

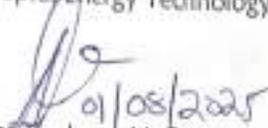
Govt. Polytechnic Hamirpur (H.P.)  
Lecture Planning (Theory)

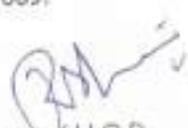
Branch : Electrical Engg. Semester: 5th  
Subject : SOLAR POWER TECHNOLOGIES Session: Aug-Dec-2025  
Teacher: Archit Bharti Lab : EBLI

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1.	12	Solar Energy	Solar Map of India: Global solar power radiation Different types of Solar water heaters: Construction, working. Different types of solar cookers. Solar Drying process, solar lighting, and Preventive maintenance of all of the above	R1,R4,R5	
2.	16	Concentrated Solar Power (CSP)	Concentrated Solar Power (CSP) plants or solar thermal electric systems. Parabolic Trough: Construction, working and specifications Parabolic Dish: Construction, working and specifications Fresnel Reflectors: Construction, working and specifications Preventive maintenance of all of the above		
3.	16	Solar PV Systems	Solar PV cell: Types, construction, working of solar cells. Solar PV working principle: Series and parallel connections of solar modules. Solar Photovoltaic (PV) system: components, layout and working. Solar modules and solar arrays. Solar PV systems and typical specifications. Maintenance of all of the above.	R1	
4.	20	Solar PV Electronics	Solar Charge controllers: working and specifications, switchgear and cables Batteries: Different types for solar PV systems, Solar Inverters: working and specifications Solar Power tracking: construction, working, tilt angle, maximum power point tracking (MPPT) Maintenance of these systems.	R1,R2,R3	
5.	16	Solar PV Off-grid and Grid Tied Systems	Solar off grid systems: layout and specifications Solar Grid tied (on grid) systems: Working principle of grid-tied dc-ac inverter, grid synchronization and active power export. Brief introduction to Solar-Wind Hybrid systems.	R1,R2,R4	

aching Resources:

- R1: Solanki, Chetan Singh, - Solar Photovoltaics: Fundamentals, Technologies and Applications, PHI Learning, New Delhi, ISBN: 9788120351110  
R2: Kothari, D.P. et al.: Renewable Energy Sources and Emerging Technologies, PHI.  
R3: David M. Buchla, Thomas E. Kissell, Thomas L. Floyd, - Renewable Energy Systems, Pearson Education, 14 New Delhi, ISBN: 9789332586826  
R4: Rachel, Sthuthi, Earnest, Joshua; - Wind Power Technologies, PHI Learning  
R5: O.P. Gupta, Energy Technology, Khanna Publishing House, ISBN: 978-93-86173-683.

  
Signature of Teacher with Date

  
Signature of H.O.D.