

Lesson Plan of the 8th semester for session 2025-26

Name of the faculty: Dr. Nirdesh Singh
Designation: Assistant Professor
Discipline: Electrical Engg.
Semester: VIIIth Sem
Subject: **Solar Thermal Applications**
Subject Code: OEC- EE-402G
Lesson Plan duration: 14 weeks
Work Load per week in hours: Lectures- 03

S. No.	Lecture day	Topic (Including Assignment/Test)	
SECTION - A			
S. No.	Lecture No.	Topic	Date on which Topic Covered
1.	1	Solar Radiation Outside the Earth's Atmosphere	
	2	Solar Radiation at the Earth's Surface	
	3	Instruments for Measuring Solar Radiation and Sunshine,	
2.	4	Solar radiation data	
	5	Solar radiation geometry	
	6	Empirical Equations for Predicting the Availability of Solar Radiation	
3.	7	Solar Radiation on Tilted Surfaces	
	8	Heat transfer concept	
	9	Revision	
SECTION - B			
4.	10	Liquid flat-plate collectors: general, performance analysis	
	11	Transmissivity of the Cover System, Transmissivity-Absorptivity Product,	
	12	Overall Loss Coefficient and Heat Transfer Correlations	
5.	13	Collector Efficiency Factor, Collector Heat-removal Factor,	
	14	Effects of Various Parameters on Performance	
	15	Analysis of Collectors Similar to the Conventional Collector, Transient Analysis, Testing Procedures	

6.	16	Alternatives to the Conventional Collector Concentrating Collectors:	
	17	Flat-plate Collectors with Plane Reflectors, Cylindrical Parabolic Collector, Compound Parabolic Collector (CPC),	
	18	Paraboloid dish collector, central receiver collector	
SECTION - C			
7.	19	Thermal energy storage:	
	20	Revision thermal energy storage:	
	21	Introduction, sensible heat storage	
8.	22	Revision introduction, sensible heat storage	
	23	Latent heat storage	
	24	Revision latent heat storage	
9.	25	Thermochemical storage	
	26	Revision thermochemical storage	
	27	Revision	
10.	28	Revision	
	29	Revision	
	30	Class test	
SECTION - D			
11.	31	Solar air heaters	
	32	Revision solar air heaters	
	33	Greenhouse drying system	
12.	34	Revision greenhouse drying system	
	35	Introduction, Performance Analysis of a Conventional Air Heater	
	36	REVISION Introduction, Performance Analysis of a Conventional Air Heater	
13.	37	Other Types of Air Heaters.	
	38	REVISION Other Types of Air Heaters	
	39	Greenhouse effect	
14.	40	Revision Greenhouse effect	
	41	Solar drying, types of dryer	
	42	Drying mechanics.	