



Daikin Learning

2024 Training Catalog

ADVANCING THE INDUSTRY



Daikin Learning delivers training essential to the success of your business and employees. Join us for top-quality, product-specific programs designed to provide proficiency in the operation, maintenance, and service of today's advanced HVAC technology.

IACET Authorized Provider

Daikin Applied is accredited by the International Association for Continuing Education and Training (IACET) and is authorized to issue the IACET CEU. We comply with IACET standards for courses awarding Continuing Education Units (CEUs).





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Welcome to Daikin Applied

Part of the largest HVAC company in the world

Daikin Applied delivers engineered, flexible solutions for commercial, industrial and institutional HVAC requirements. We offer reliable products, knowledgeable applications expertise and responsive support.

Daikin Applied is part of Daikin Industries, a Fortune 1000 company and the largest air conditioning, heating, ventilating and refrigeration company in the world. The company has earned a worldwide reputation for providing a full line of quality products and expertise to meet the demands of our customers.

Safety. Knowledge. Proficiency. Success.

Daikin Learning

Once you have made the investment in efficient, flexible Daikin HVAC equipment, taking care of your asset should be a top priority. Daikin Learning offers technical service training courses to learn first hand, from the manufacturer, what it takes to get the most out of your mechanical system.

Daikin Learning offers industry-leading training programs for:

- heating, ventilating, and air conditioning (HVAC) professionals
- owner/operators
- contractors and service technicians
- designers, distributors, and sales reps
- internal employees

Our goal is to provide product specific training and information necessary to establish a high level of proficiency in operating and servicing Daikin products.

Daikin Learning Mission Statement

As part of the Daikin Group, the Daikin Learning will drive business value by providing excellence in learning to our external and internal customers.

Enrollment, Registration, Payment

Enrollment

Payment, Scheduling, Registration, Logistics

First-registered. First-attend.

Class size is limited and is offered on a first-registered, first-attend basis.

Matching students to courses

Training is most effective when students are matched with the appropriate courses. Use the course content descriptions and learning outcomes to determine if the course matches the learning need.

How to Enroll

You can enroll by completing the print or electronic enrollment form.

- Complete a printed enrollment form and email to:
daikinlearning@daikinapplied.com
- Complete the online enrollment form at www.DaikinApplied.com and submit electronically.

Confirmation

Confirmation of enrollment

- Confirmation of enrollment will be sent to the student within five business days after receipt of a paid registration. In the unlikely instance that a confirmation is not received within the specified time, contact
- daikinlearning@daikinapplied.com, as we may not have received your application.
- When confirmation is received, verify that all information listed on your confirmation is correct. Should changes need to be made, contact
- daikinlearning@daikinapplied.com. **Registrations received without tuition paid in full, will not reserve your space.**
- If a class is full, we will contact the enrollee for standby or provide an alternate class date.

Payment

Payment must be received in advance of the training course.

Daikin Learning has transitioned to a credit card only payment option.

Payment will be required in advance to process your enrollment.

Enrollment, Training Materials, CEU's, DLI Safety Statement

Course Scheduling

See the schedule for your class for start and end times. Travel arrangements should be made to accommodate this schedule.

Cancellation Policy

Cancellations, substitutions, and schedule changes

Within 10 working days. Registrations cancelled within 10 working days prior to the course start date will be charged the full course fee.

Less than four weeks. Cancellations made less than four weeks prior to the course start date will be charged 50% of the course fee.

Substituting attendees. An alternate person may use a confirmed space without penalty and substitutions may be made up until the start of class. It is the student's responsibility to cancel hotel reservations.

Daikin Learning Institute reserves the right to make changes or alterations to the course content or schedule. Daikin Learning Institute is not responsible for airline fees associated with changing dates or cancellation of classes. In the unlikely event of a schedule change or cancellation, every effort will be made to notify all registrants in a timely manner.

Training Materials

Training materials included in price of course

Materials may include books, printed PowerPoints, flash drives and other resources. Please plan accordingly for transporting materials back to your location.

Continuing Education Units (CEU's)

Awarding CEUs.

Students will review, discuss and be tested on learning outcomes at the conclusion of the courses where CEUs are available. Successful completion requires a passing score of 80%. Students will earn CEUs based on the IACET and U.S. Department of Education task form defined CEU standard of measurement as 1 CEU = 10 contact hours.

Daikin Learning Safety Statement

The goal of Daikin Learning is to provide product specific training, safe work procedures, and the information needed to be proficient in operating and servicing Daikin products.

Knowledge and formal training of an applicable safe working culture, competency, practices and procedures for working in the HVAC field is the obligation of the employer and individual prior to attending Daikin Applied equipment training.

Hotel, Transportation, Logistics

Hotel Information

Hotel reservations are participant's responsibility.

Participants are responsible for making their own hotel arrangements.

Transportation

Travel to training center is participant's responsibility.

Participants are responsible for their own transportation to and from the training center. Hotels may not provide shuttle service, so check with them when making your reservations.

Factory Tours

Personal protection provided for tours.

Appropriate personal protection equipment will be provided if your course includes a facility tour.

Attendees are required to wear steel toe shoes during the plant tour, at all times when passing through the production areas, to and from the cafeteria through the plant and when participating in the hands-on teardown and assembly of the compressors. Safety glasses will be available for plant tours. Safety shoes are mandatory during compressor service courses.

Dress Code

Dress Code

Our dress code is business casual. No open toe shoes or shorts please. Safety shoes are required when entering the production facility and for specific courses as noted.

Safety

Your safety is a top priority to Daikin. As we continue to navigate the challenges presented by COVID-19, Daikin is carefully monitoring guidelines issued by the CDC, WHO, and local health department guidance, and will adjust our operations according to evolving government requirements. We have reduced our class size to provide for social distancing, face masks and hand sanitizer will be available, and you will be expected to wear face masks if required by local law or directives.

The 2022-2023 schedule for Daikin Learning may be adjusted or changed based on the current conditions, and participants will be contacted in a timely manner of any changes to their scheduled enrollments.

Off-Campus Training in your area

Off-Campus Training - Technical Service

Off-Campus training in your area

Daikin Learning offers commercial HVAC equipment operation and maintenance training programs at your location.

Note: Course scheduling based on trainer availability. Course fees based on number of attendees and travel required. A minimum number of participants is required. Please contact daikinlearning@daikinapplied.com for more information.

Off-campus training can be scheduled for these courses:

- Scroll Chiller Service & Troubleshooting
- Screw Chiller Maintenance, Operation and Service for Legacy equipment
- Air and Water-Cooled Screw Compressor Chiller Maintenance, Operation and Service for Pathfinder® equipment
- MicroTech III Controls Module 5 for Applied Air Systems (Modules 1-4 are online courses in the Daikin LMS and are required in advance to attend the one day instructor-led course)
- Rooftop Packaged Unit, Rebel and Self-Contained Unit Operation & Maintenance (MT III Modules 1-4 online and Module 5, instructor led, are prerequisites for the product training)
- MicroTech® 4 Module 5 (Modules 1-4 are online courses in the Daikin LMS and are required in advance to attend the one day instructor-led course).
- Rebel Applied (Modules 0-4 are online courses in the Daikin LMS and are required in advance to attend the instructor-led course)

Contact Daikin Learning to schedule off-campus training at your location at email: daikinlearning@daikinapplied.com

Visit the Daikin Applied website for current schedules: www.daikinapplied.com

Off-Campus Training Terms & Conditions

Off-Campus Training - Terms & Conditions

Off-Campus Training Terms & Conditions

Training at customer facilities complies with the following terms and conditions.

- **Recording of classes:** Audio or video recording of training sessions may be made only with Daikin's prior express written permission. Any permitted recordings are subject to these terms and conditions.
- **Content rights:** All materials relating to training remain the property of Daikin Applied. Copies or distribution of such material may be made only with Daikin's express prior written consent.
- **Payments:** All training sessions will be billed upon order. Payments will be subject to Daikin's standard terms and conditions. If payment is past due at the scheduled start date of the training, the instructor will perform training at the sole discretion of Daikin Applied.
- **Responsibilities:** The customer is responsible for facilities, meals and logistics related to the training unless prior arrangements have been made with Daikin Applied. Daikin Applied assumes no responsibility for these items. Daikin will provide training and materials for the number of registered participants. There will be an added charge for additional students, based on the original price per student.
- **Scheduling:** Training is by appointment only. Availability of instructors is at the sole discretion of Daikin Applied.
- **Content:** The purpose of training is to provide customers with information valuable to the operation or maintenance of their equipment. Daikin retains the right to determine appropriate content for the agreed-upon topic.

Warranty and Disclaimer

Training information will be materially similar to that used by Daikin Applied in training its own technicians. In the event it is not, Daikin will provide corrected, updated, or additional information, or, at its option, refund a pro rata portion of the price. THIS IS THE ONLY WARRANTY AND THE CUSTOMER'S ONLY REMEDY WITH REGARD TO TRAINING. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED. WITHOUT LIMITING THE FOREGOING, THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCES WILL DAIKIN BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Because of the variation among participants' experience, prior training, and learning abilities, Daikin does not warrant that any particular student will attain any particular level of expertise or competence and does not warrant any particular results of the training. The customer must satisfy itself as to the applicability and sufficiency of the training for its facility and resources. The customer will defend, indemnify, and hold Daikin harmless against any claim arising out of or related to training, and will waive subrogation of any such claim. Daikin may modify these terms and conditions at any time, in its sole discretion, and such modifications shall be effective immediately upon posting.

Meet our Instructors

Meet our Instructors

Tony Blake

Staunton, VA

Senior Manager of
Learning Operations

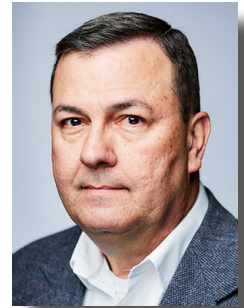
Senior Spanish
HVAC Instructor

With 30 years' with Daikin, Tony brings field experience to the Daikin Learning Team after serving the Richmond Service office. Prior to his service in Richmond, he was at the Daikin Chiller facility serving as senior member of the Technical Response Center, Engineering Test Labs and a Production employee. Bilingual (English and Spanish) and with chiller technical experience as well as practical experience in the field service and customer relations, Tony has been a big part in supporting training of Daikin Service technicians, Service Alliance Partners, customers and end users and all Daikin Applied Partners in Latin America.

Tony can be reached at:

anthony.blake@daikinapplied.com

Tony's experience includes providing support, commissioning, servicing, analyzing and maintaining Daikin Equipment.



Larry Heyer

Charlotte, NC

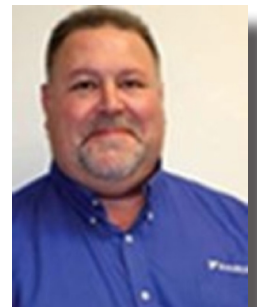
Senior HVAC Instructor

Larry started with Daikin Applied first as Southeast Regional Service Trainer before joining Daikin Learning. Worked in service operations, supervision, nuclear power operation and formal technical training as a naval instructor. Develops training programs and presentations.

Larry can be reached at:

larry.heyler@daikinapplied.com

Larry served with the U.S. Navy as an instructor and has over 30 years of experience in the industry in mechanical plant operation and maintenance.



Jeff Johnson

Plymouth, MN

Senior HVAC Instructor

Jeff is in his 10th year with Daikin. He came to us with over 31 years experience in the industry. During his time here Jeff has:

Trained over 300 Engineers and Technicians on HVAC design theory

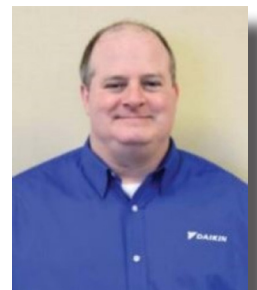
Educated over 120 Graduate Engineer Trainees on the Design Principles of HVAC, Refrigeration, Airside Design and Chiller Plants

Developed curriculum that makes complex theories easy to understand

Jeff can be reached at:

jeff.johnson@daikinapplied.com

Jeff studied marketing and sales at the University of Minnesota. Jeff is an active member of ASHRAE and a certified International Ground Source Heat Pump trainer.



Steve Selgestad

Staunton, VA

Learning Operations Manager &
Senior HVAC Instructor

Steve has over 41 years of experience in the HVAC Industry. He has been with Daikin Applied since 1993.

Steve began in the service department as Factory Service technician, then West Regional Trainer and then with DLI as an instructor and Learning Operations Manager

Steve can be reached at:

steven.selgestad@daikinapplied.com

Steve attended University of South Dakota at Springfield and received an Associate Degree in HVAC/R and Bachelor of Science in Technology.



Meet Our Instructors

Meet our Instructors (continued)

Chad McDearmon

Staunton, VA

HVAC Instructor

Chad has 30+ years of industry experience. He brings positive displacement expertise to DLI. He has focused on our Air-Cooled Chiller product line and has spent 6 1/2 years working with our Chiller Technical Response Center.

Chad can be reached at:

chad.mcdearmon@daikinapplied.com

Chad is a Virginia native and is working out of our Staunton training facility and traveling to support DLI HVAC instruction.

**Brad Hottel**

Staunton VA

Senior HVAC Instructor

Brad started with Daikin in 2011 as a Service Technician and was promoted to a Service Supervisor in Houston, TX and later transferred to Des Moines, IA. Brad will continue to live in the Des Moines area and travel to support DLI HVAC instruction.

Brad can be reached at:

brad.hottell@daikinapplied.com

Brad served in the United States Army, as a dismount team leader for the 25th infantry division while deployed in Talafar Iraq. He earned an Associate of Applied Sciences in HVAC/R from Southeast Community College

**Donald Hogue**

Staunton, VA

Senior HVAC Instructor

Don joined Daikin Learning in 2019 and has been with the company 6 years. Don has 32 years of industrial electrical field experience, 28 years working within the HVAC industry.

Don can be reached at:

donald.hogue@daikinapplied.com

Don attended Vocation School in 1987-88 for Electrical

**Victor Justavino**

Staunton, VA

Senior HVAC Instructor

Victor joined Daikin Learning in July 2023 and brings a wealth of knowledge and industry experience to the team and is Bilingual (Spanish and English). Continuing his education and professional training, he has attended many Daikin chiller & VRV product courses.

Victor can be reached at:

victor.justavino@daikinapplied.com

Bachelor of Science in Electro-Mechanical Engineering - Technological University of Panama - Panama



Meet Our Instructors

Meet our Instructors (continued)

Brandon Kepple

Staunton, VA
Senior HVAC Instructor

Brandon joined Daikin Learning in May 2023 as a technical instructor. He previously was employed as a service technician with Daikin Service since 2011 and has worked in the field since 1997. Previously, Brandon was a 17-year member of Barstow Fire Protection District and served as Assistant Chief and training officer.

Brandon can be reached at:

brandon.kepple@daikinapplied.com

Brandon has extensive Daikin chiller training and has attended many industry courses. He earned HVACR Tech II Degree at Universal Technical Institute in 1997 and still currently holds a state of Iowa Master HVACR license.



Robert Noll

Staunton, VA
Senior HVAC Instructor

Robert joined Daikin Learning in July 2023 as Senior Tech Instructor and was previously employed with Daikin Service since 2016 as a service technician. He has 35 years with HVAC hands-on field and lab experience.

Robert (Bob) can be reached at:

robert.noll@daikinapplied.com

Robert has Universal EPA and OSHA 10 certifications. He has been a Texas licensed HVAC contractor Since 2003 (TA-CLB23190E)



Nathan Oliver

Staunton, VA
Senior HVAC Instructor - Sales

Nate is new to Daikin Applied Learning and brings over 12 years of HVAC Sales Engineer and territory management experience to Daikin. He brings a background not only in HVAC but in building systems and energy management and has a CEM (Certified Energy Manager) credential from AEE. Nate's experience includes sales operation and enablement and crafting rep training programs in his various roles.

Nathan can be reached at:

nathan.oliver@daikinapplied.com

on University in ISAT with a focus on energy, a mechanical engineering-based program, and his MBA in Innovation also at JMU.



Meet Our Instructors

Meet our Instructors (continued)

Kevin Lynch

Staunton, VA

Senior HVAC Instructor - Sales

Kevin joined Daikin Applied in 2011. His previous experience includes various roles in the industrial HVAC industry. He started as a service technician in 1980 and has served as a service supervisor, project manager and service manager. During his time with Daikin, he managed turnkey projects from \$200K - \$9M with the Tampa Service Sales team as service sales estimator and helped SSR's with CPQ training.

Kevin can be reached at:

kevin.lynch@daikinapplied.com

Kevin studied at Johnson & Wales University, Providence, RI and has earned his AS in Computer Applications and BS in Information Science.



Robert Polk

Staunton, VA

Adjunct HVAC Instructor

Robert has 36 years' experience in the field of HVAC, 6 years with Daikin Applied as a service technician and 14 years residential & Rooftop units.

Robert can be reached at:

robert.polk@daikinapplied.com

Robert graduated from Crossland Vocation High School



HVAC Systems Training

HVAC Systems Training

The HVAC Systems Program combines the knowledge and experience of Daikin's Principles of HVAC, Principles of Air Systems Design, Principles of Refrigeration, Principles of Chiller Plant Design, and Building Systems classes into one comprehensive program that uses a blended learning approach. Learners who enroll in HVAC Systems will get the experience of Daikin's instructors through virtual sessions, while gaining the flexibility of self-directed online learning content that can be completed as their schedule allows, within the allotted time frame.

This portfolio will equip our sales and service professionals with industry knowledge of HVAC systems in order to:

- Explain how HVAC Systems work
- Speak knowledgeably about fundamentals when meeting with customers, contractors, and design engineers
- Select the best solution for a given need (sales)
- Identify problems with HVAC systems (service)

HVAC Systems will cover 6 Modules:

	Orientation*	An Orientation video is each module curriculum and will provide the learner with detailed instructions to successfully proceed through the learning pathway. This needs completed just once.
Module 1	Foundations*	HVAC systems, thermodynamics, psychrometrics, intro to plans, hydronics and pumps
Module 2	Refrigeration	Refrigeration cycle and components, energy recovery
Module 3	Electric	Electrical basics, motors & VFD's controls concepts & components, schematics
Module 4	Airside	Basic understanding of fans, coils, air handling units, rooftop units, controls for air handler units and air distribution.
Module 5	Chillers	Chiller basics & types, constant flow systems, variable flow systems, Low Delta T, condenser-water systems, cooling towers, and controls
Module 6	Chiller Plant Design	Chiller Plant Variations, Optimization, Energy Recovery, Water-Side-Free Cooling, Thermal Storage Systems, Process Cooling, District Cooling

*** Orientation video and Module 1 - Foundations are prerequisites to attend Modules 2-6**

*** Modules 2 - 6 may be attended in any order.**

Note: CEUs will be offered for this program by module. To qualify for CEUs, the participant must notify DLI of their interest at the beginning of the program, attend Virtual Instructor Led Training (VILT), complete all self-directed activities and pass the tests with a minimum of 80%.

To receive a certificate of completion, the participant must pass all tests with a minimum of 80%.

HVAC Systems Training Schedule

2024 Training Schedule - HVAC Systems

Module	Location & Approximate Time	Tuition	Start Date	Finish Date
Module 01 Foundations	Online 8 hrs	\$300.00	8/19/24	8/30/24
Module 02 Refrigeration	Online 6 hrs	\$300.00	9/9/24	9/20/24
Module 03 Electric	Online 10 hrs	\$300.00	9/30/24	10/11/24
Module 04 Airside	Online 7 hrs	\$300.00	3/11/24	3/22/24
			10/21/24	11/1/24
Module 05 Chillers	Online 10 hrs	\$300.00	4/1/24	4/12/24
			11/11/24	11/22/24
Module 06 Chiller Plant Design	Online 8 hrs	\$300.00	4/22/24	5/3/24
			12/2/24	12/13/24

HVAC Systems Performance Outcomes

This portfolio will equip our sales and service professionals with industry knowledge of HVAC systems in order to:

- Explain how HVAC Systems work
- Speak knowledgeably about fundamentals when meeting with customers, contractors, and design engineers
- Select the best solution for a given need (sales)
- Identify problems with HVAC systems (service)

HVAC Systems Training

MODULE 1: FOUNDATIONS

In this module, learners will be introduced to HVAC systems, thermodynamics, psychrometrics, intro to plans, hydronics and pumps. This module consists of one virtual instructor-led training (VILT) sessions (HVAC Systems Overview) an Orientation video and self-directed on-line content.

HVAC SYSTEMS OVERVIEW (VILT)

Learning Objectives:

- Identify each type of HVAC equipment (water-cooled chiller, air-cooled chiller, water-source heat pump, rooftop unit, air handler unit, air terminal system, and variable refrigerant volume)
- Explain how each type of equipment works in a system

THERMODYNAMICS (self-directed online content)

Learning Objectives:

- Describe the differences between latent and sensible heat
- Describe each type of heat transfer (radiation, conduction, and convection)
- Provide examples of each type of heat transfer
- Calculate heat transfer to size a coil (sales) or to check coil efficiency (service)
- Explain the relationship between pressure and temperature

Intro to Plans (VILT) (self-directed online content)

Learning Objectives:

- Read the sequence order of a plan to use in the field
- Identify the most common HVAC-associated symbols on a plan
- Identify the scale of a given plan
- Use the support column grid to successfully navigate a plan
- Identify the correct sequence of key components
- Explain how the key components fit into piping, duct work, and plumbing

PSYCHROMETRICS (self-directed online content)

Learning Objectives:

- Read a psychrometric chart and locate a state point on the chart
- Use a psychrometric chart to calculate the state point between outside air and return air in order to determine the correct damper positioning
- Explain the relationship between air flow and humidity, and the impact equipment could have on each
- Plot key types of HVAC equipment on a psychrometric chart
- Explain how to remove latent or sensible energy by confirming or sizing a refrigerant coil

Hydronics and Pumps (self-directed online content)

Learning Objectives:

- Identify key components of a hydronic system
- Accurately read a pump curve
- Identify causes for cavitation in a pump
- Convert measurements from Pounds per Square Inch Gauge (PSIG) to Foot of Head (FtHd)
- Calculate an equivalent piping length

HVAC Systems Training

HVAC Systems

MODULE 2: REFRIGERATION

In this module, learners will examine the refrigeration cycle, the components of a refrigeration cycle, and energy recovery for refrigeration. This module consists of one virtual instructor-led training (VILT) session and self-directed on-line content.

REFRIGERATION CYCLE (self-directed online content)

Learning Objectives:

- Explain the purpose of the refrigeration cycle within HVAC system
- Explain latent, sensible, and specific heat within the refrigeration cycle
- Identify the areas of the refrigeration cycle where specific types of heat are transferred
- Identify different applications where the refrigeration cycle is used

REFRIGERATION CYCLE COMPONENTS (VILT)

Learning Objectives:

- Identify the primary components of the refrigeration cycle
- Explain the purpose of each primary component of the refrigeration cycle
- Identify the secondary components of the refrigeration cycle
- Explain the correct sequence of the refrigeration cycle components
- Explain the refrigerant state in each stage of the refrigeration cycle

ENERGY RECOVERY FOR REFRIGERATION (self-directed online content)

Learning Objectives:

- Explain energy recovery applications that affect refrigeration
- Explain environmental conditions where energy recovery is the best application
- Identify energy recovery applications by their piping layout

MODULE 3: ELECTRIC

In this module, learners will develop knowledge of electrical basics, motors and VFDs, controls concepts for HVAC, controls components, and electrical schematics. This module consists of one virtual instructor-led training (VILT) session and self-directed on-line content.

ELECTRICAL BASICS (self-directed online content)

Learning Objectives:

- Explain how power distribution works
- Explain how electricity flows
- Use Ohm's Law to calculate current, voltage, and resistance
- Explain the relationship between electricity and magnetism
- Explain how the basic components in electrical equipment work (switches, fuses, contactors, relays, capacitors, resistors/resistance/electrical loads, diodes, transformers, and thermostats)

MOTORS AND VFDS (VILT)

Learning Objectives:

- Explain how a motor operates
- Identify the HVAC types of motor designs and configurations
- Explain how the types of motor starters function
- Explain power factor as it applies to motors

HVAC Systems Training

HVAC Systems

MODULE 3: ELECTRIC *(continued)*

CONTROLS CONCEPTS FOR HVAC (self-directed online content)

Learning Objectives:

- Describe the three levels of controls for HVAC (unit, system, BMS/BAS)
- Explain how key terminology is used in the control process
- Explain the basic control strategies
- Explain the four different types of control point
- Describe the four types of modulating controls

CONTROLS COMPONENTS (self-directed online content)

Learning Objectives:

- Describe the types of control sensors
- Describe the types of control dampers
- Describe the types of valves

ELECTRICAL SCHEMATICS (self-directed online content)

Learning Objectives:

- Identify electrical terms, acronyms, and symbols
- Explain how to read an electrical schematic
- Identify practical approaches to problem solving when working with an electrical system

MODULE 4: AIRSIDE

In this module, learners will gain a basic understanding of coils, fans, air handling units, air distribution, rooftop units, and controls for air handler units. This module consists of one virtual instructor-led training (VILT) session and self-directed on-line content.

FANS (self-directed online content)

Learning Objectives:

- Use fan curves and fan laws to determine the most useful fan type for a specific application
- Identify fan type by blade configuration
- Determine the safe operation range of a fan type
- Explain fan laws and why they are used

COILS (self-directed online content)

Learning Objectives:

- Describe different coil types
- Explain the different uses and benefits of each coil type

AIR HANDLER UNITS (self-directed online content)

Learning Objectives:

- Identify the major components in an air handler unit
- Explain the function of the major components in an air handler unit under varying conditions
- Explain the importance of casing design in air handler unit performance

HVAC Systems Training

HVAC Systems

MODULE 4: AIRSIDE *(continued)*

ROOFTOP UNITS (self-directed online content)

Learning Objectives:

- Identify the major components in a rooftop unit
- Explain the function of the major components in a rooftop unit
- Describe the differences between a DOAS and a standard rooftop unit

CONTROLS FOR AIR HANDLER UNITS (self-directed online content)

Learning Objectives:

- Describe control strategies for air handler units
- Explain the interaction of AHU and RTU controls to include air flow, enthalpy, temperature, and pressure

AIR DISTRIBUTION (VILT)

Learning Objectives:

- Identify different methods of air distribution
- Explain how each method of air distribution works

MODULE 5: CHILLERS

In this module, participants begin by learning chiller basics and chiller types, then move on to learn constant flow systems, variable flow systems, Low Delta T, condenser water systems and cooling towers, and controls. This module consists of one virtual instructor-led training (VILT) session and self-directed on-line content.

CHILLER BASICS (self-directed online content)

Learning Objectives:

- Explain lift, or pressure ratio
- Explain the Carnot Cycle and Coefficient of Performance (COP)
- Describe condenser water relief using AHRI standards

CHILLER TYPES (VILT)

Learning Objectives:

- Demonstrate the ability to knowledgeably discuss chiller basics
- Explain how an air-cooled chiller works
- Explain how a water-cooled chiller works
- Explain the basics of an absorption chiller
- Knowledgeably discuss relevant AHRI standards

CONSTANT FLOW SYSTEMS (self-directed online content)

Learning Objectives:

- Explain how constant flow systems function in single chiller plants, parallel chiller plants, and series chillers
- Explain series counter flow

HVAC Systems Training

MODULE 5: CHILLERS *(continued)*

VARIABLE FLOW SYSTEMS (self-directed online content)

Learning Objectives:

- Describe how a primary-secondary water system works
- Explain a variable primary flow system
- Explain pump control related to variable flow systems
- Explain chiller staging

LOW DELTA T (self-directed online content)

Learning Objectives:

- Explain Low Delta T and Low Delta T Syndrome
- Determine possible causes of Low Delta T

CONDENSER WATER SYSTEMS AND COOLING TOWERS (self-directed online content)

Learning Objectives:

- Demonstrate an understanding of Cooling Technology Institute (CTI) standards for cooling towers
- Describe approach and range of a cooling tower
- Explain Total Dissolved Solids (TDS) and the importance of make-up water
- Distinguish different configurations of cooling towers

CONTROLS (self-directed online content)

Learning Objectives:

- Describe the general control sequence of operation for a chiller
- Explain how leaving chilled water reset works
- Identify external equipment that can be controlled with Daikin chillers
- Explain how system design and control sequence can help with Low Delta T Syndrome and compressor short cycling
- Describe the basic sequence of operation for primary-secondary flow and variable primary flow

Module 6: CHILLER PLANT DESIGN

In this module, participants begin by learning chiller plant variations before they go on to look more closely at chiller plant optimization, energy recovery, water side free cooling, thermal storage, process cooling, and district cooling. This module consists of one virtual instructor-led training (VILT) and self-directed on-line content.

CHILLER PLANT VARIATIONS (VILT)

Learning Objectives:

- Discuss key considerations for alternative fuels in chiller plant design
- Explain the requirements for a hybrid plant design
- Describe methods of preferential chiller loading
- Explain the advantage of tertiary piping in specific applications
- Describe the impact of tall buildings on system design

HVAC Systems Training

Module 6: CHILLER PLANT DESIGN *(continued)*

CHILLER PLANT OPTIMIZATION (self-directed online content)

Learning Objectives:

- Explain load profile and why it is important
- Describe key design considerations
- Recommend design conditions for optimizing a chiller plant
- Describe various optimization tactics
- Explain chiller staging in chiller plant optimization

ENERGY RECOVERY (self-directed online content)

Learning Objectives:

- Explain energy recovery using a split condenser unit
- Explain why templifiers are used and the advantages and disadvantages of using templifiers in energy recovery
- Explain how system design and control affect energy recovery

WATER-SIDE-FREE COOLING (self-directed online content)

Learning Objectives:

- Explain the advantages and disadvantages of different applications of water-side-free cooling
- Explain cooling tower sizing
- Describe the sequence of operation for water-side-free cooling

THERMAL STORAGE IN CHW SYSTEMS (self-directed online content)

Learning Objectives:

- Explain load profile (run time) related to thermal storage
- Explain the difference between full and partial load storage
- Describe the differences between thermal storage technologies
 - sensible storage
 - latent storage

PROCESS COOLING (self-directed online content)

Learning Objectives:

- Explain the difference between process cooling and comfort cooling
- Explain the impact of chiller selection for process cooling
- Describe different types of process cooling
- Describe operating conditions for process cooling

DISTRICT COOLING (self-directed online content)

Learning Objectives:

- Describe chiller plant design considerations related to district cooling
- Explain chiller staging as it relates to district cooling
- Describe the advantages of series counter flow chillers
- Explain the advantages of changing a primary secondary piping layout to a distributed piping system
- Explain the benefits of district cooling

2024 Daikin Service Training Schedule - Applied Air & ATS

Applied Air Course Prerequisites

In-person (Instructor Led) Training	Prerequisites
MicroTech® III Module 5: Service & Troubleshooting	Principles of MicroTech® III (online)
Rebel Module 5: Service & Troubleshooting	Principles of Rebel Service
Rebel, Rooftop, Self-Contained	MicroTech® III Module 5: Service & Troubleshooting
MicroTech® 4 Module 5: Service & Troubleshooting	Principles of MicroTech® 4 (online)
Rebel Applied® Module 5: Service & Troubleshooting	Principles of Rebel® Applied (online)
<p>* Prerequisites are also noted on these course description pages.</p> <p>* Online Modules have an annual license and available online for one year.</p>	

2024 Daikin Service Training Schedule - Applied Air & ATS

2024 Training Schedule - Applied Air & ATS

Course Title	Models	Tuition	Length	Location	2023-2024 Dates
Principles of MicroTech® III	MicroTech® III	\$200.00	Annual	Online	One Year
MicroTech® III Module 5: Service & Troubleshooting	MicroTech® III	\$750.00	1 day	Plymouth, MN Plymouth, MN	Mar 19, 2024 Apr 9, 2024
Principles of Rebel® Service	DPS	\$200.00	Annual	Online	One Year
Rebel Service Module 5: Service & Troubleshooting	DPS	\$750.00	1 day	Plymouth, MN Plymouth, MN Plymouth, MN Plymouth, MN	Mar 21, 2024 Apr 10, 2024 Aug 28, 2024 Sep 27, 2024
Principles of Rooftop Service <i>In redesign</i>		\$200.00	Annual	Online	One Year
Rooftop Service <i>In redesign</i>	Maverick® Roofpak®	\$750.00	1 day	Plymouth, MN Plymouth, MN	Mar 20, 2024 Sep 26, 2024
Principles of MicroTech® 4	MicroTech® 4	\$200.00	Annual	Online	One Year
MicroTech® 4 Module 5: Service & Troubleshooting	MicroTech® 4	\$750.00	1 day	Plymouth, MN Plymouth, MN Plymouth, MN	Apr 11, 2024 Aug 27, 2024 Sep 24, 2024
Principles of Rebel® Applied	DPSA	\$200.00	Annual	Online	One Year
Rebel Applied® Module 5: Service & Troubleshooting	DPSA	\$750.00	1 day	Plymouth, MN Plymouth, MN Plymouth, MN	Apr 12, 2024 Aug 29, 2024 Sep 25, 2024

Applied Air Training

Principles of MicroTech® III

Course Name

Principles of MicroTech III Online Curriculum

Course Description

Principles of MicroTech III Curriculum provides access to the Daikin Applied Learning Management System (LMS) to complete Modules 1-4.

Principles of MicroTech III online curriculum is required prior to attending MicroTech III Module 5: Service & Troubleshooting.

Approximate time to complete this curriculum is 8 hours. It contains the following Modules.

Learning Outcomes

Module 1 - Fundamentals:

- Overview of MT III and navigation fundamentals
- Accessing MicroTech Controller Resources
- Terminology review, various unit operational states, and use of wiring diagrams
- Knowledge assessment

Module 2 - Temporary Operations:

- Installation of field devices and temporary controller setups during project transition
- Knowledge Assessment

Module 3 - Startup and Commissioning:

- MicroTech Controller startup and commissioning fundamental settings for all unit modes of operation per *Daikin Quick Start Guides*
- Knowledge Assessment

Module 4 - Service with the MicroTech III Controller:

- Controller service functionality to include: software update, unit configuration changes, trending setup, troubleshooting with service menu and interface with building automation systems
- Knowledge Assessment

Technical Support

Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

MicroTech® III Module 5: Service & Troubleshooting

Course Name	MicroTech® III Module 5: Service & Troubleshooting
Course Description	MicroTech III Service & Troubleshooting Course is structured to provide classroom instruction, demonstrations and exercises designed to familiarize the student with components, features, programming, set-up and service of Daikin MicroTech III controllers. The session is one-day instructor-led training focused on the application of skills learned via Principles of MicroTech eLearning curriculum. Registration includes access to the Daikin Applied Learning Management System (LMS) to complete Principles of MicroTech III/
Who Should Attend	Maintenance and service technicians
Prerequisites	<p><i>Principles of MicroTech III online curriculum is a prerequisite to attend MicroTech III Module 5 Service & Troubleshooting.</i></p> <p><i>MicroTech® III Module 5: Service & Troubleshooting for Applied Air Products is required prior to attending the following courses: Rooftop, Rebel® Rooftop, and Self-Contained Service.</i></p>
Learning Outcomes	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Demonstrate foundational knowledge required to operate the Daikin MicroTech® III controller • Complete the steps required to start-up and commission a heating and/or cooling unit using the MicroTech III controller • Troubleshoot Daikin AAH units utilizing the MicroTech III controller to address issues such as: <ul style="list-style-type: none"> • Inadequate heating and cooling in a building • Humidity in a building that is heated and/or cooled with a Daikin unit • Loss of power to the Daikin unit • Alarms active on the Daikin unit • Noise from the Daikin unit • Loss of communication between Daikin unit and the MT III controller • Incorrect pressurization in an office building that is heated and/or cooled with a Daikin unit
Technical Support	Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

Principles of Rebel® Service

Course Name

Principles of Rebel® Service Online Curriculum

Course Description

Learn the product features, installation requirements, and service procedures for the Daikin Rebel units in this online curriculum.

Principles of Rebel Service online curriculum is a prerequisite to attend Rebel Service Module 5 Service & Troubleshooting.

Learning Outcomes

Module 0 Basic HVAC

- Overview of foundational HVAC concepts

Module 1 Rebel Fundamentals

- Foundational design, options and functions of Rebel: mechanical, structural, electrical systems
- Knowledge Assessment

Module 2 Rebel Installation

- Step-by-step summary of pre and post installation procedures
- Knowledge Assessment

Module 3 Rebel Service Startup and Commissioning

- Overview of Rebel pre and post startup tasks by unit function
- Setup and operation of Rebel variable frequency drives
- Use of MicroTech III menus specific to Rebel and their operation
- Knowledge Assessment

Module 4 Rebel Service Maintenance & Repair

- Review of common repairs and preventative maintenance procedures
- Knowledge Assessment

Technical Support

Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

Rebel® Service Module 5: Service & Troubleshooting

Course Name**Rebel® Service Module 5: Service & Troubleshooting****Course Description**

Learn the product features, installation requirements, and service procedures for the Daikin Rebel units, including Rebel Inverter technology.

Who Should Attend

Maintenance and service technicians

Prerequisites

Students should have an understanding of the refrigeration cycle, basic electronics, and simple control circuits. The course will use these basic concepts to develop an understanding of the Daikin Rebel products. We recommend that students review **IM-1125** and **OM-1141** prior to the start of class. Visit www.daikinapplied.com and enter **1125** and **1141** in the search field.

Principles of Rebel Service online curriculum is a prerequisite to attend Rebel Module 5 Service & Troubleshooting.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Perform the appropriate steps to resolve service and troubleshoot operational Rebel issues

Technical Support

Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

Rooftop Service

Course Name**Rooftop Service (Maverick® and Roofpack®)****Course Description**

Identify product features, installation, operation, maintenance and service procedures for Daikin Applied Rooftops (RPS & MPS units).

Who Should Attend

Maintenance and service technicians

Prerequisites

Students should have an understanding of the refrigeration cycle, basic electronics, and simple control circuits. The course will use these basic concepts to develop an understanding of the Daikin Rooftop products. We recommend that students review **IM-893** and **IM-1058** prior to the start of class. Visit www.daikinapplied.com and enter **893** and **1058** in the search field.

MicroTech III (Modules 1 - 5) and Rebel Service (Modules 0-5) for Applied Air Products are required prior to attending Rooftop Service.

This course is currently in redesign and will soon be blended learning with an online curriculum and 1 day in-person training.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Install and commission Daikin Rooftop units using standard methods
- Identify and distinguish the purpose and function of Rooftop components
- Describe unit sequence of operation in all modes and states
- Navigate & modify adjustment settings and parameters in MicroTech III (MT III) controller and operate MT III to meet job specifications
- Utilize electrical meters, wiring diagrams, and MT III controller for unit diagnostics and troubleshooting
- Demonstrate preparation, set-up and operation for Daikin Rooftop gas, electric and hot-water heat
- Prepare and report accurate commissioning data on Daikin Warranty Registration Form
- Perform proper preventative maintenance per the Daikin Operations Manual

Technical Support

Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

Principles of MicroTech® 4

Course Name	Principles of MicroTech® 4 Online Curriculum
Course Description	Principles of MicroTech 4 online curriculum Modules 1-4 provides access to the Daikin Applied Learning Management System (LMS) to complete Modules 1-4.
Prerequisites	<i>Principles of MicroTech 4 online curriculum is required prior to attending MicroTech 4 Module 5 Service & Troubleshooting.</i>
Learning Outcomes	<p>Module 1 - Fundamentals:</p> <ul style="list-style-type: none">• Overview of MicroTech 4 and navigation fundamentals• Accessing MicroTech Controller Resources• Terminology review, various unit operational states, and use of wiring diagrams• Knowledge assessment <p>Module 2 - Installation:</p> <ul style="list-style-type: none">• Installation of field devices and temporary controller setups during project transition• Knowledge Assessment <p>Module 3 - Startup and Commissioning:</p> <ul style="list-style-type: none">• MicroTech Controller startup and commissioning fundamental settings for all unit modes of operation per <i>Daikin Quick Start Guides</i>• Knowledge Assessment <p>Module 4 - Service and Networking:</p> <ul style="list-style-type: none">• Controller service functionality to include: software update, unit configuration changes, trending setup, troubleshooting with service menu and interface with building automation systems• Knowledge Assessment
Technical Support	Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

MicroTech® 4 Service & Troubleshooting

Course Name	MicroTech® 4 Service & Troubleshooting
Course Description	MicroTech 4 Module 5 Service & Troubleshooting Course features installation, operation, maintenance and service procedures for the Daikin Applied Rebel Applied products. The session is a one-day, instructor-led training focused on the application of skills learned via Principles of MicroTech 4 online modules.
Prerequisites	<i>Principles of MicroTech 4 online curriculum is a prerequisite to attend MicroTech 4 Module 5: Service & Troubleshooting.</i>
Learning Outcomes	<ul style="list-style-type: none"> • Identify the purpose and key parts of the MicroTech 4 controller • Navigate the MicroTech 4 controller using the display buttons and navigation wheel • Identify the type of information being provided on the MicroTech 4 controller • Recognize the different access levels • Navigate to the Daikin Applied website, and locate and save the appropriate resource based on product need • Use the features of a PDF document to change the zoom level, conduct a search, save, and print on laptop and phone • Explain key terminology associated with the MicroTech 4 controller and applicable units • Identify the sequence of operating states for a unit and describe the activity that occurs during each operating state • Utilize a wiring diagram to replace or add components or for troubleshooting purposes • Locate and use the appropriate unit-specific wiring diagram • Utilize wiring diagram index numbers to locate key information
Technical Support	Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

Principles of Rebel Applied™

Course Name	Principles of Rebel Applied™ Online Curriculum
Course Description	Learn the product features, installation requirements, and service procedures for the Daikin Rebel Applied units in this online curriculum.
Prerequisites	<i>Principles of Rebel Applied online curriculum is a prerequisite to attend Rebel Applied Module 5 Service & Troubleshooting.</i>
Learning Outcomes	<p>Module 0 Basic HVAC</p> <ul style="list-style-type: none">• Overview of foundational HVAC concepts <p>Module 1 Rebel Applied Fundamentals</p> <ul style="list-style-type: none">• Foundational design, options and functions of Rebel Applied: mechanical, structural, electrical systems• Knowledge Assessment <p>Module 2 Rebel Applied Installation</p> <ul style="list-style-type: none">• Step-by-step summary of pre and post installation procedures• Knowledge Assessment <p>Module 3 Rebel Applied Startup and Commissioning</p> <ul style="list-style-type: none">• Overview of Rebel Applied pre and post startup tasks by unit function• Use of MicroTech III menus specific to Rebel Applied and their operation• Step by step startup procedures for: compressors, fans, various heat types in both manual and normal mode• Knowledge Assessment <p>Module 4 Rebel Applied Maintenance & Repair</p> <ul style="list-style-type: none">• Review of common repairs and preventative maintenance procedures• Knowledge Assessment
Technical Support	Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

Rebel Applied™ Service & Troubleshooting

Course Name**Rebel Applied™ Service & Troubleshooting****Course Description**

Rebel Applied Module Service & Troubleshooting Module 5 provides basic information that all students should know as they begin to learn about the Rebel Applied unit. This includes an introduction and walkaround of the unit, along with information about the typical components used on a Rebel Applied unit.

Who Should Attend

Maintenance and service technicians

Prerequisites

Principles of Rebel Applied online curriculum is a prerequisite to attend Rebel Applied Service & Troubleshooting Module 5.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Perform the appropriate steps to resolve service and troubleshoot operational Rebel Applied issues

**Technical Support**

Technical Support for Applied Air Products is available separate from the successful completion of the training.

Applied Air Training

Self-Contained Service

Course Name	Self-Contained Service
Course Description	Learn the Self-Contained (SWP & SWT) product features, installation requirements, and service procedures
Who Should Attend	Maintenance and service technicians
Prerequisites	<p>Students should have an understanding of the refrigeration cycle, basic electronics, and simple control circuits. The course will use these basic concepts to develop an understanding of the Daikin Self-Contained product. We recommend that students review IM-1032 prior to the start of class. Visit www.daikinapplied.com and enter 1032 in the search field.</p> <p>Principles of MicroTech III online curriculum is a prerequisite to attend this course.</p> <p>The Self-Contained Service Course is only available upon special request and requires a minimum number of 8 students and instructor availability.</p>
Learning Outcomes	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Install and commission Daikin Self-Contained (SWP & SWT) units using standard methods • Identify and distinguish the purpose and function of Self-Contained components • Describe unit sequence of operation in all modes and states • Navigate & modify adjustment settings and parameters in MicroTech® III (MT III) controller and operate MT III to meet job specifications • Utilize electrical meters, wiring diagrams, and MT III controller for unit diagnostics and troubleshooting • Demonstrate preparation, set-up and operation for Daikin Self-Contained gas, electric and hot-water heat • Prepare and report accurate commissioning data on Daikin Warranty Registration Form • Perform proper preventative maintenance per the Daikin Operations Manual
Technical Support	Technical Support for Applied Air Products is available separate from the successful completion of the training.

2024 Daikin Service Training Schedule - Chillers

2024 Training Schedule - Chillers

Course Title	Models	Tuition	Length	Location	2024 Dates
Scroll Chiller Maintenance & Operation	AGZ, WGZ, TGZ	\$200.00	Online	Online	Online
Scroll Chiller Service & Troubleshooting Prerequisite: Scroll Chiller Maintenance & Operation	AGZ, WGZ, TGZ	\$1,850.00	2 days	Staunton, VA	Apr 1-2, 2024 Apr 3-4, 2024 Aug 20-21, 2024 Sep 25-26, 2024 Oct 15-16, 2024
Screw Chiller Maintenance & Operation	AWS, AWV, WWV	\$200.00	Online	Online	Online
Screw Chiller Service & Troubleshooting Prerequisite: Screw Chiller Maintenance & Operation	AWS, AWV, WWV	\$1,950.00	2 days	Staunton, VA	Apr 17-18, 2024 Aug 22-23, 2024 Oct 17-18, 2024 Oct 30-31, 2024
Centrifugal Chiller Maintenance & Operation for WSC, WDC, WCC	WSC, WDC, WCC	\$200.00	Online	Online	Online
Centrifugal Chiller Service & Troubleshooting for WSC, WDC, WCC Prerequisite: Centrifugal Chiller Maintenance & Operation	WSC, WDC, WCC	\$1,850.00	2 days	Staunton, VA	May 13-14, 2024 Aug 5-6, 2024
Centrifugal Compressor Repair for WSC, WDC, WCC Prerequisite: Centrifugal Chiller Service & Troubleshooting	WSC, WDC, WCC	\$3,450.00	3.5 days	Staunton, VA	May 15-17, 2024 Aug 7-9, 2024
WMC Maintenance & Operation	WMC	\$200.00	Online	Online	Online
WMC Service & Troubleshooting Prerequisite: WMC Maintenance & Operation	WMC	\$2000.00	2 days	Staunton, VA	May 7-8, 2024 Aug 12-13, 2024 Sep 4-5, 2024
WME Gen-II Maintenance & Operation	WME	\$200.00	Online	Online	Online
WME Gen-II Service & Troubleshooting Prerequisite: WME Gen-II Maintenance & Operation	WME	\$2,850.00	2 days	Staunton, VA	May 23-24, 2024 Aug 14-15, 2024

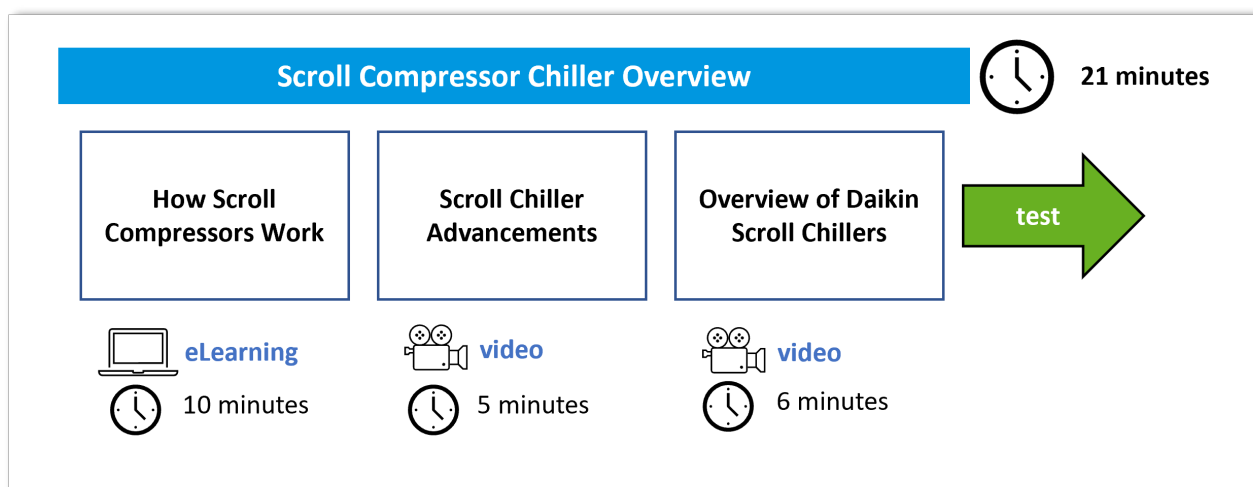
Chiller Training

Scroll Chiller Maintenance & Operation

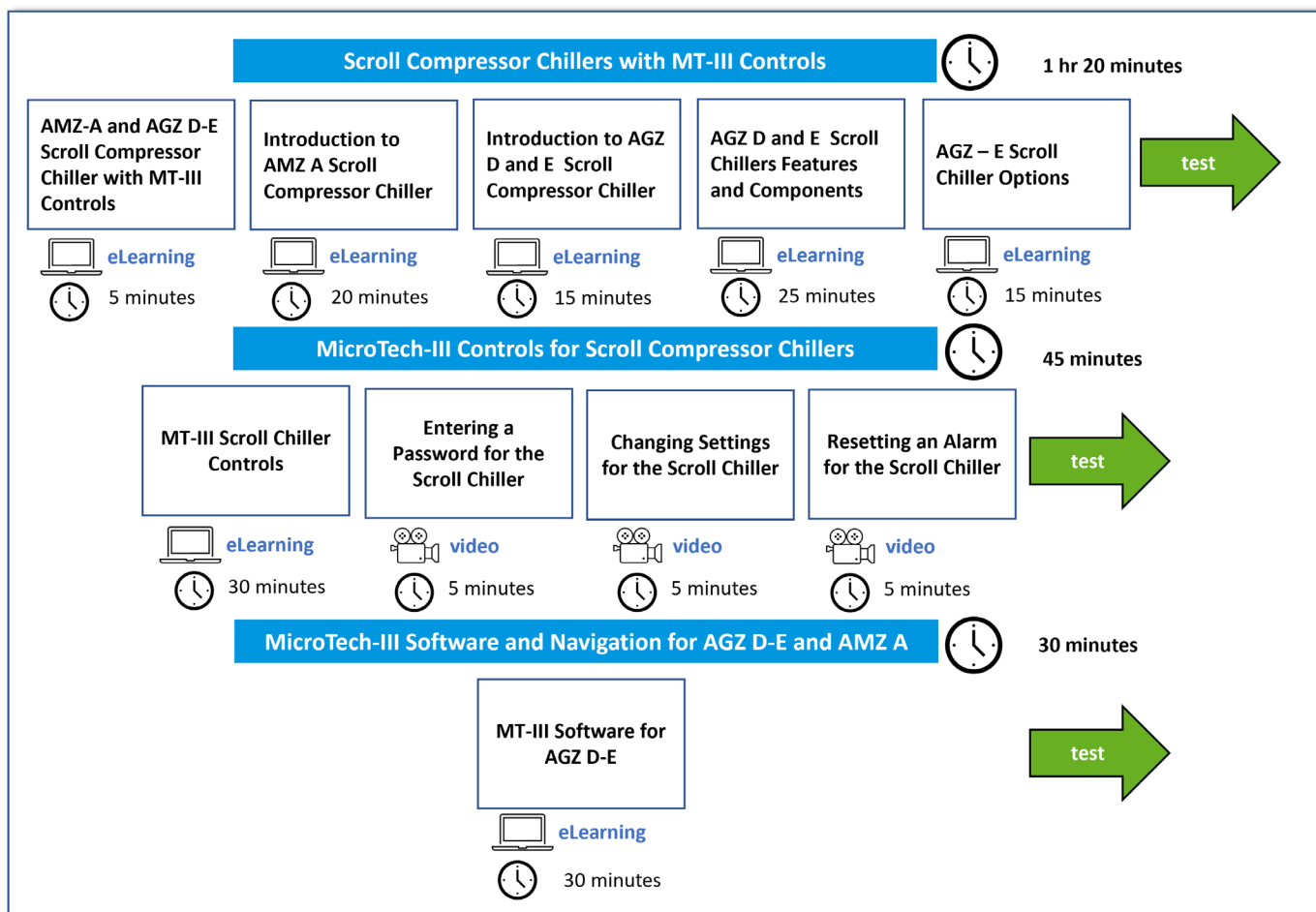
Course Name	Scroll Chiller Maintenance & Operation
Course Description	Scroll Chiller Maintenance & Operation is a blended learning program with an overview of the types of Daikin Scroll chillers, how they operate, major components and the compressor types. This curriculum takes approximately 4-4.5 hours to complete, however, it may take longer depending on the individual learner.
Who Should Attend	Maintenance and service technicians
Prerequisites	None
Learning Outcomes	<ul style="list-style-type: none">• Define and analyze the basic cycle of air and water-cooled chillers: Heat transfer basics, refrigerant cycle, industry terminology, identify system components• Identify scroll compressors• Define, identify and analyze unit components – nomenclature, model sizes, features and benefits, components• Identify the Microtech®II (MTII) chiller controllers used on earlier vintage AGZ/ACZ models• Identify the Microtech®II chiller controllers used on current WGZ/TGZ models• Demonstrate navigation of MT III menus, entering passwords and assess setting changes• Define, identify and analyze unit components, compressors, heat exchangers & MT III controllers for AGZ-D Chillers• Define, identify and analyze unit components on AGZ-E and AMZ-A Chillers• Demonstrate navigation of MT III menus• Explain how to enter passwords and assess setting changes
Technical Support	Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Chiller Training

Scroll Overview

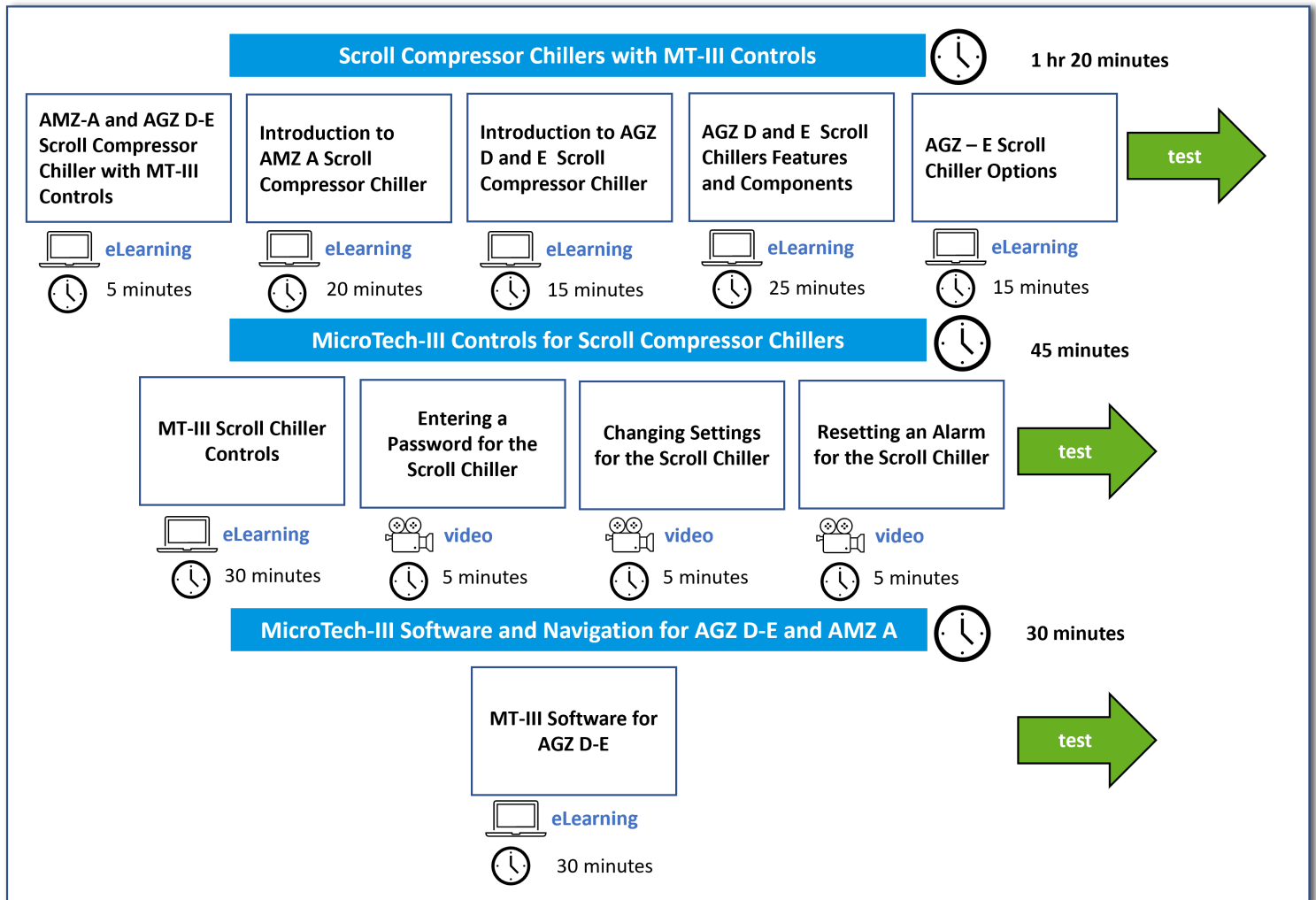


Scroll Compressor Chillers with MT-II Controls



Chiller Training

Scroll Compressor Chillers with MT-III Controls



Chiller Training

Scroll Chiller Service & Troubleshooting

Course Name	Scroll Chiller Service & Troubleshooting
Course Description	Learn the AGZ, WGZ and TGZ product features, installation requirements, and service procedures for Daikin commercial Scroll compressor products.
Who Should Attend	Maintenance and service technicians
Prerequisites	Scroll Chiller Maintenance & Operation online curriculum
Learning Outcomes	<ul style="list-style-type: none"> • Explain the importance of the pre-start checklist status prior to starting-up the scroll chiller • Identify the sections of the start-up form and explain how to fill it out correctly and what to do if the forms are not completed properly • Explain what to do if the correct personnel are not present when arriving to start up the chiller • Explain the purpose of the Technical Data Sheet (TDS) and how it relates to chiller start up • Explain the steps of start-up • Discuss and explain issues regarding building load, evap-water flow, chiller clearance and remote piping • Activate the technician password using the MicroTech-III (MT-III) • Identify information from the TDS that is used to input settings for the config unit and alarm menu on the MT-III • Explain step capacity and variable flow • Identify the location of Delta T in the TDS • Input the correct settings in the unit setup menu of MT-III based on the provided scenario • Interface CoreSense with a laptop and run a report • Explain how to set up the electronic sensor flow including how the sense flows, orientation, installation & calibration
Technical Support	Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Chiller Training

Screw Chiller Maintenance & Operation

Course Name	Screw Chiller Maintenance & Operation
Course Description	Screw Chiller Maintenance & Operation is a blended learning program with an overview of the types of Daikin Screw Chillers. Learn the AWW, AWS and WWV product features, installation requirements and service and maintenance procedures for Daikin Screw Chillers. This curriculum takes approximately 5 hours to complete; however, it may take longer depending on the individual learner.
Who Should Attend	Maintenance and service technicians
Prerequisites	None
Learning Outcomes	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Explain how the twin and single screw compressors and semi-hermetic type compressors work. • Explain the difference between the AWS chiller and the AWW Screw chillers • Identify the purpose of the slide position sensor, what the signs are that sensor calibration is necessary, what can happen if it is not calibrated properly, and how to calibrate it • Identify the different types of motors, starters, and VFDs and how they work • Demonstrate how the MicroTech-III controller operates and how to enter a password, change settings, and reset an alarm • Describe the Turbo Screw Compressor sizes and the three main sections of the compressor: Motor, Center or Compression, and Oil Separation Section • Explain how the Integrated Water Side Economizer works • Identify the Water- Cooled Screw Chiller's features, nomenclature, operating limits, and components • Explain the common maintenance procedures for the scroll and screw chiller • Describe the affects of short cycling on oil maintenance • Demonstrate when and how to mount the electronic flow sensor, how to orientate, calibrate and set up the flow sensor, and how the sensor uses heat to determine flow • Describe the importance of water quality
Technical Support	Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Chiller Training

Screw Chiller Maintenance & Operation Overview

Section 1 Screw Compressor Introduction



5 minutes

Rotary - Screw
Compressor

Video



4 minutes

Semi - Hermetic
Type Compressor

Video



1 minute

NO test

Continue to next module

Section 2 Screw Air Cooled Chillers



141 minutes

Air-Cooled
Screw Chiller

eLearning



30 minutes

Air-Cooled Screw
Chiller: AWS
Distinctions

eLearning



30 minutes

Calibrate Slide
Position Sensor

eLearning



30 minutes

Motors



Video



9 minutes

Starters



Video



7 minutes

VFDs



Video



5 minutes

Air-Cooled Screw
Chiller: AWW
Distinctions

eLearning



30 minutes

test

Section 3 MicroTech-III



14 minutes

MicroTech-III Chiller
Controls

Video



6 minutes

MicroTech-III
Controller: Entering
a Password

Video



3 minutes

MicroTech-III
Controller: Changing
Settings

Video



2 minutes

MicroTech-III
Controller: Resetting
an Alarm

Video













3 minutes

test

Chiller Training

Screw Chiller Maintenance & Operation Overview (continued)

Section 4 AWW Compressors





Daikin Pathfinder Air-Cooled Chiller with VVR Technology	AWW w/ Turbo Compressors	Daikin's Single Screw Compressor	WSE – Free Cooling	Pathfinder® Air-cooled Chiller Now Available with Free Cooling
 Video	 eLearning	 Video	 Video	 Video
 5 minutes	 30 minutes	 3 minutes	 4 minutes	 3 minutes



45 minutes



Section 5 WWV Water-Cooled Screw Chiller









WWV Water-Cooled Screw Chiller	WWV Water-Cooled Screw Chiller
 Video	 eLearning
 2 minutes	 30 minutes



32 minutes



Section 6 Scroll and Screw Chiller Maintenance

Scroll and Screw Chiller Maintenance	Oil Management	Electronic Flow Sensor	Water Quality
 eLearning	 Video	 Video	 Video
 30 minutes	 7 minutes	 9 minutes	 7 minutes



53 minutes



Chiller Training

Screw Chiller Service & Troubleshooting

Course Name	Screw Chiller Service & Troubleshooting
Course Description	Learn the AWV, AWS, and WWV product features, installation requirements, and service and maintenance procedures for Daikin Screw Chillers
Who Should Attend	Maintenance and service technicians
Prerequisites	<i>Screw Chiller Maintenance & Operation online curriculum</i>
Learning Outcomes	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none">• Explain the importance of the pre-start checklist status prior to starting-up the screw chiller• Identify the sections of the chiller log sheet and explain how to fill it out correctly and analyze chiller operation• Explain the purpose of the Technical Data Sheet (TDS) and how it relates to chiller operational requirements.• Explain DC Condenser Fan Motor ModBus control and ModBus Readdressing• Describe common issues that occur with the screw chiller• Complete the following using the MicroTech-III (MT-III)<ul style="list-style-type: none">Upload softwareRecommission the controller using TDSConfigure the settings of the controller according to TDSVerify critical setpoints• Explain VFD removal from the control panel• Describe the TWV Templifier
Technical Support	Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Chiller Training

Centrifugal Chiller Maintenance & Operation for WSC, WDC, WCC

Course Name	Centrifugal Maintenance & Operation
Course Description	Learn about the major components and operation of Daikin centrifugal chillers in this course. The course is a blend of e-learnings and micro-videos.
Who Should Attend	<p>Students should have a minimum of 5 years' experience with Centrifugal chillers to maximize the benefit of this course.</p> <p>A mechanical contractor doing installation, maintenance and repairs of centrifugal chillers is eligible to send qualified technicians to this course. The technician should have a good working knowledge of the refrigerant cycle, power and control circuitry, and be skilled in the use of standard service tools and electrical meters.</p>
Prerequisites	<i>Centrifugal Maintenance & Operation online curriculum is a prerequisite for Centrifugal Chiller Compressor Service and Troubleshooting.</i>
Learning Outcomes	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Identify Chiller Design – Evaporator, Condenser, Component locations and function • Compare and recognize WSC, WDC and WCC models • Compressor Design – impeller, bearing and moveable diffuser • Describe housing contents – motor housing, gear case and inlet-guide-vane assembly • Explain lubrication for WSC, WDC, and WCC external oil circuit • Navigate control architecture, sensor locations, SA/SB operations, touchscreen navigation • Describe Starters – WSC, WDC, WCC starters and starter control wiring
Technical Support	Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Chiller Training

Centrifugal Chiller Service & Troubleshooting for WSC, WDC, WCC

Course Name

Centrifugal Chiller Service & Troubleshooting

Course Description

Learn about the major components and operation of the Daikin WSC, WDC, & WCC centrifugal chillers in this course. The course is a blend of e-learning, micro-videos, and an in-person training session that includes lab work. The course will prepare learners to operate, maintain, troubleshoot, and repair Daikin WSC centrifugal chillers.

Who Should Attend

Students should have a minimum of 5 years' experience with Centrifugal chillers to maximize the benefit of this course.

A mechanical contractor doing installation, maintenance and repairs of centrifugal chillers is eligible to send qualified technicians to this course. The technician should have a good working knowledge of the refrigerant cycle, power and control circuitry, and be skilled in the use of standard service tools and electrical meters.

Prerequisites

Centrifugal Maintenance & Operation online curriculum is a prerequisite for Centrifugal Chiller Compressor Service and Troubleshooting.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Demonstrate how to operate the Daikin WSC centrifugal chillers
- Navigate the controller and demonstrate an understanding of the software associated with the controller
- recognize each component and explain its purpose and function
- Learn how to solve a variety of issues
- Perform repairs and maintenance on Daikin WSC chillers

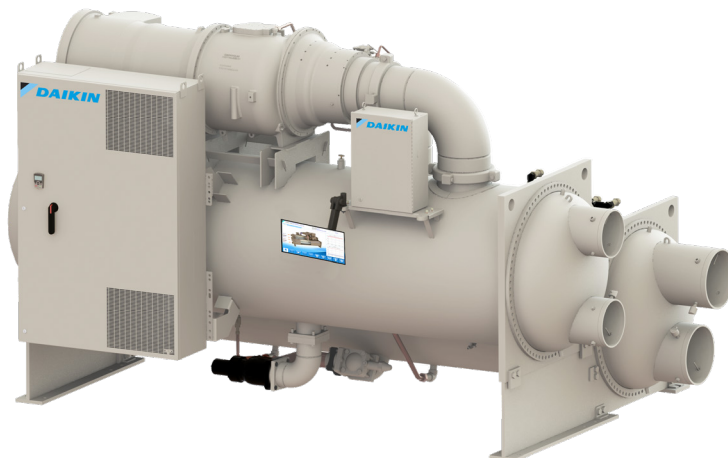
Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Chiller Training

Centrifugal Chiller Compressor Repair for WSC, WDC, WCC

Course Name	Centrifugal Chiller Compressor Repair
Course Description	Learn to disassemble and reassemble Daikin compressors, to fit and adjust internal operation parts, and to understand normal compressor functions that allow technicians to diagnose the cause of deviations from the norm.
Who Should Attend	<p>Students should have a minimum of 5 years' experience with Centrifugal chillers to maximize the benefit of this course.</p> <p>A mechanical contractor doing installation, maintenance and repairs of centrifugal chillers is eligible to send qualified technicians to this course. The technician should have a good working knowledge of the refrigerant cycle, power and control circuitry, and be skilled in the use of standard service tools and electrical meters.</p>
Prerequisites	<i>Centrifugal Chiller Service & Troubleshooting is required prior to attending Centrifugal Compressor Repair.</i>
Learning Outcomes	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none">• Demonstrate centrifugal compressor repair procedures• Disassemble and reassemble compressors. The class rotates between the following 3 groups: CE050 and CE079, CE063 and CE087, and CE126 and Oil loss analysis and testing• Troubleshoot and solve oil-loss issues
Technical Support	Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.



Chiller Training

WMC Maintenance & Operation

Course Name

WMC Maintenance & Operation

Course Description

WMC Chiller Maintenance & Operation is a blended learning program with an overview of the WMC Turbocor compressor, operations, economizer and WMC software and settings. This curriculum takes approximately 4 hours to complete.

WMC Maintenance & Operation online curriculum is a prerequisite required to attend the WMC Chiller Service & Troubleshooting two-day in-person course.

WMC Maintenance & Operation will include eLearnings, videos and tests and will cover the following:

MicroTech II Introduction & Navigation

Centrifugal MicroTech II Interface Touchscreen (OITS & HMI) & Graphing

Microtech II Electronic Expansion Valve & Control

WMC Product Overview

WMC Turbocor Magnetic Bearing Compressor

WMC Software and Settings

Learning Outcomes

- Describe the WMC Turbocor Magnetic-Bearing Compressor and magnetism
- Describe the WMC economizer and benefits
- Describe WMC software and settings
- Describe advanced MicroTech II for WMC

Learning Outcomes

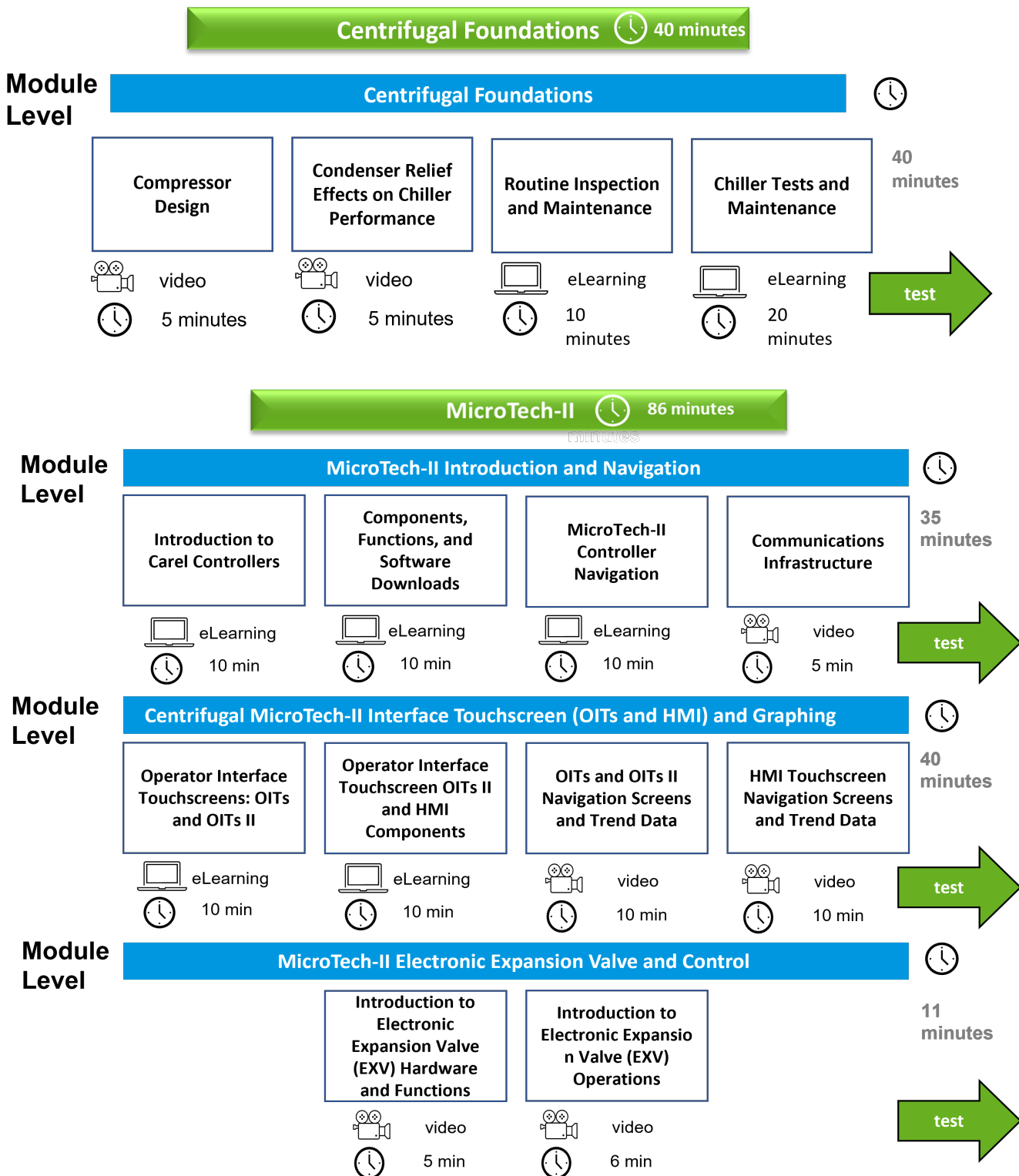
- Describe the WMC Turbocor Mag Bearing Compressor and Magnetism
- Describe the WMC Economizer and benefits
- Describe WMC Software and Settings
- Describe Advanced MicroTech II for WMC

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Chiller Training

WMC Maintenance & Operation Overview



Chiller Training

WMC Maintenance & Operation Overview (continued)



Chiller Training

WMC Service and Troubleshooting

Course Name**WMC Service & Troubleshooting****Course Description**

WMC Chiller Service & Troubleshooting is a blended learning program with an overview of the WMC Turbocor compressor, operations, economizer and WMC software and settings. In this hands-on class, you will be learning important aspects of servicing WMC equipment. For more details, see the Learning Outcomes.

Who Should Attend

Maintenance and service technicians

Students should have a minimum of 5 years' experience with Centrifugal chillers to maximize the benefit of this course. The Magnitude chiller uses a centrifugal compressor that has advanced technology.

Prerequisites

WMC Maintenance & Operation online curriculum is required prior to attending WMC Service & Troubleshooting in-person course.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Complete a thorough operational inspection based on the Technical Data Sheet which has the chiller design criteria
- Adjust the chiller critical setpoints based on the application
- Install and operate the compressor monitor software interface
- Perform compressor repair & diagnostics during complete teardown of top and side components
- Utilize compressor test harness for safe voltage testing
- Identify and describe compressor sequencing, MicroTech® II for WMC software & programming
- Operate MicroTech® II controls using hands-on lab sessions

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.



Chiller Training

WME® Gen-II Maintenance & Operation

Course Name

WME Gen-II Maintenance & Operation

Course Description

Explore the foundations of the WME® Chiller from Gen I through the Gen II vintages. Gain an understanding of the development of the control software, compressor, controls, and refrigerant circuit. Learn the controls scheme for the MicroTech III® and Orion® platforms, HMI/OITS navigation, Gen II hardware component locations and functions, and the EXV control logic including the Orion platform with SmartOrifice®. Explore the details of the compressor components, the magnetic bearing assembly and bearing controller, and the Fuji® VFD drive and most common alarm codes

Who Should Attend

Maintenance and service technicians

Prerequisites

Students should have a minimum of 5 years' experience with Centrifugal chillers to maximize the benefit of this course. The Magnitude chiller uses a centrifugal compressor that has advanced technology.

Learning Outcomes

- Describe the history and development of the WME chiller
- Explain the differences between the WME vintages
- Describe the location or function of the major WME components (Compressor, Controls, Refrigerant Circuit)
- Explain the major software revisions that have led to improvements for both single and dual compressors
- Identify and explain the correct sequence of operations for the MicroTech III® and for Orion® control platforms
- Explain how to navigate the HMI/OITS menu screens for MicroTech III® and Orion® to change setpoints and clear alarms
- Identify the name, location, and function of the hardware components for MicroTech III® and Orion® platforms
- Describe the functionality, settings, and troubleshooting procedures for the EXV with MicroTech III® and the Orion® with Smart Orifice® logic
- Identify the part name, location, and function of the Gen II compressor components for the MBA and Aero sections
- Explain what a VFD is and how it works
- Describe the differences between the 3 Fuji® VFDs used in the WME® Gen II (power demand/usage) and identify the part name, location, and function of the VFD components
- Identify the most common alarm codes for the Fuji® VFD
- Explain the use of the Gen II bearing calibration tool for determining the impeller position and replacement of the Motor Bearing Assembly or Magnetic Bearing Controller

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to product(s) where the student successfully completed training.

Chiller Training

WME Gen-II Service & Troubleshooting

Course Name

WME Gen-II Service & Troubleshooting

Course Description

In this 2-day hands-on class, you will gain expertise by working on typical service and troubleshooting scenarios that involve: the chiller controls, downloading and configuring software, navigating the OITS and pulling customer trends, shimmiing the impeller, Mag Bearing Controls, rebuilding an IGV assembly, chiller startup or inspection, and Fuji VFD communication and diagnostics.

Who Should Attend

Maintenance and service technicians

Prerequisites

WME Gen-II Maintenance & Operation Online Curriculum is required prior to attending WME Gen-II Service & Troubleshooting in-person course.

Learning Outcomes

Software

- Given the supplied software applications and directions, correctly download and configure the two Frenic VFD loader programs (driver and definition files) and the Gen II Motor Bearing Tool software.

VFD

- Correctly locate the VFD and drive type then hook up a laptop to the USB port on the Fuji drive to configure the downloaded software.
- Given several alarms, correctly identify the alarm type and follow the troubleshooting steps to clear the alarms.
- Identify the proper steps to service and repair the cooling fans.

Motor Bearing Calibration

- Using the WME Gen II Bearing Calibration Tool software, correctly demonstrate how to calibrate the Mag Bearing Controller and shim the impeller.

IGV

- Using the instructions provided, correctly teardown and reassemble an IGV.
- Given a real-world problem with an IGV, correctly replace the affected part(s).
- Assemble/disassemble the actuator using the assembly manual and an actuator driver.

HMI/OITS

- Given the installation instructions and supplied software applications, correctly identify the type of installation, upload the files in the correct order, input the correct password, and navigate the HMI screens.
- When installing a new controller, set up a new IP address using an OTG dongle and the correct files.
- Be able to clear an active alarm and determine the sensor faults.
- Be able to view and copy customer trends onto a laptop as a CSV file.

WME Gen II Inspection

- Given an inspection scenario, fill out the required fields on the inspection log sheet to determine if the inspection is correct.

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Applied Terminal Systems Training

Water Source Heat Pump

Course Name	Water Source Heat Pump
Course Description	Commission, maintain, operate, and troubleshoot Water Source Heat Pumps, MicroTech III and Mark IV controls. Classroom sessions include hands-on exercises using controls simulators and actual operation units.
Who Should Attend	Owners, Operators, Maintenance Personnel and Service Technicians
Prerequisites	<p>We recommend that students read and review the IM's listed below prior to the start of class. Visit www.daikinapplied.com and enter the number (ex. 1049) in the search field.</p> <ul style="list-style-type: none"> Enfinity Horizontal Ceiling Mounted - IM 1049 Enfinity Vertical Floor Mounted - IM 930 Enfinity Console - IM 985 Enfinity Large Capacity Vertical - IM 1059 Enfinity Large Capacity Horizontal - IM 1060 SmartSource Horizontal - IM 1139 SmartSource Vertical - IM 1140 SmartSource Compact Vertical - IM 1251 Vertical Stack - IM 986 SmartSource DOAS – IM 1301 SmartSource Compact Horizontal - IM 1304 <p>The Water Source Heat Pump Course is only available upon special request and requires a minimum number of 8 students and instructor availability.</p>
Learning Outcomes	<p>Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Define and analyze basic unit design • Identify SmartSource WSHP • Identify Enfinity WSHP • Identify Console WSHP • Identify Vertical Stack WSHP • Perform unit Installation • Identify Horizontal WSHP • Identify Vertical WSHP • Identify Console WSHP • Identify Vertical Stack WSHP • Check Test and Start • Navigate MicroTech® III • Navigate Mark IV • Assess ECM Motor Operation and Speed Settings Options • Describe unit demo
Technical Support	Technical Support for Applied Terminal Systems (ATS) is available separate from the successful completion of the training.

Training Registration Form

Daikin Learning Training Registration Form

Course Title:			
Dates:			
Course Location:			
Company Name:			
Mailing Address:			
City, State, Zip:			
Student Name:		Email:	
Phone Number:		Fax Number:	
Submitted By:		Email:	
Phone Number:		Fax Number:	

Please provide complete billing information.

Company Name:			
Billing Address:			
Contact:			
City, State, Zip:			
Phone Number:		Fax Number:	

Payment is due in advance or student(s) will not be admitted.

E-mail application to: daikinlearning@daikinapplied.com

Credit card payment is required at the time of enrollment.

Someone will contact you for payment.

Daikin Learning reserves the right to make changes or alternations to the course content or schedule, and is not responsible for fees associated with changing dates or cancellation of classes. In the unlikely event of a schedule change or cancellation, our best effort will be made to notify all registrants in a timely manner.