



Sheet Metal Workers' International Association
Local Union 265



SMART Local 265 Course Guide

Upgrade Classes

Continuing Education



BIM – AutoCAD

This class will utilize Autodesk AutoCAD. Through a combination of lecture, hands-on exercises, and drawing problems, this class will introduce you to computer-aided drafting.

Prerequisites:

Basic computer knowledge.

BIM – Revit

This class is set up to teach you the Autodesk Revit functionality. You begin by learning about the user interface and basic drawing, editing, and viewing tools. Then you learn design development tools including how to model walls, doors, windows, floors and more. Finally, using the add-on SysQue, you will model an HVAC system inside the building you created.

Prerequisites:

Basic computer knowledge.

BIM – Trimble Robotic Total Station

This class will cover Trimble Field Link for MEP software and Trimble 773 Robotic Total Station.

The following topics will be covered:

- Understand RTS features, buttons and specifications
- Understand basic setup
- Layout with both laser and prism
- Become familiar with the Field Link software

Prerequisites:

None

BIM – Trimble AutoBid Sheet Metal

This class will utilize Trimble's estimating software.

<https://mep.trimble.com/wp-content/uploads/Trimble-AutoBid-Sheetmetal-v1.pdf>

Prerequisites:

Basic computer knowledge

BIM – Bluebeam Revu

This class will utilize Bluebeam Revu software. Bluebeam is a PDF creation, editing, mark up and collaboration software tool.

<https://www.bluebeam.com>

Prerequisites:

Basic computer knowledge.

Fire Life Safety Technician Level 1

This Class will cover the principles of the correct installation, inspection, operation, and maintenance of fire and smoke dampers in HVAC systems.

Prerequisites:

None

Exam:

Required for Certification

This class can be applied to ICB recertification CEU's

Fire Life Safety Supervisor Level 1

In addition to overseeing the work done by Fire Life Safety Level 1 technicians, students will learn about different construction types, fire resistant construction, structural protection, and fire and smoke containment.

Prerequisites:

Fire Life Safety Technician Level 1

Exam:

Required for Certification

This class can be applied to ICB recertification CEU's

Fire Life Safety Technician Level 2

Participants of this class will focus on controls, smoke management, and stairway pressurization, in addition to Fire Life Safety Level 1 principles.

Prerequisites:

None

Exam:

Required for Certification

This class can be applied to ICB recertification CEU's

Fire Life Safety Supervisor Level 2

In addition to overseeing the work done by Fire Life Safety Level 2 technicians, students will focus on the inspection, testing, and maintenance of smoke-control and smoke management systems.

Prerequisites:

Fire Life Safety Technician Level 2

Exam:

Required for Certification

This class can be applied to ICB recertification CEU's

OSHA 1926 Construction 30 Hour

This OSHA, 30 Hour class, will cover multiple Construction safety standards and topics. After completion of the class, students will receive an OSHA 30 card for the Construction industry.

Prerequisites:

None

OSHA 1910 General Industry 30 Hour

This OSHA, 10 Hour class, will cover multiple Construction safety standards and topics. After completion of the class, students will receive an OSHA 10 card for the Construction industry.

Prerequisites:

None

Scaffolding Safety Training

This class is approved by the City of Chicago for required scaffold safety training. Certificate and Wallet ID will be issued upon successfully completing the class.

Prerequisites:

None

Crane Signal

Prerequisites:

None

Hoisting and Rigging

Prerequisites:

None

ICA-Infection Control Awareness

This course introduces the rationale for infection control risk assessments (ICRA) and plans in healthcare facilities during construction and renovation, conveys details regarding infection risks and mitigation, explains responsibilities for various parties, and outlines best practices for sheet metal workers to follow to ensure infection control and protection of patients, staff and other workers.

ICB certification exam follows course completion

Web site reference:
International Training Institute

This class can be used for ICB recertification CEU's.

Prerequisites:

None

Microsoft Visio

This course provides an overview on Microsoft Visio. This class will introduce you to the creation of line diagram wiring schematic drawings.

Prerequisites:

Basic computer knowledge.

HVAC Service – Residential Heating

This course will cover the basic operations of residential and light retail equipment. The course will cover the following:

- Natural gas / propane / fuel oil equipment
- 80% - 90% - modulating gas furnaces / Boilers
- Standing pilot/spark ignition / hot surface ignitors (HSI) systems
- Gas regulator/manifold pressure adjustments
- Clocking a gas meter / Temperature rise / ESP (External static pressure)
- Motors and capacitors
- Flame safety (Flame rectification)
- IFC (integrated furnace controls)
- Heat exchangers
- Gas piping sizing
- Venting categories 1 and four appliances
- The sequence of operations / Troubleshooting
- Installation and Codes
- Gas heating lab

Prerequisites:

None

HVAC Service – Residential Cooling

This course will cover the basic operations of residential and light retail equipment. The course will cover the following:

- Single and Two-stage cooling equipment
- 5 stage and modulating cooling equipment
- Compressors
- Metering devices
- Refrigerants
- Motors and capacitors
- IFC (integrated furnace controls)
- Heat pumps
- Refrigerant piping sizing
- The sequence of operations /troubleshooting
- Installation and Codes
- Charging
- Air conditioning charge lab

Prerequisites:

None

HVAC Service – Rooftop Units

This course will cover the basic operations of RTU's (rooftop units). The course will cover the following:

- Gas regulator/manifold pressure adjustments
- Motors and capacitors
- Motor and fan drives/belts
- The sequence of operations / Troubleshooting
- Compressors
- Economizers
- Maintenance
- Installation and Codes
- RTU heating lab

Prerequisites:

None

HVAC Service - Combustion Analysis

This course will cover the combustion analysis of gas heating equipment. The course will cover the following:

- Combustion analysis
- Natural gas / propane / fuel oil combustion
- Air/flue ratio - adjustments
- Combustion analyzers
 - Testo
 - Bacharach
- Furnace and boiler combustion testing
- Gas equipment combustion specifications
- Combustion analysis lab
- Certification exam (optional)

Book:

\$20.00-dollar

Exam (optional):

\$35.00-exam

Prerequisites:

HVAC Service - Heating / Service Technician / Instructor consent

HVAC Service – MUA

This course will cover the operation of MUA (make-up air units). Course will cover the following:

- Indirect / Direct fire MUA
- Regulators / Regulator springs
- Accessories
- Maxitrol controls
 - Modulating valves/regulator
 - Amplifiers
- MUA lab

Prerequisites:

HVAC Service - Heating / Service Technician / Instructor consent

HVAC Service – Geothermal

This course will cover the installation and operation of Geothermal Heat pump equipment. The course will cover the following:

- Installation/troubleshooting
- Sequence of operation
- Applications
- Loop types
- Refrigeration cycle
- Start-up/commissioning
- Rebates

Optional exams: \$100 for each exam

- Installation
- Service

Prerequisites:

None

HVAC Service – Refrigerant Management 1

Section 608

Section 608 of the Federal Clean Air Act requires that all persons who maintain, service, repair or dispose of appliances that contain regulated substances be certified in the proper refrigerant handling techniques.

The course will cover:

- EPA regulations
- Recover / Recycle / Reclaim
- Recover tanks/machines
- Recover lab
- Refrigerant management / logs

Web-site information

https://www.epa.gov/sites/production/files/2015-08/documents/section_608_of_the_clean_air_act.pdf

https://www.epa.gov/sites/production/files/2016-09/documents/608_fact_sheet_technicians_0.pdf

The EPA exam contains:

- Core sections
- Certifications
 - Type 1 – Small Appliances
 - Type 2 – High Pressure
 - Type 3 – Low pressure
- Universal certification requires all three types.

Each section is 25 questions

Exam:

\$25.00-exam

Prerequisites:

None

HVAC Service – Refrigerant Management 2

Section 609

Any person who repairs or services a motor vehicle air conditioning (MVAC) system must be properly trained and certified under section 609 of the Clean Air Act by an EPA-approved program. All technicians servicing MVAC-like appliances must be certified.

The course will cover:

- EPA regulations
- Recover / Recycle / Reclaim
- Recover tanks/machines
- Leak testing
- 50 question on-line exam

Exam:

\$25.00-exam

Prerequisites:

None

HVAC Service – BAS (Building Automation Systems) 1

This course will introduce you to the installation, programming, and servicing of a Building Automation System.

Carrier iVu BAS

This course will cover:

- Applications
- Programming
- Installation
- Wiring
- Troubleshooting
- BAS Lab
 - Install/wire/program
 - VAV AHU
 - VAV boxes
 - Constant Volume AHU
 - Boilers
 - VFD

HVAC Service – BAS (Building Automation Systems) 2

This course will introduce you to the installation, programming, and servicing of a Building Automation System.

Honeywell Tridium BAS

This course will cover:

- Applications
- Programming
- Installation
- Wiring
- Troubleshooting
- BAS Lab
 - Install/wire/program
 - VAV AHU
 - VAV boxes
 - Constant Volume AHU
 - Boilers
 - VFD

HVAC Service – BAS (Building Automation Systems) 3

This course will introduce you to the installation, programming, and servicing of a Building Automation System.

Honeywell LCBS

This course will cover:

- Applications
- Programming
- Installation
- Wiring
- Troubleshooting
- BAS Lab
 - Install/wire/program

ICE

The Industry Competency Exams (ICE).

Three exams are offered:

- **Residential Air-Conditioning and Heating**
- **Light Commercial A/C and Heating**
- **Commercial Refrigeration.**

To earn a Residential ICE Certification, a technician would need to pass the CORE and at least one specialty section.

- **Residential Air-Conditioning and Heating**
 - Core

Specialty Sections:

- Air Conditioning
- Air Distribution
- Heat Pumps
- Gas Heating
- Oil Furnace

- **Residential Air –Conditioning and Heating**
 - Equipment 5 tons systems and smaller
 - 150 question - 3 ½ hour exam
 - Six sections total – 35 minutes per section

- **Light Commercial A/C and Heating**
 - Equipment six tons to 20 tons
 - 100 question 2 hour exam

- **Commercial Refrigeration**
 - Refrigeration equipment
 - 100 question 2 hour exam



Web-site information:

<http://www.natex.org/site/471/Training-Testing/ICE-Proctors/Overview>

Exam:

\$35.00-exam

Prerequisites:

HVAC experience

NATE Exams

North American Technician Excellence (NATE). In order to be NATE certified you must pass the CORE and one specialty exam. Installation specialty exams only count for the installation certification. Service specialty exam will earn you for both installation and service certifications.

- Core

Installation specialties

- Air Conditioning
- Air Distribution
- Air to Air Heat Pump
- Gas Heating

Service specialties

- Air Conditioning
- Air Distribution
- Air to Air Heat Pump
- Gas Heating
- Hydronic Gas
- Hydronic Oil
- Light Commercial Refrigeration
- Oil Heating (Air)



Core

- 50 questions 1 ½ hour

Specialties (residential or service)

- 100 questions 2 ½ hours

Passing the service specialties exams will give you both installation and service certifications.

Web-site information:

<http://www.natex.org>

Exam:

\$100.00-exam

Prerequisites:

HVAC experience

Manufacturer Training

There are several different one-night training seminars for you to attend.

Seminars will start at 4:30 pm.

Parker ZoomLock

January 24, 2019

Flame-Free Refrigerant Fittings

Web Site Information: <http://solutions.parker.com/Flame-Free>

Pelican Wireless Systems

February 5, 2019

Pelican Wireless Systems

Web Site Information: <https://www.pelicanwireless.com>

TAB – Testing Adjusting and Balancing

Testing, adjusting and balancing (TAB) is an important part of air and water delivery systems. TAB technicians make sure that air and water in heating and air conditioning systems are delivered efficiently, quietly, and safely throughout a building.

As a TAB technician, you will be responsible for working on air and water delivery systems to meet the specifications outlined by the design engineer. If you like math and the idea of working on complex systems and solving problems, TAB is a good career choice for you.

Course will cover the following:

- Air Balancing
- Water Balancing

Web site reference:

International Training Institute

At the completion of the course, you will have the opportunity to test for the ICB TABB Technician certification.

This class can be applied towards ICB recertification CEU's

Prerequisites:

None

Welding- GMAW

Prerequisites:

None

Welding- SMAW

This class is designed with the entry-level welder in mind. SMAW or “Stick” welding is the perfect process for the beginning welder. Each student will be offered the chance to weld on materials ranging in thickness from 16 Gauge to 3/8” plate, while also getting the chance to use different electrodes. Through practical training, the students will advance their skills with a progression towards the Structural Weld Certification Preparation Class, which is typically offered upon completion.

Prerequisites:

None

Welding- GTAW

Prerequisites:

None