



Solar Installation

Program: Electrician Technician

Course: EL190 – Solar Electric

Objectives: Under the supervision of your instructor, you should be able to do the following:

- Install and commission a photovoltaic (PV) System.

Lab Equipment:

- 1 – Inverter
- 1 – Digital AC/DC meter
- 1 – Clamp-on ammeter
- 1 – Infrared thermal device
- 1 – Torque wrench
- 1 – Tape Measure
- 1 – Ladder
- 1 - Various mounting system components for solar panel
- 2 – Batteries
- 1 – Charge Controller

Required Tools:

- 1- Tape Measure
- 1 – Hammer
- 1 – flat screwdriver
- 1 – Phillips screwdriver
- 1 – Pair of strippers
- 1 – Pair of diagonal cutters
- 1 – Utility Knife

Material: N/A

Safety (PPE):

- Safety glasses

Resources: N/A



Required Time: Two Days

Shop Maintenance:

- All work will cease 20 minutes prior to the end of class.
- All work areas must be cleaned.
- Tools and equipment must be cleaned and returned to the designated areas (cage, tool room, cabinets etc.)
- Any broken or missing tools must be reported immediately.
- Tools and equipment are students' responsibility

Procedures: *(Eye protection must always be worn, and power must be turned off until testing)*

1. Inspect purchased components.
2. Read the installation guides.
3. Devise a safety plan.
4. Set up your staging area and logistics.
5. Assemble the tools needed.
6. Measure out and install the proper mounts.
7. Install the racking and equipment grounding wire.
8. Install the microinverters (if applicable), then the modules.
9. Mount your central inverter (if using one), junction box and other electrical devices.
10. Install conduit.
11. Run the wire and make all the electrical connections.
12. Affix all required safety/danger labels.
13. Connect your system's monitoring gear (if any).
14. Conduct a pre-commission inspection.
15. With Instructor approval, test system.