



SIDDHARTH INSTITUTE OF ENGINEERING AND TECHNOLOGY, KORAPUT
DEPARTMENT OF ELECTRICAL ENGINEERING
LESSON PLAN

Name of the Course : TH-5: RENEWAL ENERGY POWER PLANTS			
Name of the Faculty: Er. KUSUM OYAL			
Semester from date : 01.07.2026 TO 05.11.2026			
Course Code :	EEPC209	Semester :	3 rd
Total Periods:	45 Periods	Examination :	3Hrs
Theory Periods :	45 Hrs.	Progressive Assessment :	30
Lecture :	3Hrs/week	End Term Exam :	70
Credit :	3	Total Marks :	100

VISION:

To create competent and industry ready Electrical Diploma Engineers with professional and social values to meet future challenges.

MISSION:

- To prepare diploma holders through “qualitative competency-based education system” to compete with national requirement along with core values.
- To produce dynamic Electrical Engineers to serve the society and industry.
- To develop leadership qualities, communication skills, critical thinking and attitude for lifelong learning.

PROGRAM EDUCATIONAL OBJECTIVES:

PEO1	Applying technical knowledge and skills learned in the field of Electrical Engineering to excel in professional and/or higher education.
PEO2	To provide students an excellent academic environment and make them aware the needs of Society and Industry to become a successful Professional/Entrepreneur.
PEO3	To engage in lifelong learning, career enhancement to adopt to emerging technologies.

COURSE OUTCOME:

CO1	Explain the construction and working principle of Solar PV and Concentrated Solar Power Plants.
CO2	Describe the components and working principles of large and small Wind Power Plants
CO3	Explain the construction and working principle of Micro-hydro Power Plants
CO4	Discuss the properties of solid, liquid and gaseous fuels for biomass power plants
CO5	Explain the construction and working principle of Solar PV and Concentrated Solar Power Plants.

TOPIC WISE DISTRIBUTION OF PERIODS

Unit No.	Topics	Periods
I	Solar PV and Concentrated Solar Power Plants	12
II	Large Wind Power Plants	12
III	Small Wind Turbines	09
IV	Biomass-based Power Plants	12



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CO	Day	Theory Topic	Corresponding CO
1 st	WEDNESDAY	Solar Map of India: Global solar power radiation, Solar PV	CO1
	THURSDAY	Concentrated Solar Power (CSP) plants	CO1
	SATURDAY	construction and working of Power Tower	CO1
2 nd	WEDNESDAY	Parabolic Trough	CO1
	THURSDAY	Parabolic Dish	CO1
	SATURDAY	Fresnel Reflectors	CO1
3 rd	WEDNESDAY	Solar Photovoltaic (PV) power plant: components layout,	CO1
	THURSDAY	Solar Photovoltaic (PV) power plant: construction	CO1
	SATURDAY	Solar Photovoltaic (PV) power plant: working	CO1
4 th	WEDNESDAY	Roof top solar PV power system	CO1
	THURSDAY	Wind Map of India: Wind power density in watts per square meter Lift and drag principle; long path theory.	CO2
	SATURDAY	Wind Map of India: Wind power density in watts per square meter Lift and drag principle; long path theory.	CO2
5 th	WEDNESDAY	Geared type wind power plants: components, layout	CO2
	THURSDAY	Geared type wind power plants: working.	CO2
	SATURDAY	Direct drive type wind power plants: components, layout	CO2
6 th	WEDNESDAY	Direct drive type wind power plants: working	CO2
	THURSDAY	Constant Speed Electric Generators: Squirrel Cage Induction Generators(SCIG)	CO2
	SATURDAY	Wound Rotor Induction Generator (WRIG)	CO2
7 th	WEDNESDAY	Variable Speed Electric Generators	CO2
	THURSDAY	Doubly-fed induction generator (DFIG) permanent magnet synchronous generator (PMSG).	CO2
	SATURDAY	Wound rotor synchronous generator (WRSG)	CO2
8 th	WEDNESDAY	Permanent magnet synchronous generator (PMSG).	CO2
	THURSDAY	Horizon axis small wind turbine: direct drive type, components and working	CO3
	SATURDAY	Horizontal axis small wind turbine: geared type, components and working	CO3
9 th	WEDNESDAY	Vertical axis small wind turbine: direct drive components and Working	CO3
	THURSDAY	Vertical axis small wind turbine: geared, components and Working	CO3
	SATURDAY	Vertical axis small wind turbine: direct drive components and Working	CO3
10 th	WEDNESDAY	Vertical axis small wind turbine: geared, components and Working	CO3
	THURSDAY	Types of towers and installation of small wind turbines on rooftops	CO3

	SATURDAY	Types of towers and installation of small wind turbines on open fields.	CO3
11 th	WEDNESDAY	Electric generators used in small wind power plants	CO3
	THURSDAY	Properties of solid fuel for biomass power plants: bagasse, wood chips	CO4
	SATURDAY	Properties of solid fuel for biomass power plants: ricehusk, municipal waste	CO4
12 th	WEDNESDAY	Properties of liquid fuel for bio mass power plants: Jatropha, biodiesel ,gobar gas	CO4
	THURSDAY	Properties of gaseous fuel for bio mass power plants: Jatropha, biodiesel ,gobar gas	CO4
	SATURDAY	Layout of a Bio-chemical based (e.g. biogas) power plant	CO4
13 th	WEDNESDAY	Layout of a Thermo-chemical based (e.g. Municipal waste) power plant	CO4
	THURSDAY	Layout of a Agro-chemical based (e.g.bio-diesel) power plant	CO4
	SATURDAY	REVIEW	

Kusum Oyal

22/06/2020

Signature of Faculty Concerned

(Electrical Engg.)

K. Parital

22/6/20

Head of Department

(Electrical Engg.)

[Signature]

22/06/2020

Principal

S.I.E.&T, KORAPUT

Principal

Siddharth Institute of Engineering & Technology Ektaguda, Koraput

Electrical Engg
S.I.E. KORAPUT