Course	SOLAR INSTALLATION & MAINTENANCE	Duration	240hrs	Planned Date	Completed Date
Subject	SOLAR INSTALLATION & MAINTENANCE	Per Day	8hrs		
DAY	TOPIC				
1	Introduction to Basics of Electricity: Basic of Electrical, Basics of Electricity- Charge, Current, Voltage, Frequency. Introduction to Basics of Electricity: AC supply Resistors, Inductor and Capacitor.				
2	Introduction to Basics of Electricity: Conductor, Insulator, Work, Power and Energy, Ohm's Law. Introduction to Basics of Electricity: Series and Parallel combination of resistors.				
3	Introduction to Renewable Energy Sources: Know about different forms of Energies; Understand the importance of Renewable resources. Solar energy, History of photovoltaic cells, Working Solar cells, Energy losses in cell.				
4	Applications of Solar cells - Professional applications. Photovoltaic power, Advantages of solar power, Hybrid solar Lighting. Solar power Generation system: Solar Cells, Solar modules, Solar Array, Solar Panel Installation.				
5	What is OFF Grid system and On Grid system? And how does it Really work Advantages and Disadvantages of OFF Grid and ON Grid system.				
6	Power Concepts and Units preferring to Solar Energy Energy Curves (Production-consumption-Batteries)				
7	Basics of Batteries and its types. Analyze difference between different types of batteries by calculating life span and rate of charging and discharging Energy Curves (Production-consumption-Batteries)				
8	Peak Sun Hours (What is it and How to calculate) **Expt-1** Study of both current-voltage characteristics and the power curve to find the maximum power point and efficiency of the solar cell				
9	**Expt-2** Study the voltage and current of solar cells in series and parallel. **Expt-3** Study the application of solar cells of charging the battery so that the loads can be used even while the module is unexposed to light				

10	**Expt-4** Study the applications of solar cell of providing electrical energy to the domestic appliances. Solar Module (PV Modules and Junction Boxes)		
11	Charge controller Buck-Boost converter, Bypass diodes, Dusk to Dawn switch.		
12	**Expt-5** Study of various modes of constant voltage charging technique **Expt-6** Study of buck- boost converter		
13	**Expt-7** Study of bypass diodes and dusk to dawn switch Introduction of Interconnection between Off grid components- Field Experience		
14	5 steps into Efficient Off Grid design **Expt-8** Understanding the geography behind solar PV installation		
15	**Expt-9** Measurement and analysis of different parameters of solar PV module **Expt-10** Understanding and estimating of load on solar PV system		
16	Types of charge controllers, advantage of charge controller. Inverters and its types, advantage and applications of inverters.		
17	**Expt-11** Study of charge controller **Expt-12** Study of different parameters of inverter		
18	**Expt-13** Analysis of the effect of dust on solar PV module **Expt-14** Analysis of the effect of temperature on solar pv module		
19	**Expt-15** Study about safety and precautions for installation of solar system Application of solar power in day today life		
20	Calculate Load – considering different load Calculating Load for different load sectors- Domestic, Commercial		
21	Practicing calculations Solar Array Sizing		
22	Calculating Solar array size as per the load Requirement Practice session		
23	Battery Bank Sizing as per the load calculation Calculating Battery Size for different Load		

24	Practice Session Charge controller selection		
25	Calculating Controller for different Load Practice Session		
26	Inverter selection Calculating Inverter selection for different Load		
27	Practice Session Project 1		
28	Project 2 Practice of Installation and Maintenance of Solar panel		
29	Revision Revision		
30	Discussion session Theory And Practical Examination		