

Lesson Plan: Renewable Energy Power Plants

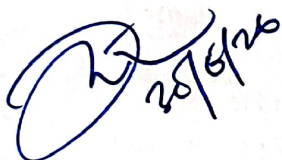
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Semester: 3rd (Winter 2026)

Date: 01-07-2026 to 05-11-2026

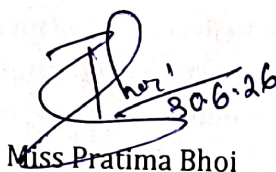
WEEK	DAYS	TOPICS
Week 1	1	Solar Map of India, global solar power radiation and solar energy potential
	2	Solar Photovoltaic (PV) technology and basic principles
	3	Concentrated Solar Power (CSP) plants: concept and classification
Week 2	4	Power Tower CSP plant: construction and working
	5	Parabolic Trough and Parabolic Dish CSP plants
	6	Fresnel Reflector CSP plant and applications
Week 3	7	Solar PV power plant: components and layout
	8	Construction and working of Solar PV power plant
	9	Roof top solar PV power system
Week 4	10	Large wind power plants and Wind Map of India
	11	Wind power density, lift and drag principle
	12	Long path theory of wind energy conversion
Week 5	13	Geared type wind power plant: components and layout
	14	Working of geared type wind power plant
	15	Direct drive type wind power plant: components and working
Week 6	16	Constant speed generators: SCIG and WRIG
	17	Variable speed generators: DFIG
	18	WRSG and PMSG used in wind power plants
Week 7	19	Introduction to small wind turbines
	20	Horizontal axis small wind turbine: direct drive type
	21	Horizontal axis small wind turbine: geared type
Week 8	22	Vertical axis small wind turbine: direct drive and geared type
	23	Components and working of small wind turbines
	24	Tower types and installation methods
Week 9	25	Rooftop and open field installation of small wind turbines
	26	Electric generators used in small wind power plants
	27	Performance aspects of small wind systems
Week 10	28	Introduction to biomass-based power plants
	29	Solid biomass fuels: bagasse, wood chips and rice husk
	30	Municipal waste as biomass fuel
Week 11	31	Liquid and gaseous biomass fuels
	32	Jatropha and biodiesel energy sources
	33	Biogas and gobar gas power generation

Week 12	34	Bio-chemical based biogas power plant layout
	35	Working of bio-chemical conversion system
	36	Thermo-chemical based municipal waste power plant
Week 13	37	Agro-chemical based biodiesel power plant layout
	38	Construction and working of biomass power plants
	39	Comparison of biomass conversion technologies
Week 14	40	Comparison of solar, wind and biomass power plants
	41	Renewable energy integration concepts
	42	Case studies of renewable power plants
Week 15	43	Revision of solar and wind energy systems
	44	Revision of biomass power plants and problem discussion
	45	Final revision and course outcome assessment



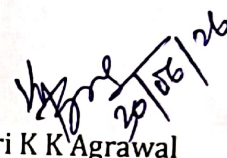
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