

**Learning Objectives:**

- Refrigeration Cycle
- Safety Concerns
- Tools and Equipment
- System Component Maintenance
- Electrical Troubleshooting
- Refrigerants
- Hands-on Refrigerant System Applications
- Hands-on Troubleshooting the System
- Planned Maintenance Schedule

**Hands-on**

# Air Conditioning Maintenance and Troubleshooting

**Specifically  
Designed for  
HVAC Technicians  
Looking to Gain  
In-Depth Hands-On  
Understanding**



**Day 1 - Refrigeration, Concerns and  
Maintenance**

**Day 2 - Refrigerants, Applications and  
Troubleshooting**



**Reserve your space now! 1-877-978-7246**

Check us out online at **live.tpctraining.com** for a complete listing of all seminars coming to your area.

This seminar is also available as an **Online Simulcast** or can be brought **on-site to your facility.**

## SEMINAR OVERVIEW

This two-day course is designed for HVAC technicians looking to gain in-depth hands-on understanding of how to find and repair system problems safely. It is recommended that this class to be taken only after completion of the Understanding Air Conditioning & Refrigeration course.

Students in this course will be able to charge, evacuate, and troubleshoot an actual AC system as they would in the field. Proper maintenance and troubleshooting scenarios of multiple systems will be discussed to give the attendee the best understanding possible. Learning to use the proper tools is very important and service equipment such as vacuum pumps, manifold gauges, charging scales, multimeters, and more will be used in the hands-on applications. Learn from the experts on how to troubleshoot and repair an air conditioning system the fastest and most efficient way possible.

## WHAT YOU WILL TAKE HOME

- A laminated, full-color TPC Training Reference Guide detailing all the “must-know” information covered in the class. Keep this with you while on the job for immediate knowledge recall.
- Comprehensive classroom materials
- A Personalized Training Certificate with 0.8 TPC Training Continuing Education Units for each day attended, 1.6 for both days.
- All the information you need from asking our instructors specific questions about your own unique equipment or facility.

## CONTINUING EDUCATION

Upon completion of this seminar, the student will receive a Certification of Completion and .8 TPC Training CEUs per day attended. Most employers and many government agencies accept TPC Training CEUs to fulfill their continuing education requirements. If the student needs CEUs to renew a state license, please contact us at 303-867-5039 to ensure the state licensing board has approved the seminar. If we are currently not approved by your state licensing board, we are happy to begin the process as long as we receive your request at least one month before the training date.

**“Great Class, instructor was excellent.”**

*Jeremy B. - Maintenance Supervisor*

## DISCUSSION TOPICS

- Refrigeration Cycle
  - Typical System
  - Main Components
  - Refrigerant in Action
- Safety Concerns
  - Proper PPE
  - Proper Handling of Refrigerants
  - Electrical Safety
  - EPA
- Tools and Equipment
  - Manifold Gages
  - Vacuum Pump
  - Refrigerant Scales
  - Refrigerant Recovery Machine
  - Multimeter
  - Clamp-on Amp Meter
- System Component Maintenance
  - Evaporator
  - Condenser
  - Compressor
  - Metering Device
- Electrical Troubleshooting
  - Voltage Checks
  - Current Checks
  - Checking and Replacing Fuses
  - Troubleshooting Compressor
  - Proper Motor Winding Checks
- Refrigerants
  - Types
  - Applications
  - Pressures
  - Replacement Refrigerants
- Hands-on Refrigerant System Applications
  - Proper Use of Manifold Gauges
  - Evacuation of the System
  - “Pump Down”
  - Nitrogen Pressure Testing
  - Refrigerant Recovery
  - Leak Detection
  - Proper Charging of the System
- Hands-on Troubleshooting the System
  - Measuring Superheat
  - Measuring Sub-cooling
  - Effects of Overcharge
  - Effects of Undercharge
  - Importance of Proper Airflow
  - Troubleshooting Scenarios
  - Electrical Troubleshooting
- Planned Maintenance Schedule
  - What to Check
  - How Often

## SEMINAR FEE & AGENDA

This 2-day course is just \$1195 (Earn 1.6 CEUs)

7:30 am	Registration
8:00 am	Class Begins
12:00 -1:00 pm	Lunch (on your own)
4:30 pm	Class Ends

## NO RISK REGISTRATION & MONEY-BACK GUARANTEE

You can reserve your space in the class at any time and cancel without penalty. Cancellations made more than 14 days prior to the seminar may be refunded or rescheduled. Cancellations made within 14 days may be rescheduled for any future topic and/or date. If you're not satisfied with the course, we'll promptly refund your payment.

## JOIN OUR CLASSROOM SEMINARS FROM VIRTUALLY ANYWHERE

[live.tpctraining.com/simulcast](http://live.tpctraining.com/simulcast)

Our simulcast option allows students to connect to a live classroom seminar via a web link, with the ability to participate fully in the classroom dialogue, exercises, and Q&A. Online participants get all the benefits of the full classroom experience, plus the convenience of remote access.

### Features include

- Two full days of live, interactive instruction from a TPC Training instructor
- All classroom materials in PDF format
- Certificate of completion for 16 hours of live training
- Full technical support to ensure your online experience is a rewarding one

## BRING THE TRAINING ON-SITE TO YOUR FACILITY

[live.tpctraining.com/on-site](http://live.tpctraining.com/on-site)

Every public seminar class in our Course Catalog can be conducted on-site, with the same expert instructors. To arrange an on-site training, call or email us at on-site@tpctraining.com.

### Some Advantages of On-site Training

- Cost Savings — Save time and travel costs by keeping workers on-site
- Customized Content — Tailor the seminar to your facility and equipment
- Flexibility — Accommodate multiple shifts and different start and end times

