



solarsourceinstitute
training for our future

Introduction to Solar Thermal Systems

1. Intro to Solar
2. Solar energy discussion
3. Safety Issues
 - a. Ladders
 - b. Roof work
 - c. Safety gear
 - d. Hot water concerns
4. Installation Issues
 - a. Roofing issues
 - b. Plumbing Runs
 - c. Water Damage
 - d. Water concerns
5. Solar Radiation
 - a. Sun Path discussion
 - b. Sun Orientation
 - c. Site surveys
 - d. Locating collectors
 - e. Shading issues
6. Components and Issues of Solar Hot Water
 - a. Component definitions
 - b. Thermal Collection & Collectors
 - c. Heat Transfer
 - d. Heat Storage
 - e. Freeze Protection

- f. System Integrity
 - g. Temperature rise
7. System Design
- a. Active vs Passive systems
 - b. Open-Loop - Closed-Loop systems
 - c. Passive Integrated Collectors
 - d. Thermosyphon Systems
 - e. Drindown systems
 - f. Glycol Closed-Loop systems
 - g. Drainback systems
 - h. Space Heating
8. Pool Heating
- a. Difference from Domestic Hot Water
 - b. Components
 - c. Systems
9. Wind and mounting Issues
10. Cost Benefits
- a. Payback / Rate of Return
 - b. Marketing Options
11. System Sizing
12. Open discussion
13. Hands on build

Course description is approximate. Exact material is not guaranteed and is flexible to the participants at the discretion of the instructor.