

UTKAL GOURAV MADHUSUDAN INSTITUTE OF TECHNOLOGY
RAYAGADA
DEPARTMENT OF ELECTRICAL ENGINEERING



LESSON PLAN
SEMESTER-3RD
SESSION- WINTER (2026)
SUBJECT: RENEWAL ENERGY POWER PLANTS
NAME OF FACULTY: SRI SRIKANTA THAKUR

Discipline: Electrical Engg.	Semester: 3rd	Name of the Teaching Faculty: SRIKANTA THAKUR
Subject: Renewable Energy power plant (REPP)	No. of Days/Per week class allotted: 03	Semester From Date: 01.07.2026 To Date: 5.11.2026 No. of Weeks: 19 Weeks
Week	Class Day	Theory/ Practical Topics
1 st (01/07/2026-04/07/2026)	1 st	1. Solar PV and Concentrated Solar Power Plants 1.1 Solar Map of India: Global solar power radiation, Solar PV
	2 nd	1.1 Solar Map of India: Global solar power radiation
	3 rd	1.1 Solar Map of India: Global solar power radiation
2 nd (05/07/2026-11/07/2026)	4 th	1.2 Concentrated Solar Power (CSP) plants
	5 th	1.2 Construction and working of Power Tower
	6 th	1.2 Construction and working of Parabolic Trough
3 rd (12/07/2026-18/07/2026)	7 th	1.2 Construction and working of Parabolic Dish
	8 th	1.2 Construction and working of Fresnel Reflectors
	9 th	1.3 Solar Photovoltaic (PV) power plant: components layout, construction, working.
4 th (19/07/2026-25/07/2026)	10 th	1.3 Solar Photovoltaic (PV) power plant: components layout, construction, working.
	11 th	1.3 Roof top solar PV power system
	12 th	1.3 Roof top solar PV power system
5 th (26/07/2026-01/08/2026)	13 th	2. Large Wind Power Plants 2.1 Wind Map of India: Wind power density in watts per square meter Lift and drag principle; long path theory.
	14 th	2.1 Wind Map of India: Wind power density in watts per square meter Lift and drag principle; long path theory.
6 th (02/08/2026-08/08/2026)	15 th	2.1 Wind Map of India: Wind power density in watts per square meter Lift and drag principle; long path theory.
	16 th	2.2 Geared type wind power plants: components, layout and working.
	17 th	2.2 Geared type wind power plants: components, layout and working.
7 th (09/08/2026-15/08/2026)	18 th	2.2 Direct drive type wind power plants: components, layout and working.
8 th (16/08/2026-22/08/2026)	19 th	CLASS TEST
	20 th	2.2 Direct drive type wind power plants: components, layout and working.
9 th (23/08/2026-29/08/2026)	21 th	2.3 Constant Speed Electric Generators: Squirrel Cage Induction Generators (SCIG)
	22 th	2.4 Wound Rotor Induction Generator (WRIG)
	23 th	2.4 Variable Speed Electric Generators: Doubly-fed induction generator (DFIG)
10 th (30/08/2026-05/09/2026)	24 th	2.4 wound rotor synchronous generator (WRSG)

	25 th	2.4 permanent magnet synchronous generator (PMSG). 3. Small Wind Turbines 3.1 Horizon axis small wind turbine: direct drive type, components and working
	26 th	3.1 Horizon axis small wind turbine: direct drive type, components and working
11 th (06/09/2026-12/09/2026)	27 th	3.1 Horizon axis small wind turbine: geared type
	28 th	3.1 Horizon axis small wind turbine: geared type
	29 th	1st INTERNAL ASSESSMENT
12 th (13/09/2026-19/09/2026)	30 th	3.2 Vertical axis small wind turbine: direct drive and geared, components and Working
13 th (20/09/2026-26/09/2026)	31 th	3.2 Vertical axis small wind turbine: direct drive and geared
	32 th	3.2 Vertical axis small wind turbine: direct drive and geared
	33 th	3.2 Types of towers and installation of small wind turbines on rooftops and open fields.
14 th (27/09/2026-03/10/2026)	34 th	3.3 Electric generators used in small wind power plants
	35 th	3.3 Electric generators used in small wind power plants
	36 th	4.Biomass-based Power Plants 4.1 Properties of solid fuel for biomass power plants: bagasse, wood chips, rice husk, municipal waste
15 th (04/10/2026-10/10/2026)	37 th	4.1 Properties of solid fuel for biomass power plants: bagasse, wood chips, rice husk, municipal waste
	38 th	4.2 Properties of liquid and gaseous fuel for bio mass power plants: Jatropha, bio- diesel gohar gas
	39 th	2nd INTERNAL ASSESSMENT
16 th (11/10/2026-17/10/2026)	40 th	4.2 Properties of liquid and gaseous fuel for bio mass power plants: Jatropha, bio- diesel gohar gas
	41 th	4.2 Properties of liquid and gaseous fuel for bio mass power plants: Jatropha, bio- diesel gohar gas
	42 th	4.3 Layout of a Bio-chemical based (e.g. biogas) power plant:
17 th (18/10/2026-24/10/2026)	43 th	4.3 Layout of a Bio-chemical based (e.g. biogas) power plant:
	44 th	4.4 Layout of a Thermo-chemical based (e.g. Municipal waste) power plant
18 th (25/10/2026-31/10/2026)	45 th	4.4 Layout of a Thermo-chemical based (e.g. Municipal waste) power plant
	46 th	4.5 Layout of a Agro-chemical based (e.g.bio-diesel) power plant
	47 th	4.5 Layout of a Agro-chemical based (e.g.bio-diesel) power plant
19 th (01/11/2026-05/11/2026)	48 th	4.5 Layout of a Agro-chemical based (e.g.bio-diesel) power plant