

LESSON PLAN

Name of the Institute:		C. V. RAMAN POLYTECHNIC
Department:		ELECTRICAL ENGINEERING
Semester/Division/Branch:		4 th SEM/EE
Subject Name with code:		RENEWABLE ENERGY SYSTEM(TH-4)
Total No. of Class (Required):		60
Faculty Name:		SAMAR PATASAHANI
Class No.	<i>Brief description of the Topic/Chapter to be taught</i>	Remarks
1	Introduction to Renewable energy.	
2	Environmental consequences of fossil fuel use	
3	Importance of renewable sources of energy	
4	Sustainable Design and development.	
5	Types of RE sources.	
6	Limitations of RE sources	
7	Present Indian and international energy scenario of conventional and RE sources	
8	Revision	
9	Class test	
10	Introduction to solar energy	
11	Solar Energy	
12	Solar photovoltaic system-Operating principle	
13	Photovoltaic cell concepts	
14	Cell, module, array, Series and parallel connections. Maximum power point tracking (MPPT)	
15	Classification of energy Sources	
16	Extra-terrestrial and terrestrial Radiation	
17	Azimuth angle, Zenith angle, Hour angle,	

18	Irradiance, Solar constant.	
19	Revision	
20	Class test	
21	Solar collectors	
22	Types and performance characteristics	
23	Introduction Wind Energy.	
24	Wind energy conversion.	
25	Types of wind turbines	
26	Aerodynamics of wind rotors.	
27	Wind turbine control systems	
28	conversion to electrical power:	
29	Grid connected and self excited induction generator operation.	
30	Revision	
31	Revision	
32	Revision	
33	Constant voltage and constant frequency generation with power electronic control	
34	Single and double output systems.	
35	Characteristics of wind power plant.	
36	Revision	
37	Class test	
38	Energy from Biomass	
39	Biomass as Renewable Energy Source	
40	Types of Biomass Fuels	
41	Solid, Liquid and Gas	
42	Solid, Liquid and Gas	
43	Combustion and fermentation.	

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45	Anaerobic digestion	
46	Types of biogas digester	
47	Wood gassifier	
48	Pyrolysis	
49	Applications	
50	Bio gas, Bio diesel	
51	Revision	
52	Class test	
53	Tidal Energy: Energy from the tides	
54	Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems.	
55	Ocean Thermal Energy Conversion (OTEC).	
56	Geothermal Energy – Classification.	
57	Hybrid Energy Systems.	
58	Need for Hybrid Systems.	
59	Diesel-PV, Wind-PV, Microhydel-PV	
60	Electric and hybrid electric vehicles.	



Signature of the Faculty



Signature of the H.O.D