1
	Class 3	Unit I	Solar PV Power Plant: Components and Layout	1
Week 4	Class 1	Unit I	Solar PV Power Plant: Construction and Working	1
	Class 2	Unit I	Roof-top Solar PV Power System	1
	Class 3	Unit I	Unit-I Revision & Numerical/Discussion	1
Week 5	Class 1	Unit II	Wind Map of India, Wind Power Density	1
	Class 2	Unit II	Lift Principle	1
	Class 3	Unit II	Drag Principle and Long Path Theory	1
Week 6	Class 1	Unit II	Geared Type Wind Power Plant: Components	1
	Class 2	Unit II	Geared Type Wind Power Plant: Layout & Working	1
	Class 3	Unit II	Direct Drive Wind Power Plant: Components	1

Week	Class	Unit	Topic / Sub-topic	Hours
Week 7	Class 1	Unit II	Direct Drive Wind Power Plant: Layout & Working	1
	Class 2	Unit II	Constant Speed Generators: SCIG	1
	Class 3	Unit II	Constant Speed Generators: WRIG	1
Week 8	Class 1	Unit II	Variable Speed Generator: DFIG	1
	Class 2	Unit II	Variable Speed Generators: WRSG & PMSG	1
	Class 3	Unit II	Unit-II Revision	1
Week 9	Class 1	Unit III	Horizontal Axis Small Wind Turbine (Direct Drive)	1
	Class 2	Unit III	Horizontal Axis Small Wind Turbine (Geared Type)	1
	Class 3	Unit III	Vertical Axis Small Wind Turbine (Direct Drive)	1
Week 10	Class 1	Unit III	Vertical Axis Small Wind Turbine (Geared Type)	1
	Class 2	Unit III	Towers and Installation on Rooftops & Open Fields	1
	Class 3	Unit III	Electric Generators Used in Small Wind Power Plants	1
Week 11	Class 1	Unit III	Unit-III Revision & Tutorial	1
	Class 2	Unit IV	Biomass Energy and Introduction	1
	Class 3	Unit IV	Solid Biomass Fuels: Bagasse & Wood Chips	1
Week 12	Class 1	Unit IV	Solid Biomass Fuels: Rice Husk & Municipal Waste	1
	Class 2	Unit IV	Liquid Biomass Fuel: Jatropha	1
	Class 3	Unit IV	Bio-diesel and Gaseous Fuel (Biogas/Gobar Gas)	1
Week 13	Class 1	Unit IV	Bio-chemical Based Power Plant Layout	1
	Class 2	Unit IV	Thermo-chemical Based Power Plant Layout	1
	Class 3	Unit IV	Agro-chemical Based Power Plant Layout	1
Week 14	Class 1	Unit IV	Comparison of Biomass Power Plants	1
	Class 2	Unit IV	Unit-IV Revision	1

Week	Class	Unit	Topic / Sub-topic	Hours
	Class 3	All Units	Assignment/Case Study/Question Discussion	1
Week 15	Class 1	All Units	Complete Course Revision (Unit I & II)	1
	Class 2	All Units	Complete Course Revision (Unit III & IV)	1
	Class 3	All Units	Model Question Paper Discussion & Doubt Clearing	1

Unit-wise Hour Distribution

Unit	Allotted Hours	Planned Hours
Unit I – Solar PV & CSP	12	12
Unit II – Large Wind Power Plants	12	12
Unit III – Small Wind Turbines	9	9
Unit IV – Biomass-based Power Plants	12	12
Total	45	45


 Sandeep Mohapatra
 Lecturer Stage -1 (Electrical Engg)
 Govt. Polytechnic Jajpur

01/07/26