Guru Goraknath Ji Govt. Polytechnic Jhajjar

Electrical Engineering Department

Lesson plan

Name of the Faculty	:	Rahul Nehra
Discipline	:	Electrical Engg
Semester	:	5th
Subject	:	SPIM
Lesson Plan Duration:		15 weeks

Week	Theory	
	Day	Topic
1	1	Introduction Of The Subject, Its Need, Applications
	2	INTRODUCTION TO PHOTOVOLTAIC
	3	Basic of PV system: Photo voltaic effect
2	4	PV Cell, PV panel, PV module, PV Arrays,
	5	Photovoltaic I-V Characteristics Curves
	6	conversion efficiency
3	7	Selection of Site: Site assessment tools, Site Location, Climate Condition,
	8	Solar Irradiance, Solar Insolation, Sun Angle and PV Orientation, Shading analysis.
	9	Tilt angle and its significance in solar panel orientation.
4	10	COMPONENTS OF PV SYSTEM
	11	PV Module: Series and Parallel connection of PV
	12	Charger Controller: Function, type of charge controller
5	13	Queries taken from previous topics from students
	14	Assignment no.1
	15	Class test no.1
6	16	Inverter: Function, power ratings.
	17	Storage Battery: Battery parameters, battery bank

	18	types of batteries used in solar system. 2.5 PV Mounting Structure: Roof mounted and ground mounted Structure
7	19	Balance of Systems: Disconnecting switches, wires and cables, combiner boxes, net meter, protection devices, earthing and grounding, Solar tracking systems etc.
	20	SOLAR PV SYSTEM INSTALLATION
	21	Installation Tool: Hand tool ,wire strippers, crimping tools, bolts, nuts, and washers, Leveling tools
8	22	ground anchors, multimeter, clamp on meter, non-contact thermometer, angle finder etc.
	23	Types of Solar PV System: Standalone PV system, On Grid system, Off Grid system and Hybrid PV system,
	24	Comparison of Different types of PV system.
9	25	Design Methodology for SPV system: Calculation of load, Size of solar panel,
	26	Battery sizing, Selection of inverter, Size of charge controller, Cable sizing etc
	27	Connection of PV system components.
10	28	Queries taken from previous topics from students
	29	Assignment no.2
	30	Class test no.2
11	31	SAFETY DURING PV INSTALLATION
	32	Operating Hazardous Tools and Equipment: Personal protective equipment (PPE),
	33	Fall protection equipment/tools, Fire protection equipment.
12	34	Safety of PV system: PV module safety, Electrical Safety, Battery safety.
	35	Marking and Labeling of PV components
	36	MAINTENANCE AND TROUBLESHOOTING
13	37	Maintenance of Solar PV system
	38	Maintenance of Battery
	39	Installation and Troubleshooting of Solar PV system
14	40	Copy checking
	41	Revision of 1st and 2nd chapters
	42	Revision of 3rd and 4th chapters
15	43	Queries taken from previous topics from students
	44	Assignment no.3

	45	Class test no.3