

## Eureka Power and Light

<http://eurekpowerandlight.com>

### Solar PV Workshop Schedule:

#### Monday:

- 8:00 Begin, introductions – what want out of class  
9:00 When Biomass Hits Wind Turbine  
10:30 Break
- 10:45 **Chapter 1: Intro to Photovoltaics**
- 12:00 Lunch
- 12:30 **Chapter 2: Solar cells and Modules**  
Exercise: Look at panel specifications on panel  
Exercise: Look at various types of panels  
Exercise: Look at bypass diodes on panel
- 2:00 Break
- 2:15 **Chapter 3: Types of PV Systems**  
Exercise: Calculate Load Analysis requirements for a system (worksheet)  
Exercise: Determine Maximum Power Draw
- 4:30 End for day

#### Tuesday

- 8:00 Review of previous day  
9:00 **Chapter 4: Basic Electrical Concepts**  
Exercise: (20 min) crimp wires together and connect  
Exercise: (1 hour) make a simple circuit (need wire, switches, fuse, lights, batteries)  
Exercise: Test it with the multimeter  
Exercise: Hook batteries together in series and in parallel – test  
Exercise – determine the proper configuration for three load requirements, series, parallel, and both  
Exercise: Continuity testing with Multimeter
- 10:30 Break
- 11:00 Continue Electrical  
Exercise: Calculate Voltage Drop
- 12:00 Lunch
- 1:00 **Chapter 5: Parts of a PV System**  
Exercise: Hook up a solar panel to it – see if it works with multimeter  
Exercise: Show various parts of the system

Exercise: Calculate wiring ampacity

4:30 End of day

### **Wednesday**

8:00 Review of previous day

9:00 **Chapter 6: Site Survey**

10:00 Break

Exercise: Working with the Solar Pathfinder – 3 locations

Exercise: Sun readings with Pyranometer

Exercise: PV Watts reading for site location (NREL site)

Exercise: Determine solar south

Exercise: Determine optimal angle, azimuth with PVWatts

1:00 Lunch

2:00 **Chapter 7: Designing the System**

Exercise: Calculate array size and configuration

Exercise: Online search of PV costs, cost out total system

Exercise: Assemble 3 panel system

Exercise: Design a system, placing components in proper order (get prices online)

Exercise: Put together solar generator

3:30 Exercise Field trip to Solar Array

4:30 End for Day

### **Thursday**

8:00 Review of previous day

9:00 **Chapter 7: Designing the System (continue)**

Exercise: Look up online for price of panels, inverter, etc

Exercise – select the proper size and type of wire for an installation

Exercise, determine battery requirements for stand-alone system

Exercise: Micro Inverter Videos

Exercise: Power Optimizers Videos

10:00 Break

10:30 **Chapter 8: Paperwork**

**Chapter 9: Installation**

Exercise: Climbing with safety equipment

Exercise: Examine roof and note where penetrations and mounts go

Exercise: Conduit bending  
Exercise: Installation Videos

1:00 Lunch  
2:00 **Chapter 9: Installation (continue)**  
3:30 Exercise: Design system start to finish  
4:30 End for Day

**Friday**

8:00 Review of previous day  
9:00 **Chapter 10: Testing and Troubleshooting**  
10:00 **Chapter 11: Commissioning**  
10:30 Break  
11:00 Review of questions  
12:00 Lunch  
1:00 Test  
3:00 Adjourn