

Solar PV Installer (Suryamitra) Skills

उर्जा के सर्वमान्य स्रोत सौर उर्जा जो कि अब रिन्युएबल एनर्जी के अन्तर्गत सबसे तेज बढ़ता कार्य है, रोजगार के असीम अवसर रखता है।

| Course Name | Solar PV Installer (Suryamitra) Skills | Course Code | SGJ/Q0101 |
|---|--|-------------|-----------|
| <p>Training Outcomes : After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Carry out the site survey for installation of Solar PV system • Assess the customer's Solar PV requirement • Procure the Solar PV system components • Identify and Use the Tools & tackles used for Solar PV system installation • Install the Civil/Mechanical and Electrical components of a Solar PV system • Test and Commission Solar PV system • Maintain personal Health & Safety at project site | | | |

CURRICULUM / SYLLABUS

Part-A (Domain Skills)

| S. No. | Module | Duration (In Hours) |
|--------|---|---------------------|
| 1. | <p>Introduction to Solar PV Installer (Suryamitra) Course</p> <ul style="list-style-type: none"> • Demonstrate general Discipline in the class room and during the training program; • Understand the role of Solar PV Installer and job opportunities; • Understand the advantages of doing this course; • Acquire basic skills of communication; • Acquire basic reading capabilities to enable reading of signs, notices and/or cautions at site. | 5:00 |
| 2. | <p>Basics of Solar energy and Electrical concepts-</p> <ul style="list-style-type: none"> • Understand Ohm's Law; • Understand the basics of electricity and electrical concepts; • Perform simple calculations to derive power and energy • Explain and understand DNI, GHI and Diffused Irradiance & Irradiation; • Assess the movement of the sun and its effect on the performance of the plant | 10:00 |
| 3. | <p>Basics of Solar Photovoltaic systems and its components-</p> <ul style="list-style-type: none"> • Understand Terminology used in the Solar Industry; • Identify the different components of a Solar PV system and its basic operation; • Identify and understand the working of different types of Solar PV systems • Understand and acquire know-how of different Types, sizes and specifications of , Modules, Solar Inverters, Charge Controllers, Cables, Conduits, Junction Boxes, Solar Batteries and allied accessories • Read and Interpret the manufacturing data specification sheets of different Types, sizes and specifications of , Modules, Solar Inverters, Charge Controllers, Cables, Conduits, Junction Boxes, Solar Batteries and allied accessories | 25:00 |
| 4. | <p>Identification and Use of different tools and tackles used for installation of solar PV system-</p> <p>Identify and acquire the know-how of the different tools & tackles used for specific purpose in an installation of Solar PV system</p> | 10:00 |
| 5. | <p>Site Survey for Installation of Solar PV System and asses the customer's Solar PV Requirement.-</p> <ul style="list-style-type: none"> • Understand how to observe Sun path diagram and shading analysis; • Understand and assess the site conditions for safe installation of Solar PV system; • Identify the load to be connected to the Solar PV system; | 15:00 |



| S. No. | Module | Duration (In Hours) |
|------------------|---|---------------------|
| | <ul style="list-style-type: none">Prepare load profileEngage with customers for any specific requirement and budget constraints;Calculate size of the system with basic mathematical tools; | |
| 6. | Interpretation of Drawings , Material Handling and storage of components on-site- <ul style="list-style-type: none">Read and Interpret the Single Line Diagram, Layout Diagrams, Civil/Mechanical and Electrical DrawingsUnderstand the DO's and Don'ts of material handlingRead and interpret the Bill of Material to verify with the delivery of components on-site. | 15.00 |
| 7. | Installation and mounting structure and photovoltaic modules, battery stand and inverter stand as per drawings – <ul style="list-style-type: none">Understand and acquire know-how of installing the mounting structure along with structural supports and accessories for safe & weatherproof installation as per site conditions; | 25:00 |
| 8. | Installation of Electrical components of a Solar PV System.- <ul style="list-style-type: none">Understand and acquire the know-how of installing the electrical components including inverter, batteries, junction boxes, energy meters, cables and conduits other electrical componentsUnderstand the Do's and Don'ts of DC wiring;Identify Tools & tackles used for cable and conduit installationIdentify and acquire knowledge of different types of Earthing and its installation | 20:00 |
| 9. | Test and Commission Solar PV system <ul style="list-style-type: none">Describe and conduct the testing of all the solar components of the Solar PV system including fault finding and analysis including continuity checks, polarity check and other commissioning activities;Understand Regulations & Standards for interconnection;Describe the Commissioning process for the Solar PV System | 20:00 |
| 10. | Maintain Solar Photovoltaic System <ul style="list-style-type: none">Carry out maintenance activities required for each component;Prepare and execute Preventive maintenance schedule and reactive maintenance activities;Understand the Typical faults, their causes and resolution for all components; | 50:00 |
| 11. | Maintain Personal Health & Safety at project site <ul style="list-style-type: none">Identify the requirements for safe work area;Administer first aid;Identify the personal protective equipment used for the specific purpose;Identify the hazards associated with photovoltaic installations;Identify work safety procedures and instructions for working at height;Understand Occupational health & Safety standards and regulations for installation of Solar PV system | 10:00 |
| 12. | Completion and Handover Documentation <ul style="list-style-type: none">Acquire a thorough understanding of Start- up and shutdown procedure of a Solar PV system;Understand and prepare the Checklist for handover of the plant;Prepare complete and final documentation including commissioning forms and operation procedure; | 5:00 |
| Sub Total | | 210.00 |



Skilling Youth
Enriching Livelihoods

Mukhyamantri Yuva Kaushal Yojna (MMYK)



Part-B (Soft Skills)

| S. No. | Topics | Duration (In Hours) |
|------------------|---|--------------------------------|
| 1. | Development Competency/ Proficiency in English/Vernacular | 10:00 |
| 2. | Effective Communication | 10:00 |
| 3. | Self & time Management | 10:00 |
| 4. | Motivational Techniques | 05:00 |
| 5. | Interpersonal Skill Development | 05:00 |
| 6. | Computer Literacy | 20:00 |
| 7. | Life Skills | 05:00 |
| 8. | Entrepreneurship | 15:00 |
| 9. | Occupational Safety, Health and Environment Education | 10:00 |
| Sub Total | | 90:00 |

Total Course Duration : 300:00 Hours