



Advanced Photovoltaic Installer Course

Instructor: Dr. Gay E. Canough

1. LOGISTICS:

Location: SUNY Onondaga Community College (OCC) – Syracuse, NY

J. Stanley Coyne Building, Room 216

Time: 8:30 AM to 5 PM – Course will typically begin at 9:00 AM each day. We ask that you please arrive 30 minutes prior on the first day for registration.

See website for specific dates:

<http://www.esf.edu/outreach/pd/spare/2009/registration.htm>

2. COURSE MATERIAL:

Specially prepared course notes will be given out at the time of course.

3. WHAT TO BRING

- Calculator

- If you have it: Volt/Amp meter capable of measuring AC and DC voltage, AC and DC current of at least 20 Amps

5/6/08

Advanced Photovoltaic Systems

Prerequisites/ prior knowledge:

This class is geared toward PV installers and engineers who have experience with photovoltaic systems. We will not be covering the basics of PV. Come prepared to do some calculations. Knowledge of basic algebra and trigonometry is desirable. Come to class knowing how to operate your calculator.

Time	topic
DAY 1	
9 -9:30	Introduction: The Future of Solar Energy Formula review: Amps, Volts, Watts, PV sizing
9:30-11	Designing a system with battery backup
10:30 AM	Break
11-12:15	PV mounting systems: orienteering, calculating wind loading on PV array, calculating weight-loading on roofs, planning ballasted mounts, attached mounts, lag pullout force, lag strength. Practice calculations.
12:15 PM	Lunch
1 to 1:30	safety on roof-tops, safety when using cranes and lifts, using OSHA info
1:30 to 2:30	NEC fine points: grounding schemes, creating branches at the interconnection point, visiting some related Articles, signs, practice wire sizing.
2:30 PM	break
2:45 to 3:30	Field trip
3:30 to 5	Performance monitoring: Choosing and installing data loggers. Hands-on with Web-box, Campbell. Calculating system efficiency. Plotting data.
DAY 2	
9 -10	Permitting: what building departments want, dealing with NYC permitting, doing and submitting drawings. Practice: draw a 3-line diagram for an 8 kW PV system.
10-10:30	Filling out NYSERDA paperwork
10:30 AM	break
10:45-12:15	How to do a detailed shading analysis
12:15 PM	Lunch
1-1:30	Feeding 3-phase systems
1:30 to 3	troubleshooting: how to guide, practice problems, continuity checking, megaohm meter, IV curve measuring, total harmonic distortion measuring.
3	Q & A, topics of interest to the class