

## December 7-11, 2009

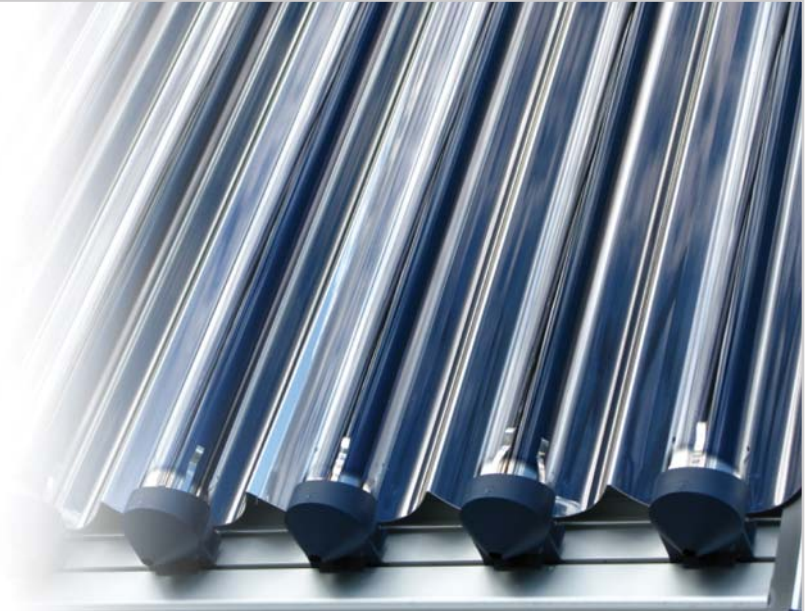
### 3 day course 8AM-5PM

THIS COURSE WILL BE HELD AT:

**Sonoma Mountain Village**  
1300 Valley House Drive, Suite 100  
Rohnert Park, CA 94928

707-795-3550

[www.sonomamountainvillage.com](http://www.sonomamountainvillage.com)



This three day course covers the essentials of residential solar system design, installation, troubleshooting and operation procedures for residential water and pool heating. The emphasis is on water heating. The course format includes an online prep course followed by three days of classroom instruction and hands on lab demonstrations.

### WHO SHOULD ATTEND

Contractors, Building Officials, Decision Makers, Government Organizations, Practitioners who install solar water heating systems and interested parties.

### YOUR INSTRUCTOR

Roger Coghlan is president of Sun Pirate, Inc., a California Solar Contracting business operating in the North San Francisco Bay Area since 1981. Roger Coghlan also holds a California contractors license in C-4, C-20 and C-46. He has a B.A. degree in Environmental Studies and Planning, with a certificate in Energy Management and Design from Sonoma State University. Roger possesses a California Vocational Education Teaching Credential. Roger is also recognized by IREC as an ISPQ Certified Instructor for Solar Hot Water Heating Courses.

### WHAT SHOULD YOU BRING?

Attendees should bring a notepad, a simple calculator and pen or pencil. Presentation, reference manual and additional hand-out material will be provided. Dress is casual as there will be outdoor activities.

### COST

**\$695**

### WHAT YOU WILL RECEIVE

1. Course Materials
2. Continental Breakfast
3. Lunch and Refreshments
4. Hands on Lab
5. NABCEP Continuing Education #1208-17 (22 Hours)



**Upon completion of the course, the student technician should be to:**

- Recognize the various types of residential solar hot water heating systems and components currently in use.
- Demonstrate safe working practices.
- Distinguish between solar system freeze protection options.
- Properly design and size residential solar hot water heating systems.
- Assist in the planning and installation of solar collectors and components.
- Understand the types of codes and standards that apply to the proper installation of solar heating systems.
- Understand the types of permits, warranties, and the customer relations required for completion of the overall solar project.
- Assist in the servicing of common solar assisted heating problems.

**General Information and Prerequisites**

Prerequisites for this course include a fundamental understanding of plumbing materials and methods (i.e., piping, soldering, etc.). Familiarity with basic electrical concepts is also useful (i.e. use of multimeters, etc.). Completion of all online prep course materials and quizzes.

**Training and How It Relates to Installer Certification**

Any testing or learning assessment associated with this course should not be confused with national testing and certification offered by NABCEP. This course does not provide any type of installer certification. In addition, the course material also strives to cover the various tasks listed in the national NABCEP Solar Thermal Task Analysis.

In accordance with Interstate Renewable Energy Council / IPSQ Standard 01021. Sun Pirate, Inc. is recognized by the Interstate Renewable Energy Council as an ISPQ Accredited Continuing Education Provider for Fundamentals of Solar Hot Water, and Photovoltaic System.

A certificate of completion of this course will be provided through CACTUS. Currently, this course offers 2 continuing education credits.

**TOPICS COVERED**

- Solar water heating system applications
- Basic solar fundamentals
- Site determination and selection
- System types
- Choosing a system type
- System sizing options
- System components
- System installation
- Structural considerations
- Commercial solar water heating systems
- System troubleshooting steps
- Solar pool heating
- Safety in the workplace
- System monitoring

**CONTACT**

**Derrick Chapman**  
 818-687-1323  
 dc@greencactus.org  
 www.greencactus.org

All registration fields must be filled in for registration to be considered complete

**REGISTRATION INFORMATION**

**FIRST NAME**

**LAST NAME**

**COMPANY / ORGANIZATION**

**ADDRESS**

**CITY STATE ZIP**

**PHONE**

**FAX**

**EMAIL ADDRESS**

All information is kept confidential

**PAYMENT METHOD**

**ONLINE PAYMENT**

CLICK BELOW TO PAY ONLINE.



**CHECK:**

MAKE CHECKS PAYABLE TO :

**CACTUS**

MAIL CHECKS TO:

**CACTUS**  
 88 South Third Street  
 San Jose, CA 95113

Refund Policy: All registration fees paid by the student shall be refunded if requested within three business days before the schedule training date. Refunds shall be returned within 30 days. Once the 3 business days have elapsed no refunds will be given.