



EMERGING TECHNOLOGIES TRAINING ACADEMY

Instructor Led Trainings

Course Catalog



For information on scheduling classes for organization, contact Keith@ettacademy.com to schedule a meeting.

Instructor Led Training

Our instructor-led trainings are dynamic, goal-focused live webinars designed to keep you engaged. Each course is created and delivered by experts who tailor the experience to your specific objectives.

We simplify complex technical concepts into clear, easy-to-understand lessons, helping you confidently navigate new technologies and achieve your training goals.

Table of Contents

Air Handling Unit Fundamentals	2
Motors and Adjustable Speed Drives	2
Introduction to Demand Response	3
Electric Vehicles and Grid Stability	3
Heat Pump Fundamentals	4
Electric Vehicle Fundamentals	4
Measurement and Efficiency of HVAC Systems	5
Electrification Strategies for the Built Environment	5
Fundamentals of Hydronic Systems and Cooling Towers	6
Fundamentals of Economizers in the Commercial setting	6

Air Handling Unit Fundamentals

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

**Course Format:
Virtual Instructor-led Training**

Course Description: This introductory level two-part series explores types of air handlers, common air handler components and air handler systems. This course identifies energy savings opportunities through emerging technology, maintenance practices, and design features and is ideal for commercial HVAC technicians, energy consultants and building operators.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- Describe the role of air handling units in HVAC systems
- Identify common types of air handlers and their applications
- Recognize major air handler components and their functions
- Understand basic system operation and airflow concepts
- Identify opportunities to improve system efficiency

Motors and Adjustable Speed Drives

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

**Course Format:
Virtual Instructor-led Training**

Course Description: This introductory level two-part series dives into the fundamentals of motors and adjustable speed drives. The class explores various types of motors, key characteristics that contribute to system performance, and the principles behind motor operation. The course also covers common motor applications in commercial buildings, as well as focusing on energy efficiency, and equipment performance.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- What are ASDs and the evolution of the technology
- Anatomy and overview of different types of motors
- Energy savings and efficiency
- Real world application and research

Introduction to Demand Response

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

**Course Format:
Virtual Instructor-led Training**

Course Description: This course introduces demand side management strategies with a focused deep dive into demand response. Participants will explore how these strategies are applied across residential, commercial, and industrial settings. The course also examines the communication systems, configurations, and platforms used in automated demand response. In addition, it covers typical virtual node load configurations to support effective ADR implementation.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- Analyze different demand-side management strategies
- Understand their value across residential, commercial, and industrial sectors
- Define demand response and its applications and control methods
- Automated demand response communication, configuration, and platform

Electric Vehicles and Grid Stability

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

**Course Format:
Virtual Instructor-led Training**

Course Description: This course explores how the growth of electric vehicles impacts the power grid. It covers the full lifecycle of electric vehicle supply equipment (EVSE), from planning and installation to ongoing operation and maintenance. Participants will examine key factors such as electrical requirements, time-of-use rates, vehicle batteries, and emissions.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- Explore EV technology, policies, pledges, and emissions
- Examine electrification's impact on buildings and infrastructure
- Address planning, architecture, and grid considerations
- Review federal, state, and local incentives and rebates
- Vehicle to Grid and other applications

Heat Pump Fundamentals

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

Course Format:

Virtual Instructor-led Training

Course Description: This course explores heat pumps as an efficient solution for space heating, cooling, and domestic hot water in multifamily and commercial buildings. Participants will learn about the composition, operation, and evolving capabilities of heat pump technology. The course highlights real-world applications, successful implementations, and key lessons learned. It also examines the broader benefits of heat pumps, including energy efficiency, decarbonization, and grid stability.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- Learn the history and versatility of heat pumps in buildings
- Explore components, operation, and system configurations
- Analyze efficiency, grid impact, and benefits of heat pump implementation
- Review relevant codes, policies, and market trends

Electric Vehicle Fundamentals

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

Course Format:

Virtual Instructor-led Training

Course Description: This course provides a comprehensive introduction to electric vehicles, covering everything from vehicle types to charging strategies. Participants will explore essential tools and resources for purchasing, owning, and maintaining an EV. The course also examines the broader impacts of EV adoption, including effects on the power grid, energy use, and cost savings opportunities. Overall, it equips learners with the knowledge needed to make informed decisions about electric vehicle ownership.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- Learn the differences between electric and gas-powered vehicles
- Compare vehicle range and technologies
- Examine home and public charging options and installation considerations
- Learn how to optimize battery performance and reduce grid impact

Measurement and Efficiency of HVAC Systems

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

**Course Format:
Virtual Instructor-led Training**

Course Description: This introductory course provides a broad overview of HVAC systems and their key components. Topics include air handlers, air conditioning, chiller systems, evaporative cooling, and methods for testing system efficiency. Participants will gain a foundational understanding of how HVAC systems operate and how to evaluate their performance. The course is designed to support informed discussions around HVAC-related incentives for technicians, facility maintenance personnel, and utility staff.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- Learn how HVAC systems operate
- Explore the role of air handlers and air conditioning
- Understand evaporative cooling in HVAC systems
- Identify methods to assess system efficiency

Electrification Strategies for the Built Environment

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

**Course Format:
Virtual Instructor-led Training**

Course Description: This class provides an overview of building electrification in both residential and commercial settings. Participants will explore key pathways to electrification, including technologies like heat pumps and heat pump water heaters. The course also highlights the benefits and practical applications of these solutions. In addition, it examines common challenges to electrification and strategies to overcome them.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- Analyze energy use in buildings
- Explore heat pumps and heat pump water heaters for electrification
- Review electric cooking equipment in homes and businesses
- Identify challenges to electrification and solutions

Fundamentals of Hydronic Systems and Cooling Towers

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

Course Format:

Virtual Instructor-led Training

Course Description: This class provides discussed cooling towers and chilled water systems, covering key equipment, system components, and basic operating principles. Participants will explore core air-conditioning concepts, common system configurations, and ways to improve overall system efficiency. The course also addresses typical maintenance challenges and practical solutions. In addition, it introduces integrated demand side management strategies to help identify significant energy-saving opportunities in building operations.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- Learn the design and components of cooling towers
- Explore efficient plant operations and key specifications
- Examine the balance between tower size and energy savings
- Understand integrated demand side management (IDSM) strategies
- Review common maintenance challenges and solutions

Fundamentals of Economizers in the Commercial Setting

Course Length: 4 hrs. (2, 2hr sessions)

Prerequisites: None

Course Format:

Virtual Instructor-led Training

Course Description: This course is designed for contractors and facility managers who want to deepen their knowledge of economizers in HVAC systems and improve commercial maintenance practices. Participants will learn how economizers operate, understand their key components, and see how they integrate into HVAC systems. The course also covers essential maintenance strategies, applicable codes and regulations, and emerging technologies.

Audience: HVAC technicians, facility maintenance personnel, and utility staff.

Learning Objectives:

- IAQ management
- Understand economizer operation and its effect on energy use and load
- Identify major economizer components
- Explore the importance of regular maintenance for energy efficiency
- Review relevant codes and regulations for CQM and economizers

INSTRUCTORS FOR ETTA



Lester Terrance, HVAC/R

Lester Terrance has been active in the HVAC industry for more than 20 years, including 12 years in the United State Air Force. Lester spent 7 years serving as HVAC Field Supervisor at the US Department of State. He is a licensed Master HVAC in the states of Maryland and Virginia, an EPA Certified Universal Technician, and an Authorized Overseas Certified Technician (Multistack).



Floyd Spencer, Electrification

Floyd Spencer is the owner of Spencer Consulting, LLC. He has more than 25 years of experience in the training space and over that time has built ten (10) globally focused software and technology training programs from the ground up. He has authored more than 100 courses and has taught more than 5,000 people in over 30 countries. Floyd obtained a BSc in Geology in 1996 and in 2015 he completed his MSc in Human Resource Development (HRD) from the University of Houston. In 2016 he became a certified PROSCI Change Management Practitioner. Since 2015, Floyd has consulted with companies in sales enablement and learning & development, bringing a focus to the point where people, processes, and technology intersect. In 2023 Floyd launched My Next Chapter Career, a career coaching business focusing on new college graduates and clients who are seeking to change careers.



Evan Green, Commercial Heat Pump Water Heating

Evan is a research engineer with Ecotope, Inc., where he investigates ways to best measure and optimize CHPWH systems. He is also involved in working with governing bodies and laboratories to help inform codes and standards involving CHPWHs across the country. Prior to his work with Ecotope, Inc., Evan served as Applications Engineer at Colmac WaterHeat, where he consulted with plumbing engineers on the best ways to implement HPWHs into their designs, in addition to performing equipment startups and evaluations of completed domestic hot water systems.