GOVERNMENT CO.ED POLYTECHNIC RAIPUR (C.G)

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Session: April-May

Session start as per university calendar:

Course Name: Wind & Solar Power Technology

Name of Subject Teacher:

Lecturer plan L+T+P+SL = 6

Course code: 2024672(024)

Discipline: EE | Semester: 6th | Class room Instruction Start Date:

S.No.	Chapter No.	Topics	Sub Topic to be covered	Total hours	No. of periods planned	Actual No of periods taken	Date of Class Conduction	Use of AV resources if any	Remarks if any
1	1	Renewable Energy Sources	Various sources of energy- conventional and renewable	16	1	1	17/01/25	NA	
			Importance of Non-conventional energy sources		1	1	20/01/25		
			Energy chain- energy flow block diagram from primaryenergy source to final energy consumption		1	1	23/01/25		
			Merits and demerits of Conventional energy sources		1	1	27/01/25		
			Salient features of nonConventional energy sources		1	1	28/01/25		
			Green power- definition and merits		1	1	29/01/25		
2	2	Electric Heating and welding	Wind energy introduction, factors affecting the distribution of wind energy on surface of earth	16	2	2	29/01/25 (2)	NA	
			Variation of wind speed with height, estimation of wind energy at a site, power in wind, emperical formula, wind speed duration curve		2	2	31/01/25, 03/02/25		
			Capacity factor of a wind power plant		1	1	05/02/25		
			Important terms and definition in wind power plant.		1	1	05/02/25		
			Elementary fluid flow concept, nature of flow around a body, relative motion of fluid at a boundary wall.		1	1	07/02/25		

3	3	**Wind Power Generation**	Introduction- block diagram of wind energy conversion system, wind turbine and types	19	2	2	10/02/25, 12/02/25	NA	
			Horizontal axis wind turbine, main components, turbine blades, hub, yaw control, types of rotor		4	4	12/02/25, 19/02/25 (2) 21/02/25		
			Vertical axis wind turbine, tower, blades, rotor types		2	2	28/02/25, 07/03/25		
			HAWT V/S VAWT merits and demerits		1	1	10/3/25		
			Speed control, power-speed characteristics, type of generator suitable for wind turbine, system integration		3+2	5	11/03/25, 12/03/25 (2) 17/03/25, 18/03/25		
4	4	**PV Cell**	PV cell characteristics and equivalent circuit	22 i3	2	2	19/03/25, 21/03/25	NA	
			Datasheet of PV cell, open ckt voltage, peak power, cell efficiency parameters		4	4	21/3/25 24/3/25 26/03/25 (2) ~~28/03/25~~		
			Effect of temperature on PV cell		1	1	01/04/25		
			Connection of identical and non identical PV cell in series		2	2	04/04/25, 07/04/25		
			Protecting series and parallel connected PV cells		2	2	08/04/25, 09/04/25		
5	5	**Energy from sun and sizing of PV**	Insolation and irradiance and insolation variation with time of day	22 to	3	3	09/04/25, 11/04/25, 15/04/25	NA	
			Insolation & energy on a horizontal flat plate		2	2	16/04/25 (2)		
			Atmospheric effects		1	1	17/04/25		
			Intro. To batteries, charging rate, energy and power densities		2	2	22/04/25, 28/04/25		
			Battery selection and PV sizing for domestic /commercial application		2	2	29/04/25, 30/04/25		
				95 Hours					