

2023

**JOURNEYMAN
CONTINUING
EDUCATION**

COURSE CATALOG



JOURNEYMEN TRAINING



APPRENTICE ENRICHMENT TRAINING



PRE-APPRENTICE TRAINING

ARPEC



2023 JOURNEYMAN CONTINUING EDUCATION COURSE CATALOG

The Joint Apprenticeship & Training Committee Trust is proud to present our first-ever ARPEC Journeyman Continuing Education Course Catalog, which lists training tentatively planned to be offered by ARPEC in the coming year. Many of the respective members of Local 725 and MCASF took the time to help bring this project together. I'm very proud of the resulting catalog, which will help us all plan and prepare for our training in the coming year. I'd especially like to thank our many excellent instructors, who have worked very hard to develop Journeyman classes that provide helpful, relevant training for both the members of Local 725 and the contractors who employ them.

Continuing Education is a Union-negotiated benefit; your ongoing training and personal development a source of pride that separates us all from our non-union competition. Each member of Local 725 who pursues their own continuing education is contributing to improving our excellence in the trade — a cornerstones on which a successful Union / Contractor relationship is built.

The terms of the contract between Local 725 and MCASF require Members of Local 725 to obtain a minimum of 7 hours of continuing education. Additionally, Employers are contractually required to enforce the annual CEU requirement. This joint commitment serves to elevate the skills, expertise and craftsmanship of both employers and employees of our local industry. We sincerely hope that you will look at the continuing education offerings included in this course catalog not as a minimum requirement that must be met, but instead, as a means to continue your personal growth on your educational journey.

Throughout this document we've listed recommended prerequisites — both skills and recommended classes — prior to taking a class. We've also listed other related classes you might consider. Please keep in mind that these are recommendations and are not mandatory requirements.

Journeyman training: Please note that each course listed in this catalog is open to every Local 725 member, regardless of experience or background. We are working to develop cross training programs. Meanwhile, we've designated a few classes that are appropriate for Pipefitters seeking more experience with HVAC service and vice versa. If you're unsure about prerequisites, please contact me.

Apprentice enrichment training: The classes in this course catalog are also open to apprentices. If you are unsure if you have the appropriate foundational knowledge to enable you to safely and successfully take a course, please talk with your instructors. Your safety is very important to us.

Pre-apprentice training: In the coming months, we will develop special training offerings intended for those who are working as entry-level employees new to our trade. More to come!

I welcome any suggestions you may have for additional training. Additionally, for those who'd like to participate in ongoing discussions regarding continuing education at ARPEC, I'd encourage you to consider joining our Contractor Training Advisory Committee, which meets quarterly.

We will promote these classes via our email as registration for each class opens. If you aren't currently receiving our monthly announcements, please use the QR code below to be added to our list.

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JOURNEYMAN CONTINUING EDUCATION CLASS DESCRIPTIONS

- Ⓢ Recommended for cross training (retrofit)
- @ Recommended for Apprentice enrichment

Chillers

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- Chillers: Annual System Maintenance and Operation..... 3
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Electricity

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General Classes

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Pipefitting & Welding

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- Pipefitting: Trigonometry for Pipe Fabrication 25
- @ © Welding: Introduction to Soldering and Brazing..... 26
- @ © Welding: Introduction to Shielded Arc Metal Welding (SMAW)..... 27
- Welding: Advanced Shielded Arc Metal Welding (SMAW) 28
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Refrigeration

- @ © Refrigeration: Introduction to Principles and Service Guidelines 31
- @ © Refrigeration: Introduction to Recovery and Charging Refrigerant (NEW) 32
- @ © Refrigeration: Introduction to Variable Refrigerant Volume (VRV) / Multi-split Technology 33
- @ © Refrigeration: Introduction to Ice Machines 34
- Refrigeration: Rack Refrigeration 35
- Refrigeration: Low GWP & A2L Refrigerant Safety Certification..... 36
- Refrigeration: Mitsubishi-City VRF Certification (NEW) 37

Safety

- @ Safety: Radio Frequency Awareness and Rooftop Safety 38
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- @ © Safety: Safe Lifting Techniques using Rigging, Cranes and Derricks 40
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- @ Safety: Crane Signaling Certification 43
- @ Safety: OSHA 10 44
- Safety: Trenching and Excavation Safety..... TBD

Apprentice enrichment training

The classes in this course catalog are also open to apprentices. If you're unsure if you have the appropriate foundational knowledge to enable you to safely take a course, please talk with your instructors first.

Pre-apprentice training

- PA Training: OSHA 10 (online)..... TBD
- PA Training: Use and Care of Tools..... TBD
- PA Training: How to be prepared for the jobsite TBD



Personal and Professional Development Classes

Note, classes in this section will be open exclusively to employees on referral from Local 725. Not all classes may be held in 2023; scheduling will depend upon the outcome of an upcoming survey.

APPROPRIATE FOR BOTH PIPEFITTERS & SERVICE TECHNICIANS:

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APPROPRIATE FOR PIPEFITTERS:

Professional Development: Jobsite planning: What to anticipate, how to be prepared.....	TBD
Professional Development: Introduction to project management	TBD
Professional Development: Scheduling.....	TBD
Professional Development: Managing Change Orders	TBD



CHILLER CLASSES

Chillers: Introduction to Chilled Water Systems Design	
Instructor:	Jesus Hernandez, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Chillers: Hydronic Heating and Cooling
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Identify the different types of chillers. • Be able to calculate flow through a vessel and pumps using trade-related formulas. • Describe a constant-flow chilled water-cooling system. • Be knowledgeable of the design schematic for both the air and water sides of a chilled water system. • Attendees will demonstrate proficiency in diagnosing and troubleshooting water side issues in chillers.
Class description	<p>This course provides foundational training appropriate for those who would like to begin servicing chilled water systems in commercial applications. The class will explore various chilled water systems using a Trane textbook that covers both constant flow and variable flow systems. In addition, the class will cover water flow through vessels such as chillers and air handing units (AHU). Students will have the opportunity to practice troubleshooting scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Chillers: Advanced Chilled Water Systems Design	
Instructor:	Jesus Hernandez, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of chilled water systems.
Prerequisite classes:	Chillers: Introduction to Chilled Water Systems Design
Related classes:	n/a
Location:	ARPEC
CEU Hours:	16
County JR License Credit:	Yes
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Recall concepts from the Introduction to Chilled Water System design class. • Identify chilled water system components. • Differentiate between different chilled water design systems. • Explain chiller and pump sequence. • Identify proper operating set points. • Understand the design and function of chilled water systems. • Be able to troubleshoot various chilled water flow issues. • Review various case studies and recommend corrective action for issues found in the case studies.
Class description	<p>This course provides advanced training appropriate for those who have some experience servicing chilled water systems in commercial applications. The course will explore both constant flow and variable flow water systems as well as the conversion from constant flow to variable flow systems. Additionally, low flow chillers and an in-depth case study of an existing chilled water system will be presented. Students will have the opportunity to practice troubleshooting scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Chillers: Annual System Maintenance and Operation	
Instructor:	Victor Soto, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of chillers.
Prerequisite classes:	n/a
Related classes:	Chillers: Introduction to Chilled Water Systems Design
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Understand the different types of equipment and associated systems that require annual maintenance. • Know the proper procedures and steps required to successfully perform annual maintenance on various systems and equipment. • Practice critical calculations and measurements to properly diagnose equipment and systems. • Be able to perform a full system analysis and proper annual maintenance on evaporators, condensers, and starters.
Class description	<p>This class provides a comprehensive overview of chiller maintenance and operations. By the end of the session the group will be able to confidently perform typical maintenance of systems encountered in the field. The class includes an overview of important calculations and analysis used in inspections and diagnosis of equipment and systems. The group will review evaporator and condenser maintenance as well as tube brushing and eddy current. We will discuss and compare methods of flow, starter maintenance and proper approaches and procedures. Knowledge gained in this class will be directly applicable to every service technician's job scope.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Chillers: Chilled Water System Flow Switches

Instructor:	Mario Campos, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of chillers.
Prerequisite classes:	n/a
Related classes:	Control Systems: Diagnostics and Troubleshooting
Location:	ARPEC
CEU Hours:	2
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Gain an elevated understanding of chiller safety. • Review and discuss different types of flow switches on chillers. • Explore how various flow switches work.
Class description	<p>This class provides a comprehensive overview of chiller flow switch devices. The group will review and discuss the various types of switches, how they work, and why they are important regarding safety. Types of switches reviewed include paddle flow switches, IFM effector switches, and differential pressure switches.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Chillers: Cooling Tower Operations and Maintenance	
Instructor:	Jose Rivera, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of chillers.
Prerequisite classes:	Chillers: Hydronic Heating and Cooling
Related classes:	Chillers: Introduction to Chilled Water Systems Design
Location:	ARPEC
CEU Hours:	3
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Understand how cooling towers work. Review and discuss the different types of cooling towers and components. Know proper procedures and be able to service and maintain cooling towers.
Class description	<p>This class provides a comprehensive overview of various cooling towers including common components, how cooling towers work, and formulas used in analyzing and diagnosing cooling towers. The group will discuss both closed and open circuit cooling towers as well as their typical components. By the end of class, students will understand the maintenance process and be able to successfully perform cooling tower service and maintenance on the job. The class will conclude with a lesson on water treatment as it applies to typical systems in the industry.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Chillers: Large-scale Chiller Refrigerant Evacuation and Recovery

Instructor:	Mario Campos, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of chillers.
Prerequisite classes:	HVAC Systems: Introduction to Service & Installation of HVAC Commercial Systems
Related classes:	Refrigeration: Recovery and Charging Refrigerant Practices
Location:	ARPEC
CEU Hours:	3 ½
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be familiar with various reasons for refrigerant recovery. • Know what steps to take before initiating refrigerant recovery. • Be able to safely and properly remove and recover refrigerant.
Class description	<p>This class trains mechanics how to properly recover low pressure refrigerant from a large chiller. By the end of the session students will understand the reasons for refrigerant recovery and will know exactly what needs to be done before refrigerant recovery and removal. The group will go over the low-pressure refrigerant charge formula and will review the recovery process in detail.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Chillers: Hydronic Heating and Cooling

Instructor:	Michael Didona, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	HVAC Systems: Introduction to Service & Installation of HVAC Commercial Systems
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Identify and understand the functionality of different piping systems. • Practice conversions from gallons per minute (GPM) to tonnage. • Know how to take pressure drop readings and convert pressure drop in feet to pounds per square inch (PSI). • Set up a make-up station pressure relief valve (PRV) assembly. • Be able to install 3-way mixing and diverting valves.
Class description	<p>This course provides an overview of a variety of different hydronic systems. This course, which is appropriate for both service and pipefitter mechanics, covers an array of different piping systems, their functions, and purposes of each component within each type of hydronic systems. The instructor will use drawings of different piping systems to demonstrate important system concepts. Students will have the opportunity to practice troubleshooting scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Chillers: Carrier Screw and Scroll Chiller Fundamentals

Instructor:	Carrier-certified trainers
Prerequisite skills:	Foundational knowledge of chillers.
Prerequisite classes:	Chillers: Introduction to Chilled Water Systems Design
Related classes:	Chillers: Maintenance and Operation of Screw Chillers
Location:	ARPEC
CEU Hours:	24 / three days
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Learn how to best operate, maintain, troubleshoot, and service Carrier's complete line of scroll and screw 30 series air- and water-cooled chillers.
Class description	<p>This class provides a comprehensive overview of Carrier's 30 Series Screw and Scroll Chillers.</p> <p>Students will be exposed to a variety of different packaged systems, including the various applications in which they are used, and their primary functions. Students will learn to read and use a psychrometric chart, understand unit sequence of operations and basic controls. Discussion will include wiring and point-of-use for packaged rooftop units.</p> <p>Topics include chiller refrigeration cycle, compressor theory, cooler heat transfer, and water- and air-cooled condensers. Students will be taught how to analyze performance by recording and analyzing refrigerant and water pressures and temperatures and calculating GPM flows. Additionally, this course will cover related refrigerant controls, adjustments, charging, capacity control and capacity testing, and operation. This course will also prepare students for troubleshooting electrical systems, including timers, temperature controllers, and operating and safety controls. Students will participate in lab exercises using the control simulators, allowing hands-on knowledge of chiller control operation</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

COMPRESSOR CLASSES

Compressors: Causes and Prevention of Compressor Failure	
Instructor:	Jay Cerione, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of compressors.
Prerequisite classes:	n/a
Related classes:	HVAC Systems: Introduction to Service & Installation of HVAC Commercial Systems; Compressors: Clean-up Procedure After Burnout
Location:	ARPEC
CEU Hours:	3 ½
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be able to diagnose root causes of initial compressor failure. • Be familiar with types of compressor failures and the reasons why compressors fail. • Know how to prevent repeat compressor failures.
Class description	<p>This highly interactive class provides a detailed study of the three most common types of compressor failures and seven recurring reasons why compressors fail. Students will be asked to share their knowledge and experiences with compressor failures. By the end of the session, students will be able to diagnose the root cause of the initial failure and be able to take preventative measures to avoid repeat failures. Students will have the opportunity to practice troubleshooting scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Compressors: Clean-up Procedure After Burnout

Instructor:	Jay Cerione, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of compressors.
Prerequisite classes:	Compressors: Causes and Prevention of Compressor Failure
Related classes:	HVAC Systems: Introduction to Service & Installation of HVAC Commercial Systems
Location:	ARPEC
CEU Hours:	3 ½
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Have clear understanding of burnout and the different types of burnouts that occur. • Identify the contaminants that are created because of burnout. • Be able to perform the proper procedure for cleaning a system.
Class description	<p>This class provides an in-depth study of issues pertaining to compressor burnout. Students will explore the difference between a mild and severe burnout and will learn to identify the different contaminants created. The group will discuss what causes burnout and learn the correct procedure for cleaning out the system and related contaminants. This highly interactive class will include opportunities to discuss experiences and see different system components and materials provided for the cleanup process. Students will have the opportunity to practice handling a variety of scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Compressors: Using Megohmmeters (Megging) For Diagnostics

Instructor:	Robert Martin, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of troubleshooting using a Multimeter.
Prerequisite classes:	Electricity: Introduction to using Multimeters and Troubleshooting
Related classes:	n/a
Location:	ARPEC
CEU Hours:	3 ½
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Confidently use a Megohmmeter (megger) to troubleshoot and test a motor. • Have experience using and diagnosing motors using a megger during shop time.
Class description	<p>This course introduces using a megger to troubleshoot and test a motor. Students will be taught proper procedures and the meanings of resistance readings. The group will practice setting up and connecting a megger for the right voltage levels depending on the motor applications. Students will have the opportunity to practice applying voltage to different motors and comparing different readings of motor resistance up and down the scale of good to bad motors.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

CONTROL SYSTEMS CLASSES

Control Systems: Introduction to Pneumatic Controls	
Instructor:	Josue Labrador, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Control Systems: Diagnostics and Troubleshooting
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Understand how pneumatic controls work. • Be able to identify the different parts and equipment of pneumatic systems. • Be able to maintain and troubleshoot pneumatic systems.
Class description	<p>This class includes an overview of how pneumatic controls work as well as identifying the key system components and the operations, installation, and troubleshooting pneumatics. Students will learn how to calibrate components using a Pneumatics Kit, plumb a variable air volume (VAV), and learn how to maintain an air compressor plant. Whether students are new to the service side of the industry or simply want to know more about building automation and efficiency this class will provide a foundational overview of these systems and how they work.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Control Systems: Diagnostics and Troubleshooting	
Instructor:	Josue Labrador, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of electricity.
Prerequisite classes:	n/a
Related classes:	Electricity: Introduction to using Multimeters and Troubleshooting
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Be able to identify control components. Be able to diagnose electrical control circuits. Identify control circuit issues and troubleshoot. Troubleshoot electrical control circuits. Be able to wire both series and parallel circuits using electrical components.
Class description	<p>This class provides an overview of various controls components that can be found in a control circuit. After completing this class, technicians will be able to confidently diagnose and troubleshoot related issues in the field. This training applies to both service technicians and pipefitters who work with HVACR systems that contain control circuits for operational purposes. Students will have the opportunity to practice handling a variety of troubleshooting scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Controls Systems: Variable Frequency Drives (VFD)

Instructor:	Luis Lopez, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of electrical components.
Prerequisite classes:	n/a
Related classes:	Control Systems: Diagnostics and Troubleshooting
Location:	ARPEC
CEU Hours:	16
County JR License Credit:	Yes
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be able to identify primary purpose of components located within the variable frequency drive. • Verify proper operations of components. • Diagnose deficiencies and troubleshoot VFDs. • Start up and commission new VFDs.
Class description	<p>Changes in technology in the HVAC industry has led to increasing prevalence of the use of VFDs in both residential and commercial applications. Upon completion of this class, students will be able to confidently diagnose and troubleshoot VFDs and conduct startup and commissioning of new VFDs. Discussion will include an overview of the operation of each component and subcomponent of a VFD. Students will learn how a VFD functions and understand the wiring and programming of a VFD, including practice performing VFD startup, programming, and wiring during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

ELECTRICITY CLASSES

Electricity: Introduction to Electricity	
Instructor:	Luis Campos, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Electricity: Introduction to using Multimeters and Troubleshooting
Location:	ARPEC
CEU Hours:	14
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Understand how OHM's Law applies in both series and parallel circuits. Be able to identify electrical symbols and components. Understand the functions and use of a digital multimeter. Be able to wire both series and parallel circuits using electrical components. Be able to use a multimeter to obtain electrical readings, including such as voltage, current and resistance. Understand a wiring diagram and sequence of operation.
Class description	<p>Students who attend this course will obtain fundamental electrical theory including OHM's Law principles, electrical component identification and operation, and apply proper digital multimeter practices to obtain electrical readings on our training boards. Students will understand the construction of a wiring diagram and explain the sequence of operation for an electrical circuit. Students will have the opportunity to gain hands-on experience using our training boards on wiring and troubleshooting using electrical trainers</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Electricity: Introduction to using Multimeters and Troubleshooting	
Instructor:	Luis Campos, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of electricity.
Prerequisite classes:	n/a
Related classes:	Compressors: Using Megohmmeters (Megging) For Diagnostics Compressors: Variable Frequency Drives (VFD)
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be knowledgeable of the essential functions of a multimeter and appropriate applications in the field. • Understand the design and application of a ladder diagram • Have experience using a multimeter in various settings and projects in the shop.
Class description	<p>This class introduces the essential functions of a multimeter and how to properly check and inspect a meter for proper operation. Students will learn ladder diagram design, sequence of operations in a ladder diagram, key electrical components, and wiring and troubleshooting of a ladder diagram. In addition, the instructor will guide students through a hands-on demonstration and explanation of the various electrical components. Students will have the opportunity to practice using a Fluke 115 meter in a variety of scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Electricity: Wye-Delta Starter Operation and Troubleshooting	
Instructor:	Craig Ponton, Local 725 Journeyman
Prerequisite skills:	Knowledge of electricity in commercial HVAC applications.
Prerequisite classes:	Electricity: Introduction to using Multimeters and Troubleshooting
Related classes:	n/a
Location:	ARPEC
CEU Hours:	3 ½
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Understand the fundamentals of wye-delta design theory as a method to reduce voltage to motors during starting. • Be familiar with wye-delta sequence of operations. • Know how wye-delta works and how it is used.
Class description	<p>This class provides students with a foundational knowledge of wye-starter principles in relation to electric motors. The subject matter covered in this class will be helpful for both service and pipefitter mechanics and will increase the mechanic's industrial chiller starter knowledge. The group will explore both theory and application concepts.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

GENERAL CLASSES

HVAC Systems: Introduction to Service & Installation of Commercial Systems	
Instructor:	Jay Cerione, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Electricity: Introduction to using Multimeters and Troubleshooting
Location:	ARPEC
CEU Hours:	16
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Know how heat transfers in an operating system. • Understand service systems and accessories. • Review and discuss several types of service call scenarios and system diagnostics. • Be able to apply service installation procedures and skills.
Class description	<p>This course introduces a wide array of HVAC service-related topics and equipment, including compressors, pumps, split systems, air handler units (AHU) and chillers. The class will cover various types of systems, applications, and their installation procedures. Students will have the opportunity to engage in class discussions and practice scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Pumps: Water Pump Operation and Troubleshooting	
Instructor:	Victor Soto, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of pumps.
Prerequisite classes:	n/a
Related classes:	Chillers: Introduction to Chilled Water Systems Design
Location:	ARPEC
CEU Hours:	3 ½
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Be able to identify various pumps and how they are used. Be knowledgeable about pump performance and efficiency curves. Be familiar with pump installation and maintenance procedures. Know how to size a pump for its intended use.
Class description	<p>This class provides an overview of a wide range of pump-related topics. Students will learn to identify different pumps, key pump components and functions. The instructor will teach the group how to use and read pump curves as well as how to correctly size a pump. The second half of class will involve learning best practices for pump installation. Mechanics will leave class with the tools needed to troubleshoot and service chilled and condenser water pumps.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Pumps: Pump Alignment	
Instructor:	Victor Soto, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Pumps: Water Pump Operation and Troubleshooting
Location:	ARPEC
CEU Hours:	8
County JR License Credit:	Yes
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Demonstrate how to properly align horizontal split case pumps and differentiate between parallel, angular, and axial misalignment • Comprehend the causes of machine breakdown due to misalignment • Learn different alignment methods and practices • Demonstrate proper use of a dial indicator as an alignment tool
Class description	<p>This class provides an introduction to best practices for shaft alignment for horizontal split case pumps. Students will have the opportunity to practice handling a variety of alignment scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>



Boilers: Introduction to Boilers	
Instructor:	Kevin Roy, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Chillers: Hydronic Heating and Cooling
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be able to identify the different types of boilers. • Be able to understand essential controls for boilers. • Recognize potential safety risks and warning signs of a boiler failure. • Practice troubleshooting and diagnosing boiler issues
Class description	<p>This class provides an overview of the different types of boilers and their functionality. Students will learn to identify all the parts of a boiler and their safety control devices and will be able to recognize potential safety risks and warnings signs of a malfunctioning boiler while in operation. Students will also learn how to diagnose and troubleshoot common issues. Attendees will learn proper piping arrangement for boilers. Students will have the opportunity to practice handling a variety of troubleshooting scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Journeyman License Preparatory Class	
Instructor:	Various Local 725 Journeymen
Prerequisite skills:	Three years of work experience in the trade.
Prerequisite classes:	n/a
Related classes:	n/a
Location:	ARPEC
CEU Hours:	14
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Be knowledgeable of the Journeyman license application process. Know how to appropriately study to successfully pass the county-issued Journeyman Licensure Exam.
Class description	<p>This class prepares students to successfully pass the Broward or Miami-Dade County Licensure Exam.</p> <p>Each ARPEC apprentice is required to obtain their county-issued Journeyman license as part of the criteria to graduate and become a Local 725 Journeyman. This long-standing requirement ensures that all who graduate from ARPEC have obtained sufficient training consistent with the Journeyman licensure exam.</p> <p>Those who completed all 5 years of the ARPEC apprenticeship program but did not obtain their license may not be referred out as Journeymen and are instead “held in category” and their employer is required to pay them 5th year apprentice wages & benefits. Those who are working as “held in category” are invited to participate in this preparatory class and are encouraged to obtain their license and earn Local 725 Journeyman status.</p> <p>Additionally, newly-unionized Employees who did not complete the apprenticeship program are encouraged to participate and obtain their Journeyman license.</p> <p>This preparatory course is offered multiple times throughout the year to help prepare current apprentices, former apprentices held in category, and newly unionized employees obtain their Journeyman license.</p>

Packaged Unit: Maintenance and Operation of Dedicated Outside Air Systems (DOAS)	
Instructor:	Victor Soto, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of Packaged Units
Prerequisite classes:	n/a
Related classes:	Chillers: Introduction to Chilled Water Systems Design
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Understand the difference between comfort cooling units and 100% outside air units. Know how a dedicated outdoor air systems (DOAS) system works. Gain knowledge on the functions and uses of different packaged systems.
Class description	<p>This class provides a comprehensive overview of dedicated outdoor air systems (DOAS). Students will be exposed to a variety of different packaged systems, including the various applications in which they are used, and their primary functions. Students will learn to read and use a psychrometric chart, understand unit sequence of operations and basic controls. Discussion will include wiring and point-of-use for packaged rooftop units.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

PIPEFITTING AND WELDING CLASSES

Pipefitting: Pipe Fabrication Using Victaulic Couplings, Fittings and Systems	
Instructor:	Kenneth Appollo, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Pipefitting: Trigonometry for Pipe Fabrication
Location:	ARPEC
CEU Hours:	3 ½
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Be familiar with old and new couplings and systems for connecting standard steel pipe. Be able to discuss systems and techniques. Have experience applying and practicing skills and use the PVC groove machines.
Class description	<p>This class provides an introduction to use of Victaulic couplings, fittings, and systems. At some point in their career, every Journeyman – both service technicians and pipefitters – will encounter installation or removal of Victaulic couplings. This class will include a review of the latest systems including PVC and steam systems. Students will also learn how to use Victaulic groove tape to check for proper groove depth. Students will have the opportunity to practice using the steel and PVC groove machines, install Victaulic fittings on pipe, learn to mark a straight-line pipe using a wrap-around, and cut pipe with a portable bandsaw.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Pipefitting: Trigonometry for Pipe Fabrication	
Instructor:	Brian Coile, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Pipefitting: Pipe Fabrication Using Victaulic Couplings, Fittings and Systems
Location:	ARPEC
CEU Hours:	8
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be able to use formulas to correctly calculate piping offsets, including rolling offsets. • Be knowledgeable of the anatomy of a piping offset. • Be able to accurately cut and fit piping offsets.
Class description	<p>This class provides a review of how to correctly calculate piping offsets. and provides a refresher for those needing additional practice using trigonometry formulas. The class will include examples and application of formulas commonly encountered in the work environment. The instructor will demonstrate how to draw the offset and solve without the use of a formula. The instructor will modify the class approach and offer one-on-one training based on the needs of each student and the group interests. Students will have the opportunity to practice cutting and fitting offsets using formulas during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Welding: Introduction to Soldering and Brazing	
Instructor:	Eric Rives, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Welding: Brazing Dissimilar Metals
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Know the difference between the soldering and brazing process. • Be able to identify the proper use of soldering and brazing filler metals and fluxes. • Demonstrate correct joint preparation assembly. • Identify the various types of heating equipment used for soldering and brazing. • Demonstrate safe soldering and brazing practices.
Class description	<p>This class provides an introduction to safe brazing and soldering practices following theory covered in the <i>UA Soldering and Brazing</i> textbook. Students will learn best practices for safely soldering and brazing, types of heating equipment, and proper joint preparation. Students will have the opportunity to practice and will be asked to complete a copper project including soldering and brazing joints. Projects will be pressured tested for leaks and students will learn how to repair leaks.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Welding: Introduction to Shielded Arc Metal Welding (SMAW)	
Instructor:	Kevin Bashansci, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Welding: Welding Practices and Procedures
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Identify the different types of welding equipment and PPE used for shielded metal arc welding (SMAW). • Identify the different groups of electrode classification and how to select the proper electrode. • Demonstrate the principles of sustaining a welding arc and how to check and adjust the welding equipment. • Demonstrate the essentials of arc welding, including proper arc length, travel speed, and electrode angle. • Perform various welding exercises such as depositing a continuous bead, moving the electrode in different directions, starting, and restarting the arc. • Demonstrate weld passes in flat, horizontal, and vertical positions
Class description	<p>This course will provide an introductory training to Shielded Arc Metal Welding (SMAW) procedures. Attendees will learn about the required PPE needed for welding. Also, attendees will learn the different types of welding machines, and how to set up their equipment. This class will be held in the welding shop and will entail practical experience in striking an arc and depositing a continuous bead. Students will have the opportunity to practice various welding exercises that include welding in different welding positions during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Welding: Advanced Shielded Arc Metal Welding (SMAW)	
Instructor:	Michael Didona, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of SMAW welding.
Prerequisite classes:	Welding: Introduction to SMAW Welding
Related classes:	Welding: Introduction to Soldering and Brazing
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Know how to properly set up welding machines and equipment. • Know correct welding safety requirements. • Experience practicing a variety of welding methods • Test and become certified in 2G, 5G and 6G, if desired.
Class description	<p>This course will include advanced guided instruction with a seasoned welding instructor. Instruction will be tailored to each student's proficiency and desire to improve upon their skills. This class will be held in the welding shop and will entail ample opportunities to practice Shielded Arc Metal Welding (SMAW). At the conclusion of the class, students will be encouraged to participate in testing to become certified in welding (optional).</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Welding: Brazing Dissimilar Metals	
Instructor:	Hector Rivera, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of soldering and brazing.
Prerequisite classes:	Welding: Introduction to Soldering and Brazing
Related classes:	n/a
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Understand how to safely braze different metals. Determine which metals are suitable for brazing, learn about joint preparation procedures, assembly, and the appropriate brazing process for each combination of metals. Have experience brazing dissimilar metals in the shop.
Class description	<p>This class provides instruction on how to make repairs to piping systems that include different metals commonly encountered in the field environment. Topics covered include types of different metals that can be brazed, filler metals, joining techniques and typical applications in our industry. Students will have the opportunity to practice brazing copper to steel, stainless steel to copper, and brazing aluminum coils.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Welding: Tungsten Inert Gas (TIG) and Arc Welding	
Instructor:	Kishon Dryden, Local 725 Journeyman
Prerequisite skills:	Advanced welding skills.
Prerequisite classes:	Welding: Advanced Shielded Arc Metal Welding (SMAW) Best Practices
Related classes:	n/a
Location:	ARPEC
CEU Hours:	8
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be familiar with the fundamentals of Tungsten Inert Gas (TIG) welding. • Be familiar with welding rods, gas, and gas assembly. • Know how to assemble torch and operate machine. • Have experience practicing TIG welding in shop environment.
Class description	<p>This class will focus on present an introduction to TIG welding including how to assemble a TIG torch, and how to operate the torch in conjunction with the weld machine. Students completing this class will become comfortable using a torch and welding machine on their own. Each student will have access to a TIG machine and will practice assembling the torch, prepping their materials, and welding on pipe. Students will have the opportunity to practice operating the machine and selecting the appropriate gas and welding rod during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

REFRIGERATION CLASSES

Refrigeration: Introduction to Principles and Service Guidelines	
Instructor:	Jose Rivera, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	HVAC Systems: Introduction to Service & Installation of HVAC Commercial Systems
Location:	ARPEC
CEU Hours:	3
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be familiar with key refrigeration concepts. • Be knowledgeable of heat transfer terminology used in the HVAC industry. • Be familiar with subcooling, superheat, and system charge. • Understand refrigerant pressures, states, and conditions.
Class description	<p>During this class, students will gain knowledge on a wide range of refrigeration and HVAC principles. The instructor will cover the various components of a typical HVAC system and will discuss advantages and disadvantages of each. The group will learn how to verify refrigerant charge on DX or flooded systems and will practice diagnosing properly charged systems. There will be plenty of time for robust discussion and opportunities to ask questions. The instructor will share lessons learned during his career to help students avoid common mistakes.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>



Refrigeration: Introduction to Recovery and Charging Refrigerant	
Instructor:	Mario Campos, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Refrigeration: Introduction to Principles and Service Guidelines
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Confidently evacuate and recover refrigerant using best practices, including EPA-approved equipment, including recovery tanks, digital scales, and vacuum pumps. • Demonstrate how to put a system under a vacuum and understand the required evacuation levels during recovery. • Learn how to pressure test a system using nitrogen. • Execute proper leak checking techniques • Understand how to properly charge a system and demonstrate using proper charging methods.
Class description	<p>This course will provide introductory training on evacuating and recovering refrigerants in both residential and light commercial applications. Students will have the opportunity to practice handling refrigerant recovery and charging scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Refrigeration: Introduction to VRV / Multi-split Technology	
Instructor:	Marbyn Ponce, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of HVAC systems.
Prerequisite classes:	n/a
Related classes:	Refrigeration: Introduction to Principles and Service Guidelines HVAC Systems: Introduction to Service & Installation of Commercial Systems
Location:	ARPEC
CEU Hours:	3 ½
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Understand manufacturer guidelines regarding refrigerant. • Know the proper installation of equipment in accordance with local code requirements. • Gain familiarity with different types of systems.
Class description	<p>This class provides foundational training appropriate for those with little experience or training on how to safely handle refrigerants. Students will be taught manufacturer guidelines and how to properly install equipment. The instructor will provide an overview of different systems and system operations. The instructor will modify the class approach and discussions based on the needs of each student and the group's interests. Students will have the opportunity to practice handling a variety of scenarios during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>



Refrigeration: Introduction to Ice Machines	
Instructor:	Jesus Hernandez, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of refrigeration.
Prerequisite classes:	Refrigeration: Introduction to Principles and Service Guidelines
Related classes:	Refrigeration: Rack Refrigeration
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be familiar with ice machine system components. • Be familiar with service and maintenance procedures for commonly used ice machines and service procedures. • Confidently troubleshoot and diagnose ice machines and ice flakers.
Class description	<p>This class provides an introduction to ice machines, including service, diagnostics and troubleshooting. The group will review ice machine sequencing, operations, and settings. Students will have the opportunity to practice operating ice machines during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>



Refrigeration: Rack Refrigeration	
Instructor:	Jesus Hernandez, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of refrigeration.
Prerequisite classes:	Refrigeration: Introduction to Principles and Service Guidelines
Related classes:	Refrigeration: Introduction to Ice Machines
Location:	ARPEC
CEU Hours:	16
County JR License Credit:	Yes
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Understand refrigeration system components. • Be knowledgeable of parallel refrigeration systems' control sequences. • Confidently troubleshoot refrigeration system controls issues. • Understand refrigeration cycle mode operations.
Class description	<p>This course provides intermediate training appropriate for those who have some experience working with refrigeration. Concepts covered apply to refrigeration systems used in both warehouse and supermarkets. Students will gain a clear understanding of various system components as well as parallel refrigeration systems' control sequences. After completing this class, technicians should feel confident identifying and troubleshooting issues in the field. Students will have the opportunity to practice handling a variety of troubleshooting scenarios using contemporary refrigeration equipment including rack systems and walk-in coolers during shop time.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Refrigeration: Low GWP & A2L Refrigerant Safety Certification	
Instructor:	Jay Cerione, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of HVAC.
Prerequisite classes:	EPA 608 certification
Related classes:	Refrigeration: Introduction to Recovery and Charging Refrigerant Practices
Location:	ARPEC
CEU Hours:	8
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Obtain A2L refrigerant safety certification. • Demonstrate proper service and installation requirements for systems containing mildly flammable refrigerants. • Understand proper brazing techniques and requirements for low GWP refrigerants. • Understand proper safe handling and proper transporting of A2L and slightly flammable refrigerants.
Class description	<p>This class provides an introduction to best practices related to safe handling of the low Global Warming Potential (GWP) and A2L subgroup of refrigerants, which are a class of refrigerants that have lower toxicity and flammability.</p> <p>Students will learn about the combustion and thermal decomposition of these new refrigerants as well as proper installation practices for HVACR equipment that require low GWP refrigerants and A2L refrigerants.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Refrigeration: Mitsubishi-City VRF Certification	
Instructor:	Mitsubishi Certified Instructors
Prerequisite skills:	Foundational knowledge of HVAC.
Prerequisite classes:	HVAC Systems: Introduction to Service & Installation of Commercial Systems
Related classes:	Refrigeration: Introduction to Variable Refrigerant Volume (VRV) / Multi-split Technology
Location:	Trane / Mitsubishi Training Center
CEU Hours:	24 / three days
County JR License Credit:	No
Class objectives	<p>Upon completion of this program, students will:</p> <ul style="list-style-type: none"> • Learn installation essentials and best practices. • Learn control and system set up using Diamond Builder software. • Master service essentials, including system operation, diagnostics and troubleshooting.
Class description	<p>Attendees who complete this three-day course will receive a certificate of completion and will be registered in Mitsubishi system as certified installers of the CITY MULTI VRF equipment.</p> <p><u>Day 1 - Installation Essentials:</u> Gain an in-depth discussion of the techniques associated with properly installing commercial CITY MULTI systems. Instruction focuses on the best practices, limitations, and manufacturer's requirements as they pertain to wiring, addressing, refrigerant piping, and equipment installation.</p> <p><u>Day 2 - Control and System Setup:</u> This course provides hands-on experience building systems using Diamond System Builder™ design software. Participants learn Mitsubishi Electric's warranty process and the steps to register products once they have been installed. The concepts of integration and centralized control are discussed as well as the proper steps for system start-up.</p> <p><u>Day 3 - Service Essentials:</u> This course provides an in-depth functional examination of system operation including both the electrical and refrigerant circuits. In addition, the resources and techniques to diagnose and troubleshoot CITY MULTI systems are discussed. Practical hands-on exercises to identify faults and repair select units reinforce the concepts covered.</p> <p>Classroom Requirements: This course requires a laptop. See registration page for details.</p>

SAFETY CLASSES

Safety: Radio Frequency Awareness and Rooftop Safety	
Instructor:	Craig Ponton, Local 725 Journeyman
Prerequisite skills:	Foundational knowledge of use of multimeters.
Prerequisite classes:	n/a
Related classes:	Safety: OSHA 10
Location:	ARPEC
CEU Hours:	3
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Gain a clear understanding of Radio Frequency (RF), its sources, and important safety concerns. Know the effects of RF on the human body and be able to identify symptoms and key exposure parameters. Be able to take appropriate action if overexposure occurs. Take necessary preventative measure to avoid RF hazards and exposure.
Class description	<p>This class will provide comprehensive training on all aspects of RF and related safety concerns. The group will first explore what RF is and what it isn't. Students will learn about exposure levels and be able to quickly identify symptoms of overexposure. The group will also discuss how overexposure is typically treated and what you should do if a coworker is subjected to RF. Students will learn how to use and operate a peak program meter (PPM) to detect the presence of RF at their worksite. Students will discuss critical signage as the first line of defense to RF exposure and leave with important knowledge and tools to stay safe on the job.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Safety: Introduction to First Aid, CPR and AED Training	
Instructor:	Edmund Hunte, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Safety: OSHA 10
Location:	ARPEC
CEU Hours:	8
County JR License Credit:	No
Class Objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Be prepared to quickly assess medical and injury-based emergencies and determine appropriate first aid treatment. Obtain First Aid and Cardiopulmonary Resuscitation (CPR) certification. Be prepared to provide basic first aid or CPA in a safe, timely and effective manner in critical situations. Perform proper life saving techniques using an automated external defibrillator (AED)
Class description	<p>This class, led by a UA-certified CPR instructor, will train students how to respond in a cardiac or first aid-related emergency. Students will be taught how to deliver initial medical emergency procedures using a limited amount of equipment to perform a primary assessment and intervention while awaiting arrival of emergency medical service (EMS) personnel.</p> <p>Upon completion of class, students will be more confident in their ability to apply First Aid, including CPR and AED use appropriately in a variety of situations. In addition, the group will learn important heart health information that can be used to keep themselves and their loved ones safe and decrease risk of heart disease and other heart issues.</p> <p><i>This class includes both classroom instruction and hands-on practice of CPR and first-aid techniques.</i></p>



Safety: Safe Lifting Techniques Using Rigging, Cranes & Derricks	
Instructor:	Michael Didona, Local 725 Journeyman
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Safety: Crane Signaling Certification
Location:	ARPEC
CEU Hours:	8
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be knowledgeable of OSHA’s crane and derrick signal standards. • Be able to demonstrate various rigging techniques. • Be able to calculate weights. • Be able to identify unsafe rigging methods, materials, and slings.
Class description	<p>This class provides mechanics with an introduction to industry-related lifting techniques, including use of OSHA’s designated crane signals, crane limitations, and procedures for operating and working around cranes. Instruction will include working hands-on with a variety of rigging techniques, including inverting a pump from a horizontal position. Students will also learn how to use proper rigging techniques as well as how to identify and avoid hazards and unsafe conditions.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>



Safety: Lockout Tagout Procedures	
Instructor:	Instructors certified by Master Lock®
Prerequisite skills:	Foundational knowledge of electricity.
Prerequisite classes:	Electricity: Introduction to Electricity
Related classes:	Safety: NFPA 70E Arc Flash Training Safety: OSHA 10
Location:	ARPEC
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be able to discuss a variety of lockout components. • Practice proper lockout / tagout procedures on different types of equipment. • Understand why proper lockout and tagout procedures are crucial for jobsite safety. • Be able to identify incorrect lockout / tagout approaches.
Class description	<p>This class provides instruction on electrical safety led by instructors certified by Master Lock®. Students will gain critical training on proper Lockout / Tagout procedures needed to prevent severe injury or death. Students will practice lockout and tagout procedures on a variety of equipment commonly encountered in the field.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Safety: NFPA 70E: Arc Flash Training	
Instructor:	Instructors certified by Master Lock®
Prerequisite skills:	Foundational knowledge of electricity.
Prerequisite classes:	Electricity: Introduction to Electricity
Related classes:	Safety: Lockout Tagout Procedures Safety: OSHA 10
Location:	ARPEC
CEU Hours:	16
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Understand current NFPA 70E rules and requirements. Identify electrical hazards and respond appropriately to accidents. Read arc flash data and apply hazard warning information. Select, use, and care for safety PPE, testing equipment, and tools. Be familiar with best practices for electrical preventive maintenance. Be able to apply their knowledge of arc flash safety in real world situations.
Class description	<p>This course, presented by Instructors certified by Master Lock®, will provide in-depth NFPA 70E Arc Flash training. Students will learn valuable skills needed to save lives, prevent disabling injuries, and prevent damage to plants, buildings, and equipment by following this important safety standard. Students will gain an immense respect for the power of electricity and leave armed with the necessary knowledge of NFPA 70E and how it applies to their work around energized electrical equipment. This course also helps companies meet their OSHA training obligations and current NFPA training standards. Students will learn specific hazards, warnings, and preventative electrical safety procedures necessary to keep themselves and those around them safe.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>



Safety: Crane Signaling Certification	
Instructor:	Mike Smith, Director of Apprenticeship, Int'l Union of Operating Engineers Local 487
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Safety: Safe Lifting Techniques Using Rigging, Cranes & Derricks
Location:	IUOE Local 487
CEU Hours:	7
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Confidently use OSHA 1926.1400 and ASME B30.3 and B30.5 approved hand signals. Learned proper voice communication between a signal person and crane operator. Know the correct safety techniques when dealing with clearings of power lines. Learn crane capacities and capabilities. Upon successful completion of both the written exam and practical exam attendees will receive a crane signaling qualification certificate.
Class description	<p>This class is comprised of classroom training in regard to hand signal and radio commands for effective communication with crane operators. Attendees will take a written exam and a practical exam that includes performing proper hand signaling and radio commands to safely move various loads through obstacles. Upon successful completion of both the written exam and practical exam attendees will receive a crane signaling qualification.</p> <p><i>This class includes both classroom instruction and shop application of concepts learned.</i></p>

Safety: OSHA-10	
Instructor:	Various instructors
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	Safety: OSHA 30 Safety: Introduction to First Aid CPR and AED Training
Location:	ARPEC or online
CEU Hours:	10
County JR License Credit:	n/a
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Have a foundational knowledge of safety and health information related to performing the work of our trade, including fall hazards, caught-in or -between hazards, struck-by hazards and electrocution. • Upon completion of this course, students will receive an official OSHA 10 card in construction.
Class description	<p>This class provides basic safety and health information to entry-level workers in the construction trades. It is part of the OSHA Outreach Training Program, which explains serious workplace hazards, workers' rights, employer responsibilities and how to file an OSHA complaint. The OSHA 10-Hour Construction course is designed for entry-level workers in construction, demolition, building development and other fields in the construction industry. It includes a detailed overview of the most common risks of construction work, including fall hazards, caught-in or -between hazards, struck-by hazards and electrocution. Upon completion of this course, students will receive an official OSHA 10 DOL card in construction.</p> <p>This course is required for all Preapprentices working under CBA section 6.04 F, Preapprentices in admissions Process.</p>

PERSONAL AND PROFESSIONAL DEVELOPMENT CLASSES

Professional Development: Communications Skills	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	4
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Gain a clear understanding of communication styles and how communication style affects how others interact with you. • Learn how to adapt to other communication styles and use this knowledge to improve relationships with internal and external customers. • Be able to gain better results through communicating effectively and with purpose. • Explore different communication methods and apply strategies to increase the impact of the messages we send to others.
Class description	<p>Being a good communicator is the foundational skill necessary to excel in all other leadership competencies. In this workshop participants will learn about different communication styles and identify their own communication preferences. The group will learn how to leverage their communication style to achieve goals and gain confidence in their day-to-day conversations. The class will come away with tools to be more successful in all of their relationships through better communication. The group will practice applying what they learn to specific construction and service situations. In addition, the class will cover why it is critical to understand how others communicate and why it is important to be able to adapt to styles that offer a different perspective to the issue or topic at hand.</p> <p>Class includes an individual DISC assessment.</p>

Professional Development: Effective Decision-Making	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	4
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Explore what drives people to make rushed or poorly thought-out decisions and discuss potential strategies to avoid these pitfalls. Practice using a variety of problem-solving tools to help drive results. Understand how to use critical thinking to help make decisions that lead to successful outcomes on the job.
Class description	<p>During this workshop participants will explore decision making from a project and team perspective. To lay the foundation, the group will explore their own decision-making styles and analyze how it impacts the way they make decisions in various situations. In order to improve a person's decision-making process, we must first explore how poor decisions are often made and the long-lasting results it can lead to. Once we have laid the foundation, we will work on improving our team decision process and learn how to get the best decisions and results for your groups. The group will learn the benefits of strategic thinking and making decisions that lead to long term success and accomplishment of goals. Making good decisions leads to impactful results and improves moral and accountability.</p>



Professional Development: Accountability	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	3
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Know how to hold themselves accountable in all aspects of life and take ownership of opportunities, successes, and failures. • Know how to create a culture of accountability and begin shifting the accountability conversation in the workplace. • Discuss accountability challenges on the job and explore strategies to increase productivity and motivation.
Class description	<p>In this workshop participants will explore what accountability really means and how they can leverage this skill to improve their job effectiveness. The group will explore the blame cycle and how to move themselves from blame to accountable and stop being a victim of their own circumstance. In addition, participants will learn how to apply agreed upon accountability strategies to move our teams from stagnant to growth mode. And finally, the group will explore what it means to have a culture of accountability where the company fails and succeeds together. Individuals will learn how to begin shifting the accountability conversation in the workplace and on the job site.</p>



Professional Development: Conflict Management	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	4
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Understand the importance of conflict conversations as leaders of our organizations. • Shift their perspective in regard to how conflict is viewed. • Identify the impacts of poorly managed conflict conversations. • Learn the role of emotional intelligence and trust in conflict. • Improve their ability to have conflict conversations that drive positive outcomes and improve relationships.
Class description	<p>By the end of the session participants will be able use a variety of leadership skills and specific conflict resolution strategies to gain positive results and improve relationships. Leaders will be able to strategically guide themselves and their teams through conflict situations. In addition, the group will know the benefits of shifting how they view conflict and be able to use natural conflict situations in their environment as an opportunity to build trust and better relationships with those in their sphere of influence. Attendees will practice applying strategies to a variety of real-world construction and service situations. The class will also learn how to effectively deal with difficult coworkers that are often the roadblocks to successful conflict resolution.</p>

Professional Development: Effective Delegation	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	3
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Shift their mindset when it comes to the best use of your time. • Learn to delegate responsibilities not tasks. • Apply principles of effective delegation to achieve personal, team and organizational growth. • Be able to remove delegation roadblocks to enable your success as well as the success of others.
Class description	<p>During this session participants will gain a clear understanding of the true power of delegation and learn how to grow themselves and their team through properly delegating tasks and responsibilities. The group will practice applying principles of effective delegation to achieve personal, team and project success. Individuals are only as good as the team around them and being an effective delegator enables your team to continuously grow, excel, and transform. Participants will learn what holds them back from effectively delegating and understand that true personal and career growth can't happen without creating time to work on new challenges and opportunities afforded us through transferring responsibilities to others.</p>

Professional Development: Coaching and Mentoring: Journeyman and the Apprentice Relationship	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	4
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Know the important role Journeyman play in Apprentice skill and confidence development. • Learn how to engage and transfer knowledge through a variety of learning styles and approaches. • Have the skills to be an effective coach and mentor to apprentices at any level. • Build effective relationships with your field teams and get the best out of those around you.
Class description	<p>This workshop will focus on the critical role Journeyman play in the growth and development of their team members. Critical training and skill transfer happens on the job and this course will explore the need for Journeyman to be an educator in the field to apprentices and teammates. The group will gain a new perspective about the Journeyman/apprentice relationship and understand the value of this relationship to the project and the organization. Participants will practice identifying development levels and applying the right coaching and mentoring approaches to build both skill level and confidence.</p>



Professional Development: The Business of Mechanical Contracting	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	4
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Analyze and understand job cost and project risk factors from a field perspective. • Know how revenue and profits are created from the project. • Understand their role in influencing key project cost factors. • Learn the real cost of doing business in the mechanical contracting industry. • Identify the elements of the real cost of an hour of labor. • Explore structure and market segments of the mechanical contracting industry.
Class description	<p>All field employees need to understand the impact they have on the financial outcomes of both the project and the company. As the first line of defense, the field has an important role in project financial goals and performance. By the end of this course, participants will understand why they should care about company financial performance and learn the key indicators of financial success on the job. The group learn how to look at their project through business lens and explore general business structure as well as typical industry markets.</p>

Professional Development: Motivation Skills	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	3
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Understand the importance and impact motivation has on personal and project productivity. • Know the key elements of motivation and what causes employees to engage with their work and with their coworkers. • Discuss motivation strategies at the individual and team level.
Class description	<p>Motivation is the key to productivity. What gets us out of bed in the morning and excited about the work we do? During this session we will gain insight on what drives us to “want to” instead of “have to.” We will explore the fundamentals of motivation and their impact on our emotions and how they influence our actions. At the end of the session, individuals will be able to identify what motivates us and appreciate that different things motivate others. The group will learn strategies to get and stay motivated, especially in uncertain times. We will also be discussing ways to keep your team motivated in the field and in the office.</p>

Professional Development: Leadership Fundamentals – Yourself as a Leader	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	4
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> Define what leadership means at the Journeyman and Foreman level. Identify their unique leadership style and how it drives results at work. Learn strategies to leverage leadership skills at the individual and team level. Apply core leadership behaviors to increase communication, decrease conflict and improve productivity.
Class description	<p>Leadership is not a one size fits all proposition. This class will focus on each participant’s unique leadership style and how their unique style impacts the way they interact and drive results in the workplace. The group will explore their on-the-job attitudes, preferences, and behaviors to gain valuable feedback and ideas for professional growth. Students will learn the value empowering leadership and be able to apply effective leadership strategies in their current role. Learn how to leverage these newly gained leadership skills to increase communication, decrease conflict and improve overall individual and team productivity. Everyone is a leader. Make a difference and make it count.</p>



Professional Development: Time Management: Effective Prioritization	
Instructor:	Leah Gutmann
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	4
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be able to apply best practices to help better organize and prioritize time and tasks. • Become more effective and efficient by creating new habits in how they approach work. • Identify email management strategies that will assist in better managing time and energy. • Know gain and prevent pain activities and create a shift in focus to personal growth and career goal achievement.
Class description	<p>The mechanical construction industry offers unique challenges when it comes to managing tasks and time in order to really get things done. This workshop will challenge participants to take a tough look at how effectively they allocate the limited time they have in a day to get important things accomplished. The class will identify individual goals and walk through a series of steps to ensure their goals and actions are in alignment. This alignment will allow them to make real progress in achieving things that matter to them personally and professionally. Students will identify and share tips and tricks that will enable them to be more efficient and effective every single day.</p>

Professional Development: Customer Service: Delivering the Ultimate Service Experience

Instructor:	Nancy Bandy
Prerequisite skills:	n/a
Prerequisite classes:	n/a
Related classes:	All Personal and Professional Development series classes.
Location:	ARPEC
CEU Hours:	32 / four days
County JR License Credit:	No
Class objectives	<p>Upon completion of this class, students will:</p> <ul style="list-style-type: none"> • Be prepared to confidently deliver excellent customer service. • Identify customers: internal, external, and third party (tenants, individuals within the buildings, etc.) • Understand where they fit in to the cycle of service
Class description	<p>This in-depth four-day course provides comprehensive training that prepares Service Technicians to confidently deliver excellent customer service. This training is specifically tailored to the HVAC industry and covers experiences and expectations that are encountered by Local 725 Service Journeymen. Including:</p> <ul style="list-style-type: none"> - Effectively communicating with customers - De-escalating confrontations with an upset customer - Writing and submitting accurate service reports - The effects of good (and bad) customer service - The importance of personal accountability
Special considerations:	<p>Because this training will be held during regular workdays, only employers may register their Local 725 Journeymen (and apprentice) employees. All participants must be on referral from Local 725. Employers may apply for JATC Voucher Program funds, subject to availability. Registering employers would make commitment to have their Local 725 Journeymen (and apprentice) employees attend 4 day-long sessions held during the normal workday. Note, this class will be scheduled during months in which work hours are historically lower.</p>