

LESSON PLAN	
JHARSUGUDA ENGINEERING SCHOOL,JHARSUGUDA	
Academic Year: 2020-2021	Name of the Faculty:SASMITA SA
Course name: Renewable Energy	Course No.: TH4IE2
Branch: Electrical	Program: Diploma
Section:	Year/Sem: 3rd/6th

Sl. No.	Period	Time (min)	Teaching Method	Topic to be Covered	Unit
1.	1.	55 min	Black board	Environmental consequence of fossil fuel use	1
2.	2.	55min	Black board	Importance of renewable sources of energy, Limitation of RE sources	1
3.	3.	55min	Black board	Sustainable Design and development	1
4.	4.	55min	Black board	Types of RE sources	1
5.	5.	55min	Black board	Present India and International energy scenario of conventional and RE sources	1
6.	6.	55min	Black board	Solar photovoltaic system-operating principle	2
7.	7.	55min	Black board	Cell, module, array, Series and parallel connections	2
8.	8.	55min	Black board	Maximum power point tracking(MPPT)	2
9.	9.	55min	Black board	Classification of energy sources	2
10.	10.	55min	Black board	Extra-terrestrial and terrestrial Radiation	2
11.	11.	55 min	Black board	Azimuth angle, Zenith angle, Hour angle, Irradiance, Solar constant	2
12.	12.	55 min	Black board	Solar collectors, Types of solar collector	2
13.	13.	55min	Black board	Performance characteristics of solar collectors	2
14.	14.	55 min	Black board	Photovoltaic-battery charger	2
15.	15.	55 min	Black board	Domestic lighting	2
16.	16.	55min	Black board	Street lighting	2
17.	17.	55min	Black board	Water pumping	2
18.	18.	55 min	Black board	Solar cooker	2
19.	19.	55 min	Black board	Solar pond	2
20.	20.	55 min	Black board	Introduction to wind energy	3
21.	21.	55 min	Black board	Wind energy conversion	3
22.	22.	55min	Black board	Types of wind turbines	3
23.	23.	55min	Black board	Aerodynamics of wind rotors	3

24.	24.	55 min	Black board	Wind turbine control systems	3
25.	25.	55 min	Black board	Induction generators	3
26.	26.	55 min	Black board	Synchronous generators	3
27.	27.	55 min	Black board	Grid connected induction generator operation	3
28.	28.	55 min	Black board	Self-excited induction generator operation	3
29.	29.	55 min	Projector	Constant voltage and constant frequency generation with power electronic control	3
30.	30.	55 min	Projector	Single and double output systems	3
31.	31.	55 min	Projector	Characteristics of wind power plant	3
32.	32.	55 min	Projector	Energy from Biomass	4
33.	33.	55 min	Projector	Biomass as renewable energy source	4
34.	34.	55 min	Projector	Types of Biomass fuel-solid, liquid and gas	4
35.	35.	55 min	Projector	Combustion	4
36.	36.	55 min	Projector	fermentation	4
37.	37.	55 min	Black board	Anaerobic digestion	4
38.	38.	55 min	Black board	Types of biogas digester	4
39.	39.	55 min	Black board	Wood gassifier	4
40.	40.	55 min	Black board	Pyrolysis	4
41.	41.	55 min	Black board	Application : Bio gas	4
42.	42.	55 min	Black board	Bio Diesel	4
43.	43.	55 min	Black board	Tidal energy : Energy from the tides	5
44.	44.	55 min	Black board	Barrage tidal power system	5
45.	45.	55 min	Black board	Non barrage tidal power system	5
46.	46.	55 min	Black board	Ocean thermal energy conversion(OTEC)	5
47.	47.	55 min	Black board	Types of OTEC plant	5
48.	48.	55 min	Black board	Geothermal energy	5
49.	49.	55 min	Black board	Classification of geothermal energy	5
50.	50.	55 min	Black board	Hybrid energy systems	5
51.	51.	55 min	Black board	Types of hybrid energy systems	5
52.	52.	55 min	Black board	Need for hybrid systems	5
53.	53.	55 min	Black board	Diesel -PV	5
54.	54.	55 min	Black board	Wind -PV	5

55.	55.	55 min	Black board	Microhydel - PV	5
56.	56.	55 min	Black board	Electric vehicles	5
57.	57.	55 min	Black board	Hybrid electric vehicles	5
58.	58.	55 min	Black board	Revision of all topics	
59.	59.	55 min	Black board	Revision of all topics	
60.	60.	55 min	Black board	Revision of all topics	