2017 REGIONAL TRAINING COURSE CATALOG

UNLOCK YOUR KNOWLEDGE WITH REGIONAL TRAINING

Past

Now

Future

United Association Building
Three Park Place
Annapolis, MD 21401
(410) 269-2000
http://www.ua.org

December 2016

Dear Brothers and Sisters,

We are now busy preparing for the coming year, including a focus on our regional training programs. We have new courses available again this year—including two specialized sprinklerfitting courses as well as a new technology course titled Virtual Design and Construction. Again this year we are pleased to offer manufacturing training on the Johnson Controls equipment as well as Carrier equipment training. These manufacturing courses are open to instructors as well as members if space allows. The entire regional training effort demonstrates our determination to stay ahead of developments in our industry as we work hard to meet the needs and concerns of our employers. If you haven't done so already, it's a good idea to share this information with your contractors so they can see for themselves the commitment the United Association has to training at the highest level.

As you look through this catalog, you will find a large number of classes available for every sector of our trade. This year's catalog is segmented into class offerings by district as well as courses offered online. Classes are also available throughout the year at the UA's Great Lakes Training Center at Washtenaw Community College. As always, classes are offered to instructors at local training centers; however, when a specific industry need is identified, these classes may be offered to non-instructors.

Don't forget that when instructors participate in one or more of our classes, they receive college credit for these courses, which in turn can lead to associate or bachelor's degree. UA members can also earn college credit for their apprenticeship for courses that are taught by instructors at their local union training center, as outlined in the UA's Apprenticeship Standards.

We encourage you to take time to look through the courses that are listed in this catalog and take advantage of the various training programs that are being offered including the online learning courses. Class sizes are limited; however, most classes require a minimum number of students in attendance to warrant holding the class.

In the meantime, we will be looking forward to seeing you in Ann Arbor at the 2017 Instructor Training Program.

Fraternally,

Christopher A. Haslinger

Christopher A. Haslinger
United Association Director of Training
International Training Fund

IS YOUR WORKFORCE PREPARED FOR A WHOLE NEW CONSTRUCTION WORLD?

WE CAN HELP!

ATTEND ONE OF THESE THREE VIRTUAL DESIGN AND CONSTRUCTION EVENTS

April 18-20, 2017, Local 5, Washington, D.C.
Instructors: John Russell and Erik Lambrecht

May 23-25, 2017, Local 597, Chicago, IL
Instructors: Mike Zivanovic and Eric Posey

October 24-26, 2017, Local 469, Phoenix, AZ
Instructors: Pat Ramirez and Stephan Schnel

- We'll provide the resources and support to help you incorporate the concepts presented during the Virtual Design and Construction events into your current training programs
- Identify a career path for training detailers and designers
- Learn about hardware and software being utilized on construction sites today and experience next generation worksite technologies
- Receive valuable information regarding appropriate applications for hardware and software, best practices on installation methods, links for course materials and class lists for instructors interested in attending classes at the UA Instructor Training Program

Engage in New Innovations and Technologies:

Robotic Total Station
Navisworks®
BIM 360™
Revit®
AutoCAD®
Laser Scanning

Lean construction and automation have already changed the workflow for fabrication and installation! Don't get left behind.

Our Mission Statement

The mission of the UA Training Department is to equip United Association locals with educational resources for developing the skills of their apprentices and journeyworkers. By thus facilitating the training needs of the membership, we maximize their employability and prepare them for changes in the industry. We are committed to making training opportunities available across North America, allowing members to acquire new skills and remain competitive in the industry regardless of geography. In this way, we are determined to meet the needs of the piping industry and enhance employment opportunities for our members, while remaining fiscally responsible to the beneficiaries of the fund.

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PREPARING FOR YOUR CAREER

The International Training Fund provides local union instructors with the educational resources they need to maintain the high level of achievement for United Association apprentices and journeyworkers and prepare them for their work in the piping industry.

District No. 1
Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont

District No. 2
District of Columbia, Indiana, Kentucky, Maryland, Michigan, Ohio, Pennsylvania, Virginia and West Virginia

District No. 3
Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee and Texas

District No. 4
Illinois, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, Wisconsin and Wyoming

District No. 5
Alaska, Arizona, California, Colorado, Hawaii, Idaho, Nevada, New Mexico, Oregon, Utah and Washington

Online Courses

Great Lakes Regional Training Center (GLRTC)

A CLOSER LOOK

The International Training Fund offers a number of regional training opportunities throughout the year. These courses are offered at various local unions within the five districts of the UA; in addition, courses are available online, and at the Great Lakes Regional Training Center. These courses are listed by district for easier navigation, but you may register for courses in any district.

NEW COURSES OFFERED IN 2017

3099 Virtual Design and Construction

7070 NFPA Standards and Codes

7050 Inspection, Testing and Maintenance of Water-Based Fire Protection Systems

8030 *(formerly Course 600/603)* Principles of Welding Processes and Welding Design

COURSE REGISTRATION

Course Registration is available online at https://uanet.org. Select the tab, **Regional Training Registration** to begin the four step registration process.

Step 1. Click **Begin Registration** at the bottom of the page. You will then fill in all required fields which are highlighted in red.

Step 2. Select courses using the Click **Here to Add a Class** link. A window will then open with a list of courses. You can scroll through the list or search by course number, title, date, location or status (open or closed). Please see the course catalog for descriptions of each course.

Step 3. Enter any special requests that you may have. If there are none, then leave this field blank.

Step 4. Review your information and confirm it is correct. If so, proceed to **Register** at the bottom of the page. You will be asked to confirm your registration by clicking **OK.** This will complete the registration process.

CERTIFICATION FEES

All certification course fees are the responsibility of the student. Fees are due prior to the beginning of the class; upon registration for a class, due dates will be provided. Listed below are the fee rates:

Medical Gas Certification Fees:
(Payable to NITC)
Certification = $116.00
Recertification = $49.00

UA STAR Exam Fees:
(Payable to NITC)
Certification = $136.00
Recertification = $84.00

CWI® Certification Fees:
(Payable to American Welding Society)
CWI = $1065.00 (non AWS members) / $850.00 (AWS members)
CWI/CWE Combo = $1205.00 (non AWS members) / $990.00 (AWS members)
Re-Exams = $275.00 per part /$595.00 all parts
Additional Endorsements = $275.00 (AWS members) / $490.00 (non AWS members)

The United Association Training Department is pleased to offer HVACR industry courses in an agreement with the following major HVACR manufacturers through the 2017 Regional Training System: Carrier Corporation and Johnson Controls. These courses will be taught by authorized factory instructors, incorporating manufacturer specific curriculum, and have limited availability. It is the goal of the International Training Fund to provide the best possible training for the UA local unions to satisfy the current HVACR industry needs as it relates to project specifications for high performance buildings. **Admittance into each course is subject to registration policies by each participating manufacturer.** Early registration by UA active instructors is encouraged. Participation by all active UA HVACR technicians is welcome.

6030 *(Formerly Course 620)* C-2102 YK High Pressure Centrifugal Operation and Maintenance (Johnson Controls)

Students will learn about the internal workings of the YK high-pressure centrifugal single-stage compressor, oil return system, OptiView Control Center and other components and subsystems. A comprehensive review of the preventive maintenance schedule and system capacity checkout procedure is also covered. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date	Location
March 7-9, 2017	Phoenix, AZ

6031 *(Formerly Course 621)* C-2107 YT/YK Centrifugal Chiller and Compressor Overhaul (Johnson Controls)

Service personnel will become familiar with the operation and maintenance of centrifugal systems. Students will review R-11, R-123, R-22 and R-134 single-stage centrifugal chillers. They will also learn the internal workings of the compressor, oil return system, lube circuit, purge and heat exchangers. The OptiView Control Center plus preventive maintenance and system checkout procedures are also addressed along with a hands-on teardown and rebuild of a YK centrifugal compressor. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date	Location
April 10-14, 2017	Houston, TX

6032 *(Formerly Course 622)* C-2111 YVAA Air-Cooled Screw Chiller (Johnson Controls)

Prerequisites: Working knowledge of the YCAV/YCIV chiller, working knowledge of VSDs, and understanding of basic electronics

This three-day course teaches experienced service technicians about the YVAA chiller. The course will include features of this unit and the differences in installation, operation and maintenance from the YCAV. Steel toe, leather shoes and long pants are required. **Refer to Safety Requirements.**

Course Date	Location
April 25-27, 2017	Tampa, FL
May 9-11, 2017	Phoenix, AZ

6033 *(Formerly Course 623)* C-2103 YCAV Air-Cooled Rotary Screw Liquid Chillers (Johnson Controls)

This three-day course teaches service personnel about the YCAV chiller features, including the screw compressor, system ancillary components, start-up procedures, unit operation and maintenance. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date	Location
January 10-12, 2017	Tampa, FL
April 4-6, 2017	Tampa, FL

6040 *(Formerly Course 320)* SER 120 Centrifugal Compressor Fundamentals (Carrier Corporation)

In this 32-hour course, students learn how to operate, maintain, troubleshoot and service 19 series low- and high-pressure machines (including PIC controls on newer models). Learning is tested in the labs. Studies include: refrigeration cycles, compressor theory, lubrication cycles, purge operation, refrigerants, heat exchangers and heat transfer. The course also covers troubleshooting techniques and equipment needed to: record and analyze machine temperatures and pressures; determine performance using heat exchange approaches; waterside flow rate analysis; maintenance requirements; and logging machine data. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date	Location
February 14-17, 2017	Syracuse, NY

6041 *(Formerly Course 321)* SER 130 Centrifugal Disassembly and Reassembly (Carrier Corporation)

Prerequisite: Course 6040 (formerly Course 320) SER 120 Centrifugal Compressor Fundamentals

CDR is designed to teach experienced service mechanics how to properly disassemble both low- and high-pressure centrifugal compressors, including Models 19XL, XR and EX. Techniques and procedures for using precision instruments are taught for determining clearances, fits, and tolerances of various bearing, seals and components. Students also review compressor lubrication, motor cooling, and capacity control. Because this course is lab oriented with enhanced student/instructor contact, attendance is limited and early registration is recommended. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date	Location
February 28 – March 3, 2017	Syracuse, NY
October 31 – November 3, 2017	Syracuse, NY

6042 *(Formerly Course 322)* SER 270 30 Series Screw and Scroll Chiller Fundamentals (Carrier Corporation)

You will learn to operate, maintain, troubleshoot and service Carrier's complete line of 30 series air-cooled and water-cooled chillers, models include 30GX/HX, RA/RB, XA/XW. This course is a must for any technician whose job it is to service the complete line of 30 series chillers. Studies include chiller refrigeration cycle, compressor theory, cooler heat transfer, water and air-cooled condensers. You'll also learn how to analyze performance by recording and analyzing refrigerant and water pressures and temperatures. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date	Location
March 7-9, 2017	Ann Arbor, MI
October 10-12, 2017	Ann Arbor, MI

6043 *(Formerly Course 323)* SER 275 23XRV Liquid Chiller Screw Chiller Service and Operation (Carrier Corporation)

This course is targeted at service technicians who operate or service 23XRV chillers. This class will cover the chiller refrigeration cycle, compressor theory, drive theory, cooler heat transfer, and water-cooled condensers. Operation and function of the compressors, muffler, condenser, coolers, economizers, metering devices, oil concentrator and accessories are covered. You will learn how to analyze performance by recording and analyzing refrigerant and water pressures and temperatures. Service technicians will be able to distinguish between chiller and system problems and to quickly diagnose problems using service logs. The class also covers the unit controls and how to set-up and adjust the controls for optimum system performance. In addition, recommended pre-start and start-up procedures, operational and field issues will be covered. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date	Location
March 15-16, 2017	Ann Arbor, MI
October 17-18, 2017	Ann Arbor, MI

ADVANCED WELD ENGINEERING CERTIFICATE PROGRAM

A Welding Engineering Certificate Program titled "Welding Fundamentals and Technology for ASME Code Application" has been developed for the United Association by The Ohio State University Welding Engineering Program. The Ohio State University (OSU) and their Welding Engineering Program faculty will provide the instruction of three courses, totaling 80 hours which upon successful completion, result in the participants receiving a Welding Engineering Certificate from OSU. The Ohio State University is recognized as having the premier program for Welding Engineering. This program has been developed with the intention of providing an opportunity for individuals to increase their knowledge in the welding field as the United Association continues to promote its workforce as the most qualified and trained workforce in the world.

The courses are customized courses built around the B31.3 ASME Pressure Piping Code "Process Piping." These "hybrid" courses are designed for the level of an inspector and/or weld technician/specialist. Due to the specialized nature of this course, upon successful completion of the course, individuals will receive a certificate. There may be certain costs associated with each course. The courses may be offered as lectures or in an online format (being developed), and many laboratory experiments and demonstration are included. The courses will be taught at OSU's Welding Engineering Laboratory in Columbus, Ohio. The certificate program is composed of the following courses:

8030 *(Formerly Course 600/603)* Principles of Welding Processes and Welding Design

Prerequisite: Attendees must hold current credentials as an AWS Certified Welding Inspector (CWI®)

This new course for 2017 combines the previous 600 and 603 courses into a single integrated course focusing on the fundamentals of welding processes and welding design. The new course will include additional labs designed to demonstrate important concepts associated with both the welding process and design-related issues such as heat flow and cooling rate. Arc welding processes will be emphasized in the course, but other important industrial welding processes will be covered as well. Welding design concepts to be covered include the formation of thermal and residual stresses and distortion, joint and weld types, mechanical testing of joints and examples of weld sizing and joint design.

Course Date
July 17-21, 2017

Location
The Ohio State University

8031 *(Formerly Course 601)* Weld Metallurgy, Defects, and Discontinuities for Process Piping Materials

Prerequisite: Attendees must hold current credentials as an AWS Certified Welding Inspector (CWI®)

This course builds upon Course 8030 (formerly Course 600), but focuses on the weld metallurgy of important B31.3 materials such as plain carbon and low alloy steels, stainless/corrosion resistant steels, and nickel base alloys. In addition to building an understanding of metallurgical issues pertaining to the welding of these materials, the course will include an emphasis on the typical defects and discontinuities that are encountered during welding and how they can be prevented.

Course Date
July 24-26, 2017

Location
The Ohio State University

8032 *(Formerly Course 602)* NDE for Process Piping

Prerequisite: Attendees must hold current credentials as an AWS Certified Welding Inspector (CWI®)

This course will focus on the principles and application of all of the NDE techniques used for process piping, including visual, magnetic particle, liquid penetrant, x-ray, and ultrasonic. A particular emphasis will, of course, be placed on how these techniques are used to detect weld discontinuities and defects.

Course Date
July 26-28, 2017

Location
The Ohio State University

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

Review the course requirements carefully. All instructors must take the following classes in the order listed:

2150 *(formerly Course 471)* OSHA 510 OSHA Standards for the Construction Industry

2151 *(formerly Course 470)* OSHA 500 Trainer Course for the Construction Industry

2152 *(formerly Course 474)* OSHA 502 Update for Construction Industry Outreach Trainer

In addition to taking the classes in the order listed, OSHA instructors must also possess five years of safety and health experience in the construction industry.

Each instructor enrolled in **2150** (formerly Course 471), OSHA 510 OSHA, Standards for the Construction Industry, will receive a NPC/CPWR Prerequisite Verification Form via email upon registration. It is essential that the form be submitted by all students as soon as possible and prior to the first day of class.

NINE-YEAR RECERTIFICATION FOR CWI®

A minimum of eighty (80) Professional Development Hours (PDHs) must be earned (training received or instruction delivered) during the nine-year certification period and twenty (20) of the eighty (80) PDHs must be earned in the final three-year period of your nine-year certification period.

Instructors who want to substitute teaching hours for the required PDHs shall submit documentation of the hours of training performed. Such documentation shall include a complete syllabus of subjects taught, a copy of the certificates of attendance or completion issued, the number of students attending, the dates of the training provided, and documentation that the training was a formal offering and not personal coaching, tutoring, or individual instruction delivered to meet job requirements.

A maximum of eighty (80) PDHs are allowed for any one course.

Credit for a particular course may only be granted once in a nine-year period. (Example: a single 40-hour course taught any number of times can only be used to fulfill 40 hours of the 80 hours required for recertification without examination.)

Trainers who want to substitute teaching hours for the required PDHs shall submit documentation of the hours of training performed. Such documentation shall include a complete syllabus of subjects taught, a copy of the certificates of attendance or completion issued, the number of students attending, the dates of the training provided, and documentation that the training was a formal offering and not personal coaching, tutoring, or individual instruction delivered to meet job requirements. For more information please visit http://www.aws.org.

The following UA Courses are acceptable to use as PDH:

Endorsements

You can take an endorsement exam to recertify during the six (6) months prior to your expiration date. Passing one of these exams meets the requirements for recertification. Endorsements require passing a two-hour exam on one of the following:

Endorsements Eligible for Nine-Year Recertification Credit:

- AWS D1.1 Structural Steel
- AWS D1.2 Structural Aluminum
- AWS D1.5 Bridges
- AWS D15.1 Railroad
- AWS D17.1 Aerospace
- API 1104 Pipelines
- ASME Section IX, B31.1 and B31.3
- Boiler and Pressure Vessel
- ASME Section VIII, Div. 1 and Section IX
- Boiler and Pressure Vessel
- Structural Drawing Reading

OR 80 Hours in the Following:

- AWS-CWI® Preparation Course
- Arc Welding Practical Fundamentals and Theory
- Applied Metallurgy
- Piping Codes for Industrial Work
- Teaching Oxy-Acetylene Cutting and Welding
- Innovative Welding Techniques
- Orbital Tube Welding
- Methods in Teaching Advanced Orbital Welding
- Methods in Teaching Downhill Welding
- Radiographic Film Interpretation
- Methods in Teaching Advanced Shielded Metal Arc Welding
- Methods in Teaching Gas Metal Arc Welding (GMAW)
- Methods in Teaching Advanced GTAW
- ASME Section IX Welding Code
- Emerging Welding Technologies
- Wire Feed "Remote Video" Welding Systems
- Radiographic Film Interpretation
- Teaching Orbital Wire Feed Welding
- Troubleshooting and Basic Repair of the AMI 207 Orbital Welding Machines
- Basic Nondestructive Testing
- Principles of Welding Processes and Welding Design
- Weld Metallurgy, Defects, and Discontinuities for Process Piping Materials
- NDE for Process Piping
- Principles of Welding Design
- Ultrasonic Thickness Measurement Technician

UA/EPRI/IBEW INSTRUMENTATION INTRODUCTION TO TESTING

Level I - The Written Test

To pre-qualify for Level I Certification, individuals must have attended and completed an approved UA or IBEW instrumentation class, or the individual must hold a Level II certification and have a minimum of five (5) years of instrumentation calibration experience.

Once pre-qualified, those seeking certification must sit for a written test. This open book, open note exam is comprised of 200 questions covering the various aspects of instrumentation, electrical and mechanical theory and instrument calibration. A three-and-a-half (3.5) hour time period is allowed for completion of this exam. There is no "grandfathering." Anyone requesting to certify is required to take the test.

The UA has developed an online version of the exam which is now available through ASSE. This method will allow a journeyworker to instantly receive feedback with their results for the exam. The same prerequisites apply to this exam and the content will be identical to the written version.

Level II - The Practical Test

Once an individual has successfully completed the written certification test, he or she is eligible to take the Level II - Practical Exam. The Practical Exam is a hands-on proficiency test. Participants will be required to perform various calibrations on an assortment of different instruments using the test and calibration equipment provided. This portion of the exam is performed on a one-on-one basis with a Test Administrator. The Test Administrator will be observing and validating the process that is used to ensure that the procedures are performed according to recognized industry standards. There is no "grandfathering."

Practical Test Format

This test may contain two types of steps: discussion (D) or performance (P). Discussion steps are administered to the examinee simply by asking them the appropriate questions written in the exercise. Performance steps are administered by having the examinee actually perform the steps using the necessary tools and equipment.

The evaluation is a pass/fail test. The calibration equipment and instrumentation listed below will be provided for the test. You will be expected to select the appropriate test equipment from the test equipment listed when performing a calibration on the transmitters and field equipment during the exam. This exam is strictly an evaluation of the calibration process and does not cover the mounting or installation of the devices.

Calibration Equipment:

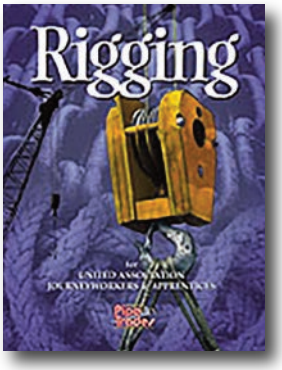
- Transmation PneuXal IV - Process Calibrator
- Fluke 700P06 - Pressure Module
- Transcat 23232E - DC Power Supply
- Fluke 744 - Process Calibrator
- Fluke 87 - Digital Multimeter
- Altek 334A - Milliamp Calibrator
- Rosemount (HART) Communicator

Transmitters and Field Devices:

- Rosemount 1151 - Differential Pressure Transmitter (Smart and Analog)
- Asco Pressure Switch
- Rosemount I/P (current to pressure) Transducer
- Rosemount 3051 - Differential (Gauge) Pressure Transmitter
- Rosemount 3144P - Temperature Transmitter

Additional information for UA Instrumentation Certification is available on http://uanet.org.

UA/EPRI INDUSTRIAL RIGGING CERTIFICATION EXAMINATION COURSE



Prerequisites to Registering

The United Association, in association with the Electrical Power Research Institute (EPRI), established the Industrial Rigging Examination/Certification Program. A major emphasis of the program is the UA's commitment to continually improve the methods of training and qualifying its members.

It is with this commitment in mind that members registering to take the UA/EPRI Industrial Rigging Certification Examination Course 5011 (formerly Course 420) must have completed the 40-hour UA training course on Industrial Rigging Technology. This course 5010 (formerly Course 419) Industrial Rigging Technologies will ensure that individuals are trained in the planning and precautions required when lifting materials and equipment; proper and safe rigging of loads; proper applications of slings and rigging hardware; advantages and disadvantages of each piece of rigging gear; uses of rigging hardware; determination/calculations of rigging loads and equipment; proper maintenance of rigging equipment and rigging personal protective equipment.

Only those individuals who have completed Course 5010 (formerly Course 419) Industrial Rigging Technologies are eligible to take the UA/EPRI Industrial Rigging Certification Examination Course. The certification examination consists of a multiple choice written examination and a hands-on performance examination, developed under the strict requirements of the EPRI-Standard Task Evaluation Program. A score of 80% or above must be achieved on the written examination. During the performance examination individuals must plan and execute a critical lift utilizing a complicated piping assembly, and perform a load inversion and load transfer. All elements of the hands-on performance examination must be completed satisfactorily to pass.

The implementation of these changes to the UA/EPRI Industrial Rigging Certification Program is a continuation of the United Association's commitment to assure that the best trained and qualified personnel are available for all future rigging requirements in the construction industry.

Old Course #	New Course #	Course Name
103	1003	Planning Teaching and Assessing Effective Lessons: Advanced
522	2010	Labor History and the UA: 1800 to the Present
471	2150	OSHA 510 OSHA Standards for the Construction Industry
470	2151	OSHA 500 Trainer Course for the Construction Industry
474	2152	OSHA 502 Update for Construction Industry Outreach Trainer
224	3001	Introduction to Teaching Online Using Blackboard ™ LMS
228	3002	Online Teaching Techniques Using Blackboard™
452	3020	Introduction to Computer Aided Drafting (CAD)
339	3025	Revit MEP
	3099	Virtual Design and Construction
468	4011	Medical Gas Instructor
419	5010	Industrial Rigging Technologies
420	5011	Industrial Rigging Certification for Instructors
498	5020	Level I Certification and Implementing a Process Controls Instrument Technician Program
382	6023	Teaching the HVACR UA STAR Certification
620	6030	C-2102 YK High Pressure Centrifugal Operation and Maintenance
621	6031	C-2107 YT/YK Centrifugal Chiller and Compressor Overhaul
622	6032	C-2111 YVAA Air-Cooled Screw Chiller
623	6033	C-2103 YCAV Air-Cooled Rotary Screw Liquid Chillers
320	6040	SER 120 Centrifugal Compressor Fundamentals
321	6041	SER 130 Centrifugal Disassembly and Reassembly
322	6042	SER 270 30 Series Screw and Scroll Chiller Fundamentals
323	6043	SER 275 23XRV Liquid Chiller Screw Chiller Service and Operation
313	7030	Operation and Set Up of Fire Protection Trailer
	7050	Inspection, Testing and Maintenance of Water-Based Fire Protection Systems
	7070	NFPA Standards and Codes
493	8001	AWS-CWI® Preparation Course and Exam
359	8013	Methods in Teaching Gas Metal Arc Welding (GMAW)
357	8016	Tip Tig Wire Feed Welding
491	8022	Basic Nondestructive Testing
600/603	8030	Principles of Welding Processes and Welding Design
601	8031	Weld Metallurgy, Defects and Discontinuities for Process Piping Materals
602	8032	NDE for Process Piping

Course #	Name	Date	Location	District
p1003	Planning Teaching and Assessing Effective Lessons: Advanced	March 13 – April 24	Blackboard™	Online
p1003	Planning Teaching and Assessing Effective Lessons: Advanced	October 2 – November 13	Blackboard™	Online
2010	Labor History and the UA: 1800 to the Present	April 17 – June 5	Blackboard™	Online
2150	OSHA 510 OSHA Standards for the Construction Industry	August 7-10	Ann Arbor, MI	GLRTC
2150	OSHA 510 OSHA Standards for the Construction Industry	October 16-19	Ann Arbor, MI	GLRTC
p2151	OSHA 500 Trainer Course for the Construction Industry	April 10-14	Ann Arbor, MI	GLRTC
p2151	OSHA 500 Trainer Course for the Construction Industry	November 13-17	Ann Arbor, MI	GLRTC
p2152	OSHA 502 Update for Construction Industry Outreach Trainer	June 13-15	Ann Arbor, MI	GLRTC
p2152	OSHA 502 Update for Construction Industry Outreach Trainer	December 12-14	Ann Arbor, MI	GLRTC
p3001	Introduction to Teaching Online Using Blackboard™ LMS	March 6-8	Ann Arbor, MI	GLRTC
p3002	Online Teaching Techniques Using Blackboard™	February 27 – April 10	Blackboard™	Online
p3002	Online Teaching Techniques Using Blackboard™	October 2 – November 13	Blackboard™	Online
3020	Introduction to Computer Aided Drafting (CAD)	March 6 – May 12	Blackboard™	Online
p3025	Revit MEP	June 13-15	Ann Arbor, MI	GLRTC
3099	Virtual Design and Construction	April 18-20	Lanham, MD	2
3099	Virtual Design and Construction	May 23-25	Mokena, IL	4
3099	Virtual Design and Construction	October 24-26	Phoenix, AZ	5
p4011	Medical Gas Instructor	May 15 -19	Ann Arbor, MI	GLRTC
5010	Industrial Rigging Technologies	March 6-10	Ann Arbor, MI	GLRTC
5010	Industrial Rigging Technologies	October 2-6	Ann Arbor, MI	GLRTC
p5011	Industrial Rigging Certification for Instructors	April 24-28	Ann Arbor, MI	GLRTC
p5011	Industrial Rigging Certification for Instructors	November 13-17	Ann Arbor, MI	GLRTC
5020	Level I Certification and Implementing a Process Controls Instrument Technician Program	May 1-6	Ann Arbor, MI	GLRTC
p6023	Teaching the HVACR UA STAR Certification	March 13 – April 24	Blackboard™	Online
p6023	Teaching the HVACR UA STAR Certification	October 2 – November 13	Blackboard™	Online
6030	C-2102 YK High Pressure Centrifugal Operation and Maintenance	March 7-9	Phoenix, AZ	5
6031	C-2107 YT/YK Centrifugal Chiller and Compressor Overhaul	April 10-14	Houston, TX	3
p6032	C-2111 YVAA Air-Cooled Screw Chiller	April 25-27	Tampa, FL	3
p6032	C-2111 YVAA Air-Cooled Screw Chiller	May 9-11	Phoenix. AZ	5
6033	C-2103 YCAV Air-Cooled Rotary Screw Liquid Chillers	January 10-12	Tampa, FL	3
6033	C-2103 YCAV Air-Cooled Rotary Screw Liquid Chillers	April 4-6	Tampa, FL	3
6040	SER 120 Centrifugal Compressor Fundamentals	February 14-17	Syracuse, NY	1
p6041	SER 130 Centrifugal Disassembly and Reassembly	February 28 – March 3	Syracuse, NY	1
p6041	SER 130 Centrifugal Disassembly and Reassembly	October 31 – November 3	Syracuse, NY	1
6042	SER 270 30 Series Screw and Scroll Chiller Fundamentals	March 7-9	Ann Arbor, MI	GLRTC
6042	SER 270 30 Series Screw and Scroll Chiller Fundamentals	October 10-12	Ann Arbor, MI	GLRTC

Course #	Name	Date	Location	District
6043	SER 275 23XRV Liquid Chiller Screw Chiller Service and Operation	March 15-16	Ann Arbor, MI	GLRTC
6043	SER 275 23XRV Liquid Chiller Screw Chiller Service and Operation	October 17-18	Ann Arbor, MI	GLRTC
7030	Operation and Set Up of Fire Protection Trailer	October 17-19	Ann Arbor, MI	GLRTC
7050	Inspection, Testing and Maintenance of Water-Based Fire Protection Systems	September 11-15	Ann Arbor, MI	GLRTC
7070	NFPA Standards and Codes	April 25-27	Ann Arbor, MI	GLRTC
p8001	AWS-CWI® Preparation Course and Exam	January 7-14	Renton, WA	5
p8001	AWS-CWI® Preparation Course and Exam	February 4-11	Tualatin, OR	5
p8001	AWS-CWI® Preparation Course and Exam	Feb. 18-25	Van Nuys, CA	5
p8001	AWS-CWI® Preparation Course and Exam	March 4-11	Louisville, KY	2
p8001	AWS-CWI® Preparation Course and Exam	March 18-25	Evansville, IN	2
p8001	AWS-CWI® Preparation Course and Exam	April 1-8	Tulsa, OK	3
p8001	AWS-CWI® Preparation Course and Exam	April 22-29	Cleveland, OH	2
p8001	AWS-CWI® Preparation Course and Exam	Apr. 29 – May 6	Mokena, IL	4
p8001	AWS-CWI® Preparation Course and Exam	May 6-13	Denver, CO	5
p8001	AWS-CWI® Preparation Course and Exam	May 20-27	Omaha, NE	4
p8001	AWS-CWI® Preparation Course and Exam	June 3-10	Latham, NY	1
p8001	AWS-CWI® Preparation Course and Exam	June 17-24	Dorchester, MA	1
p8001	AWS-CWI® Preparation Course and Exam	July 8-15	Meriden, CT	1
p8001	AWS-CWI® Preparation Course and Exam	July 22-29	Pittsburgh, PA	2
p8001	AWS-CWI® Preparation Course and Exam	August 5-12	Ann Arbor, MI	GLRTC
p8001	AWS-CWI® Preparation Course and Exam	September 9-16	Ann Arbor, MI	GLRTC
p8001	AWS-CWI® Preparation Course and Exam	September 23-30	Kaukauna, WI	4
p8001	AWS-CWI® Preparation Course and Exam	October 7-14	Peoria, IL	4
p8001	AWS-CWI® Preparation Course and Exam	October 21-28	Nashville, TN	3
p8001	AWS-CWI® Preparation Course and Exam	November 11-18	Atlanta, GA	3
p8001	AWS-CWI® Preparation Course and Exam	November 11-18	Mokena, IL	4
p8001	AWS-CWI® Preparation Course and Exam	December 2-9	Garland, TX	3
p8013	Methods in Teaching Gas Metal Arc Welding (GMAW)	April 24-28	Ann Arbor, MI	GLRTC
p8016	Tip Tig Wire Feed Welding	April 3-7	Ann Arbor, MI	GLRTC
8022	Basic Nondestructive Testing	May 8-12	Ann Arbor, MI	GLRTC
8022	Basic Nondestructive Testing	November 6-10	Ann Arbor, MI	GLRTC
p8030	Principles of Welding Processes and Welding Design	July 17-21	OSU	2
p8031	Weld Metallurgy, Defects and Discontinuities for Process Piping Materials	July 24-26	OSU	2
p8032	NDE for Process Piping	July 26-28	OSU	2

GLRTC - Great Lakes Regional Training Center

(p) Prerequisite

The date for the 2017 Instructor Training Program is August 12-18, 2017

Course Reference	Course #	Name
30 Series Screw	6042	SER 270 30 Series Screw and Scroll Chiller Fundamentals....Page 9, 25
3rd Professional Course	p1003	Planning, Teaching and Assessing Effective Lessons: Advanced....Page 33
AWS-CWI®	p8001	AWS-CWI® Preparation Course and Exam....Page 26, 27, 28, 30, 31, 32
Blackboard™	p3002	Online Teaching Techniques Using Blackboard™....Page 33
CAD	3020	Introduction to Computer Aided Drafting (CAD)....Page 33
Centrifugal Compressor	6040	SER 120 Centrifugal Compressor Fundamentals....Pagen9, 27
Disassembly	p6041	SER 130 Centrifugal Disassemble and Reassembly....Page 9, 27
Fire Protection Trailer	7030	Operation and Set Up of Fire Protection Trailer....Page 25
GMAW	p8013	Methods in Teaching Gas Metal Arc Welding (GMAW)....Page 26
Instrument Tech Program Level I	5020	Level I Certification and Implementing a Process Controls Instrument Technician Program....Page 24
ITM Of Water Fire Protection Systems	7050	Inspection, Testing and Maintenance of Water-Based Fire Protection Systems....Page 25
Labor History	2010	Labor History and the UA: 1800 to Present....Page 33
Liquid Chiller	6043	SER 275 23XRV Liquid Chiller Screw Chiller Service and Operation....Page 9, 25
Medical Gas	p4011	Medical Gas Instructor....Page 24
NDT	8022	Basic Nondestructive Testing....Page 26
NFPA Standards for Fire Protection	7070	NFPA Standards and Codes....Page 25
Online Teaching with Blackboard™	p3002	Online Teaching Techniques Using Blackboard™....Page 33
OSHA 500	p2151	OSHA 500 Trainer Course for the Construction Industry....Page 23
OSHA 502	p2152	OSHA 502 Update for Construction Industry Outreach Trainer....Page 23
OSHA 510	2150	OSHA 510 OSHA Standards for the Construction Industry....Page 23
OSU Course 1	p8030	Principles of Welding Processes and Welding Design....Page 10, 28
OSU Course 2	p8031	Weld Metallurgy, Defects and Discontinuities for Process Piping Materials....Page 10, 29
OSU Course 3	p8032	NDE for Process Piping....Page 10, 29
Revit MEP	p3025	Revit MEP....Page 23
Virtual Design and Construction	3099	Virtual Design and Construction....Page 28, 31, 32
Rigging Certification	p5011	Industrial Rigging Certification for Instructors....Page 24
Rigging Technologies	5010	Industrial Rigging Technologies....Page 24
Teaching Introduction using Blackboard™	p3001	Introduction to Teaching Online Using Blackboard™ LMS....Page 23
Tip Tig	p8016	Tip Tig Wire Feed Welding....Page 26
UA STAR	p6023	Teaching the HVACR UA STAR Certification....Page 34
YCAV Rotary Screw Liquid Chillers	6033	C-2103 YCAV Air-Cooled Rotary Screw Liquid Chillers....Page 8, 30
YK High Pressure	6030	C-2102 YK High Pressure Centrifugal Operation and Maintenance....Page 8, 32
YT/YK Centrifugal Chiller	6031	C-2107 YT/YK Centrifugal Chiller and Compressor Overhaul....Page 8, 30
YVAA Air-Cooled Screw Chillers	p6032	C-2111 YVAA Air-Cooled Screw Chiller....Page 8, 30, 32

(p) Prerequisite

Note: You must bring the required material to class. If you do not have this material, the following items are available for purchase through the UA/IPT Bookstore or as indicated.

Course # – Description	Required Material
2010 Labor History and the UA: 1800 to the Present	Labor in America (Melvyn Dubosfky and Foster Rhea Dulles); Skilled Hands, Strong Spirits (Grace Palladino); The Rise of the United Association (Martin Segal); DVD published by AFL-CIO Building Construction Trades Department "A Century of Leadership - Skilled Hands Strong Spirits 100 Year Anniversary" (1908 - 2008)
2150 OSHA 510 OSHA Standards for the Construction Industry*	OSHA 510 Binder; CFR 1926
2151 OSHA 500 Trainer Course for the Construction Industry*	OSHA 500 Binder; CFR 1926; Disaster Response DVD
2152 OSHA 502 Update for Construction Industry Outreach Trainer*	OSHA 502 Binder; CFR 1926; Disaster Response DVD
3020 Introduction to Computer Aided Drafting (CAD)	2016 AutoCAD, Level I Manual
4011 Medical Gas Instructor	NFPA-99 2015 Edition Health Care Facilities; NFPA Medical Gas and Vacuum Systems Installation Handbook (2015); ASSE Series 6000 Medical Gas Professional Qualifications Standard
5010 Industrial Rigging Technologies	Rigging Manual; IPT Crane and Rigging Handbook
5011 Industrial Rigging Certification for Instructors	Rigging Manual; IPT Crane and Rigging Handbook
5020 Level I Certification and Implementing a Process Controls Instrument Technician Program	Instrumentation and Process Controls Manual (R/00)
8001 AWS-CWI® Preparation Course and Exam**	API 1104 (21st Edition) Welding Pipelines and Related Facilities
8013 Methods in Teaching Gas Metal Arc Welding (GMAW)	Welding Practices and Procedures for the Pipe Trades

Notes:

*OSHA material is not sold directly to students. It is sent to the course location and the instructor distributes it along with a purchase order, which is filled out by students and returned to the instructor who forwards the purchase order to the International Pipe Trades Bookstore.

**To purchase the API 1104 (21st Edition) Welding Pipelines and Related Facilities book for Course 8001, (formerly Course 493), AWS-CWI® Preparation Course and Exam, call IHS Global Engineering Documents at (877) 413-5184. The cost is $286.00.

Purchase Material for all Regional Training Classes at:
International Pipe Trades Joint Training Committee (Bookstore)
687-B Commerce Drive
Upper Marlboro, MD 20774
Telephone: 301-218-1241
Fax: 301-218-8961
E-Mail: iptbookstore@uanet.org
Shop online: shop.iptbookstore.com

SAFETY REQUIREMENTS

Students must bring their own safety equipment. These items will not be supplied. Safety equipment and protective clothing is required for all shop classes. Safety requirements will be strictly enforced. Any student who fails to meet safety requirements will be removed from class.

1. **Eye and Face Protection (OSHA-1926 1926.102)**
   Goggles or spectacles conforming to ANSI Z87.1-1968 shall be used as primary protection. Safety glasses will be required in all shop classes.
2. **Face Shields**
   Face shields shall be used as secondary protection when the faculty instructor requires it.
3. **Welding Shields**
   Welding shields and head covering must meet industry standards and be approved by the faculty instructor. You must bring welding hoods for welding classes.
4. **Hand Protection**
   Appropriate gloves must be worn when doing hot work or working with sharps as approved by the faculty instructor. You must bring gloves for welding classes and other classes where hands-on work is a part of the class.
5. **Arms and Torso Protection**
   Welders must use appropriate protective jackets, sleeves, and/or other protective gear. All protective gear must be approved by the faculty instructor. Long sleeve shirts will be required in all shop classes. You must bring welding jackets for classes.
6. **Foot Protection**
   Work shoes must be made of leather or other similarly strong materials and are required in all shop classes (No sneakers or sandals will be permitted).
7. **Leg Protection**
   Long pants will be required in all shop classes (No shorts will be permitted).

Facilities

The Great Lakes Regional Training Center (GLRTC) was built in 2003 and is the home base for the UA's Instructor Training Program. The GLRTC is a 15,000-square-foot facility with classrooms, labs, and equipment used in all aspects of UA training. In 2013 and 2014, the GLRTC underwent extensive renovation. It now includes new welding labs with the latest in technology such as training on microturbines. Classrooms were updated as well, creating a flexible environment that can accommodate everything from computer-based learning to the newest equipment and technology that instructors and UA members are likely to find on jobsites all across North America. The GLRTC has proven to be an essential component of the overall training program.

What We Do

- Answers any questions you have about training center services
- Assists students in web-based classes using Blackboard™
- Helps instructors develop online classes
- Facilitates student participation in College on Demand® courses
- Provides academic advising for WCC Associate Degrees
- Evaluates transfer credits from other academic institutions
- Facilitates various onsite training courses throughout the year.

Washtenaw Community College (WCC) is in partnership with the United Association of Plumbers and Pipefitters (UA) to provide associate degree and certificate programs for its members.

Since August 2000, all UA apprentices registered with WCC receive 32 college credits upon completion of their apprenticeship in plumbing, pipefitting, sprinkler fitting, or HVACR. These credits can be applied towards an Associate Degree in Industrial Training, Construction Supervision, or Journey Person General Studies.

Washtenaw Community College is also host to the UA Instructor Training Program held every August. During this weeklong program, approximately 2000 selected UA instructors take a variety of college level courses to become certified UA apprentice instructors. These courses also earn them credit towards an Associate Degree in Industrial Training.

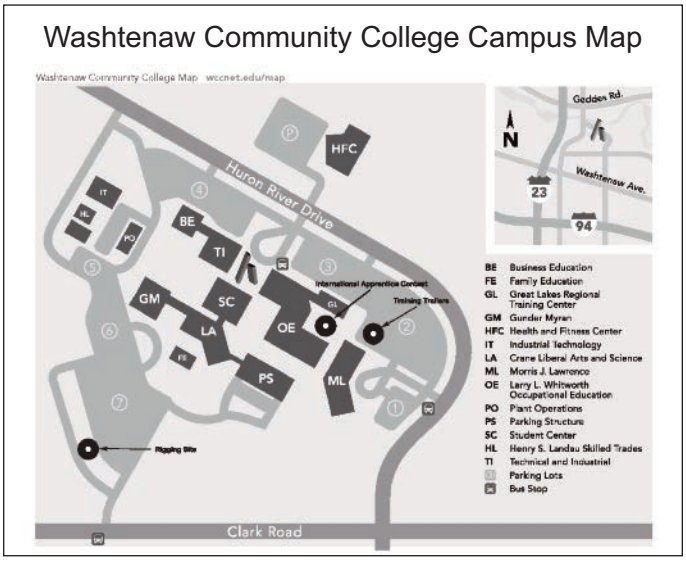
Washtenaw Community College is accredited by the Higher Learning Commission of the North Central Association.

Staff

Anthony Esposito,
Technical Director
Kim Billings,
Logistics Director

Address

UA Great Lakes Regional Training Center
4800 East Huron River Drive
Ann Arbor, MI 48105
(734)-973-3300



In our efforts to serve the United Association on a more year-round basis, the Ann Arbor Area CVB created a Preferred Rate Program for all UA members. The program runs from January 1 to December 31 each year.

The program operates as follows:

- **The Preferred rate applies to individual transient type reservations and DOES NOT include the UA Instructor Training Program in August.**
- Participating hotels will offer special UA discounted rates throughout the year. Every UA member will receive the special Preferred Rate at the time of the reservation. **Blackout dates may apply for hotels during special event dates or at the discretion of the individual hotels.**
- Rates quoted do not include accommodation/sales tax.

Participating Hotel Partners

Ann Arbor Regent Hotel & Suites
2455 Carpenter Rd.
Ann Arbor, MI 48108
Reservations (734)973-6100
www.AnnArborRegent.com

Special Amenities

Code: UA
$100.00
Breakfast included
Complimentary Wireless Internet
Complimentary Shuttle to WCC

Ann Arbor Marriott Ypsilanti –Eagle Crest Resort
1275 S. Huron
Ypsilanti, MI 48197
Reservations (734)487-2000
Contacts: Caitlin Oates & Kerri Nelson
www.eaglecrestresort.com

Code: United Association of Plumbers
$124.00
Marriott Rewards members can earn 10 Marriott Rewards points or up to two air miles per dollar spent on all qualifying charges.

Online booking: Guests to use www.marriott.com to book either using this link Book your corporate rate for United Association of Plumbers or entering the corporate code 7UA on www.marriott.com in the drop down box for "corporate or promotional code."
Guests calling the property direct should be sure to ask for the United Association of Plumbers rate.

Courtyard by Marriott Ann Arbor
3205 Boardwalk
Ann Arbor, MI 48108
Reservations (734)973-6100
www.marriott.com/arbch

Code: UAPC
$136 Single/Double
Complimentary Wireless Internet
Pool / Fitness Center

Holiday Inn & Suites University of Michigan Area
3155 Boardwalk Drive
Ann Arbor, MI 48108
Reservations (734)213-1900
www.holidayinn.com/annarbormi

Code: UA Great Lakes Center
$104.00 Single/Double
Online Corporate ID: 100203393
Complimentary Wireless Internet
IHG Rewards Club Points

The Kensington Hotel
3500 S. State Street
Ann Arbor, MI 48108
Reservations (734)761-7800
www.kcourtaa.com

Code: UA LNR Rate
$119.00 Single/Double
Newly renovated sleeping rooms
Complimentary Wireless Internet

Residence Inn Ann Arbor North
3535 Green Ct.
Ann Arbor, MI 48105
Reservations (734)327-0011
www.marriott.com/arbrn code: 7UA

Direct Reservation link: Book UA rate now
$154.00 Studio Suite / $164 One Bedroom Suite
All King suites with kitchens, minutes from WCC
Free hot breakfast buffet daily/Evening Mix: M-W
Complimentary Wireless Internet

Weber's Inn
3050 Jackson Avenue
Ann Arbor, MI 48103
Reservations (734)769-2500
www.webersinn.com

Code: UA Rate
$130.00 Single/$140.00 Double
Online Corporate ID: 0105099

Questions? Call Kristy Poore at the Ann Arbor Area Convention & Visitors Bureau
UA Dedicated Phone Line: (734) 794-0649
1-800-888-9487 or email at ua@annarbor.org

2150 *(Formerly Course 471)* OSHA 510 OSHA Standards for the Construction Industry

This is the prerequisite course for Course 2151 (formerly Course 470), OSHA 500. This course covers the construction safety and health principles and OSHA policies, procedures and standards, as they apply to the construction industry. Topics include scope and application of the OSHA construction standards. Special emphasis is placed on those areas that are the most hazardous, using OSHA standards as a guide. As of September 1, 2011, all new instructors must have taken the OSHA 510 prior to taking the OSHA 500 course. OSHA is requiring this to ensure this prerequisite is met, along with the longstanding prerequisite of instructors possessing five years of safety and health experience in the construction industry.

Required text books or reference materials: *OSHA 510 Training Binder; CFR 1926*

Course Dates
August 7-10, 2017
October 16-19, 2017

2151 *(Formerly Course 470)* OSHA 500 Trainer Course for the Construction Industry

Prerequisite: Course 2150 (formerly Course 471), OSHA 510

This course certifies UA instructors to teach the OSHA 10-hour and OSHA 30-hour construction safety and health outreach programs at their respective locals. Special emphasis is placed on adult learning principals and training techniques to clearly identify, define, and explain construction industry hazards and acceptable corrective measures as required in the programs, using 29 CFR 1926 OSHA Construction Standards as a guide. This course also covers the effective use of electronic visual aids and handouts. After successful completion of the course the student will be given a bag containing hands-on training materials to use in class, i.e., eye, ear, head and hand protection items.

Required text books or reference materials: *OSHA 500 Manual; CFR 1926; Disaster Response DVD*

Course Dates
April 10-14, 2017
November 13-17, 2017

2152 *(Formerly Course 474)* OSHA 502 Update for Construction Industry Outreach Trainer

Prerequisite: Course 2151 (formerly Course 470), OSHA 500

This course is designed for instructors who have completed the Basic Instructor Course in Occupational Safety and Health Standards for the Construction Industry Course 2151 (formerly Course 470) Course. OSHA requires that these instructors stay current on OSHA standards and they must take the OSHA 2152 (formerly Course 474) 502 update course every four years to maintain their status. Course participants will be provided updates on such topics as OSHA construction standards, policies and regulations. After completion of the course, each participant will receive a certificate. OSHA will be notified that they have completed this course and met their obligation to stay current.

Required text books or reference materials: *OSHA 502 Training Binder; CFR 1926; Disaster Response DVD*

Course Dates
June 13-15, 2017
December 12-14, 2017

3001 *(Formerly Course 224)* Introduction to Teaching Online Using Blackboard™ LMS

Prerequisite: Basic computer experience and understanding of online tools such as browser knowledge. A valid email is required.

This is a 20-hour introductory course/workshop for novice computer users wishing to learn about future Blackboard™ LMS and other LMSs in use. Students will learn to effectively navigate various internet sites and gain an understanding of internet addresses (URLs). Using an assigned Blackboard™ LMS course site, they will learn how to use some of the basic content areas of a Blackboard™ LMS course site. Various file types used on the internet will also be covered.

Course Date
March 6-8, 2017

3025 *(Formerly Course 339)* Revit MEP

Prerequisite: A working knowledge of personal computers.

This course will explore the uses of Autodesk Revit MEP software as a design, collaboration, coordination, communication, and fabrication tool for the construction industry. Using the latest Revit software, students will learn hands-on how to utilize a design model for coordination and further develop it into installation drawings and fabrication spool sheets. Additional topics include utilizing point clouds for building Revit families, total station point creation, and useful third-party add-in software.

Course Date
June 13-15, 2017

4011 *(Formerly Course 468)* Medical Gas Instructor

Prerequisite: Current Medical Gas Installer and Medical Gas Brazer Certifications

All fees are the responsibility of the student and must be paid by the first day class. See fee schedule.

This train-the-trainer course covers the NFPA 2015 codes and ASSE Series 6000 standards that govern correct medical gas and medical-surgical vacuum piping system installation and testing, requirements for installer qualification, and requirements for brazer qualification in accordance with ASME Section IX. A written exam will be administered at the end of the course. Instructor Resource Library and Student Resource Library Training Package will be demonstrated and used. UA instructors who successfully pass the course and exam will receive the certification of a Medical Gas Instructor of the United Association issued by NITC. Fees are the responsibility of the student. See fee schedule. **Refer to Safety Requirements.**

Required text books or reference materials: *NFPA-99 2015 Edition Health Care Facilities; NFPA Medical Gas and Vacuum Systems Installation Handbook (2015); ASSE Series 6000 Medical Gas Professional Qualifications Standard*

Course Date
May 15-19, 2017

5010 *(Formerly Course 419)* Industrial Rigging Technologies

This course will ensure that individuals are trained in the planning and precautions required when lifting materials and equipment; proper and safe rigging of loads; proper applications of slings and rigging hardware; advantages and disadvantages of each piece of rigging gear; uses of rigging hardware; determination/calculations of rigging loads and equipment; and proper maintenance of rigging equipment and rigging personal protective equipment. All courses are train-the-trainer and center around methods of teaching. Only a small portion of the course will involve hands-on training, although proper protective clothing, foot protection and safety glasses are mandatory. **Refer to Safety Requirements.**

Required text books or reference materials: *Rigging Manual; IPT Crane and Rigging Handbook*

Course Dates
March 6-10, 2017
October 2-6, 2017

5011 *(Formerly Course 420)* Industrial Rigging Certification for Instructors

Prerequisite: Course 5010, (formerly Course 419) Industrial Rigging Technologies

Industrial Rigging Certification for the instructor is a train-the-trainer course that teaches a theoretical and a practical component covering the best rigging practices, calculating centers of gravity, sling stress, crane set up, and the use of the tuggers, jacks, and rollers. There will be a hands-on performance evaluation. Participants rigging skills' are evaluated by means of a certification examination consisting of a multiple choice written exam and a hands-on performance exam. The hands-on performance exam consists of performance steps that are administered by having the examinee actually perform a sequence of lifts using the necessary tools and equipment. Proper protective clothing, foot protection and safety glasses are mandatory. **Refer to Safety Requirements.**

Required text books or reference materials: *Rigging Manual (R/04); IPT Crane and Rigging Handbook; Students must read pages 1 to 163 in the IPT Crane and Rigging Handbook and all of the Rigging Manual prior to class and have a clear understanding of both books.*

Course Dates
April 24-28, 2017
November 13-17, 2017

5020 *(Formerly Course 498)* Level I Certification and Implementing a Process Controls Instrument Technician Program

This 60-hour course (six 10-hour days) consists of basic sciences and fundamentals related to instrumentation and controls, as applied to the UA certification. The objectives of this course are to present the principles and operations of Industrial Instrumentation and to prepare UA instructors who will teach the class to UA members. The course will consist of definitions, symbols and flow diagrams, level, pressure, flow and temperature measuring instruments. It will also introduce the UA instructor to the equipment and information on calibration of transmitters, transducers, valve positioners, and controllers. There will be a review of the UA Instrumentation and Process Control Book and questions from the ISA Instrumentation Program. We will review the four domains of instrumentations: (1) Level, (2) Flow, (3) Pressure, and (4) Temperature. Quizzes will be taken after each section. There will be a final 200-question, multiple choice certification exam. This is the Level I UA/IBEW/EPRI certification exam.

Required text books or reference materials: *Instrumentation and Process Controls Manual (R/00)*

Course Date
May 1-6, 2017

6042 *(Formerly Course 322)* SER 270 30 Series Screw and Scroll Chiller Fundamentals

You will learn to operate, maintain, troubleshoot and service Carrier's complete line of 30 series air-cooled and water-cooled chillers, models include 30GX/HX, RA/RB, XA/XW. This course is a must for any technician whose job it is to service the complete line of 30 series chillers. Studies include chiller refrigeration cycle, compressor theory, cooler heat transfer, water- and air-cooled condensers. You'll also learn how to analyze performance by recording and analyzing refrigerant and water pressures and temperatures. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Dates
March 7-9, 2017
October 10-12, 2017

6043 (Formerly Course 323) SER 275 23XRV Liquid Chiller Screw Chiller Service and Operation

This course is targeted at service technicians who operate or service 23XRV chillers. This class will cover the chiller refrigeration cycle, compressor theory, drive theory, cooler heat transfer, and water-cooled condensers. Operation and function of the compressors, muffler, condenser, coolers, economizers, metering devices, oil concentrator and accessories are covered. You will learn how to analyze performance by recording and analyzing refrigerant and water pressures and temperatures. Service technicians will be able to distinguish between chiller and system problems and to quickly diagnose problems using service logs. The class also covers the unit controls and how to set-up and adjust the controls for optimum system performance. In addition, recommended pre-start and start-up procedures, operational and field issues will be covered. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Dates
March 15-16, 2017
October 17-18, 2017

7030 *(Formerly Course 313)* Operation and Set Up of Fire Protection Trailer

UA student instructors participating in this course will learn how to present classes utilizing the trainers contained within the UA Fire Protection training trailer as they apply to the fire protection equipment installed and serviced by UA members. This will include the Victaulic Vortex system set up and breakdown that protects the trailer. Instructors will learn the best practices for teaching with the training trailer along with proper trailer setup and repacking including water connections, setup and draining. They will learn the operation of the onboard generator and audio video systems. This will also include equipment safety of the fuel, electrical systems. The training trailer event scheduling and transportation policies will be covered. Safety shoes are mandatory. **Refer to Safety Requirements.**

Course Date
October 17-19, 2017

7050 Inspection, Testing and Maintenance of Water-Based Fire Protection Systems

This course will cover ITM of water-based fire protection systems that will go beyond NFPA 25. This course will guide you through the inspection requirements of NFPA 25 and discuss the Installation requirements that are not addressed in NFPA 25. It will also include the testing of systems as required by NFPA 25 and best practices for those systems that lack the documentation to ensure that the required periodic tests are performed. Best practices will be covered under the maintenance requirements including some tips of the trade. At the end of this course you will be given the opportunity to get a certification for ITM that includes both a written and practical test that goes beyond the NICET certification.

Course Date
September 11-15, 2017

7070 NFPA Standards and Codes

This course will cover the latest NFPA (National Fire Protection Association) Codes and Standards along with information covering technical committee makeup, insights, and their role in the standards development process. The course content encompasses the method for filing "technical committee" applications and the sequencing of the standards development process, to include: the public input submittal process, public comment actions, and the NITMAM (Notice of Intent to make a Motion) course of action. The subject matter will provide the necessary tools for an instructor to develop an effective NFPA procedural class for his/her home local that will encourage membership involvement in the standards process that deals directly with their collective futures and livelihood.

Course Date
April 25-27, 2017

8001 *(Formerly Course 493)* AWS-CWI® Preparation Course and Exam

Prerequisite: 5 Years' Welding Experience

All fees are the responsibility of the student. See fee schedule.

This course will provide welding inspectors with the knowledge of welding and inspection fundamentals useful on the jobsite. It involves great responsibility and remarkable skill demonstration. The CWI® is widely recognized, both nationally and internationally. This intensive course covers information on nondestructive examination methods applicable to common welding processes and general provisions of API 1104, which includes qualification of welding procedures for welds containing filler-metal additions, design and preparation of the joint for production welding, nondestructive testing and acceptance standards, and automatic welding with and without filler-metal additions. You must be a high school graduate or hold an equivalency diploma and have a minimum of five (5) years' experience in the welding field.

Required text books or reference materials: *API 1104 (21st Edition) Welding Pipelines and Related Facilities*

Course Dates
August 5-12, 2017
September 9-16, 2017

8013 *(Formerly Course 359)* Methods in Teaching Gas Metal Arc Welding (GMAW)

Prerequisite: Certified Welder in the GMAW welding process

This course is specifically designed for local union welding instructors and covers the use of advanced gas metal arc welding equipment and techniques. The course focuses on how to teach advanced techniques of gas metal arc welding and process variables for a variety of materials. This course provides local unions a means of preparing their apprentices and journey workers in developing the skills necessary to address the industry's welding needs. Students must bring their own welding hoods, jackets, and gloves. **Refer to Safety Requirements.**

This course will be utilizing the new *Welding Practices and Procedures for the Pipe Trades* book. The Instructor Resource Library (IRL) and Student Resource Library (SRL) Training Package will be demonstrated and used.

Required text books or reference materials: *Welding Practices and Procedures for the Pipe Trades; Online Instructor Resource Library (IRL) and Student Resource Library (SRL)*

Course Date
April 24-28, 2017

8016 *(Formerly Course 357)* Tip Tig Wire Feed Welding

Prerequisite: Enrollment is limited to local union instructors with a minimum of 5 years' experience with the GTAW and GMAW welding processes.

The course provides a detailed understanding of the "Tip Tig" (GTAW) Hot Wire welding process. The "Tip Tig" manual welding process allows for substantial increases in filler metal deposition while maintaining superior GTAW weld quality. This course covers the safety, operation, technology and equipment set-up associated with this type of advanced welding system. In addition, the course covers process variables, system control functions and weld parameter selection for a variety of material. Students must bring their own welding hoods, welding jackets, welding gloves, work shoes, and wear proper protective clothing. **Refer to Safety Requirements.**

Course Date
April 3-7, 2017

8022 *(Formerly Course 491)* Basic Nondestructive Testing

This course covers the basic Nondestructive Examination (NDE) methods of Liquid Penetrate (PT) using the solvent removable visible dye technique, and Magnetic Particle (MT) using the dry particle electromagnetic yoke technique. The course will involve theory and hands-on practical application of both the PT and MT methods. It is recommended class attendees hold the AWS CWI® credential. A certification will be issued upon completing and passing of the exams given at the end of this course. **Refer to Safety Requirements.**

Course Dates
May 8-12, 2017
November 6-10, 2017

6040 *(Formerly Course 320)* SER 120 Centrifugal Compressor Fundamentals

In this 32-hour course, students learn how to operate, maintain, troubleshoot and service 19 series low- and high-pressure machines (including PIC controls on newer models). Learning is tested in the labs. Studies include: refrigeration cycles, compressor theory, lubrication cycles, purge operation, refrigerants, heat exchangers and heat transfer. The course also covers troubleshooting techniques and equipment needed to: record and analyze machine temperatures and pressures; determine performance using heat exchange approaches; waterside flow rate analysis; maintenance requirements; and logging machine data. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date
February 14-17, 2017
Carrier Corporation
6540 Old Collamer Road S.; E. Syracuse, NY 13057

6041 *(Formerly Course 321)* SER 130 Centrifugal Disassembly and Reassembly

Prerequisite: Course 6040 (formerly Course 320) SER 120 Centrifugal Compressor Fundamentals

CDR is designed to teach experienced service mechanics how to properly disassemble both low- and high-pressure centrifugal compressors, including Models 19XL, XR and EX. Techniques and procedures for using precision instruments are taught for determining clearances, fits, and tolerances of various bearing, seals and components. Students also review compressor lubrication, motor cooling, and capacity control. Because this course is lab oriented with enhanced student/instructor contact, attendance is limited and early registration is recommended. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Dates
February 28 – March 3, 2017
Carrier Corporation
6540 Old Collamer Road S.; E. Syracuse, NY 13057

October 31 – November 3, 2017
Carrier Corporation
6540 Old Collamer Road S.; E. Syracuse, NY 13057

8001 *(Formerly Course 493)* AWS-CWI® Preparation Course and Exam

Prerequisite: 5 Years' Welding Experience

All fees are the responsibility of the student. See fee schedule.

This course will provide welding inspectors with the knowledge of welding and inspection fundamentals useful on the jobsite. It involves great responsibility and remarkable skill demonstration. The CWI® is widely recognized, both nationally and internationally. This intensive course covers information on nondestructive examination methods applicable to common welding processes and general provisions of API 1104, which includes qualification of welding procedures for welds containing filler-metal additions, design and preparation of the joint for production welding, nondestructive testing and acceptance standards, and automatic welding with and without filler-metal additions. You must be a high school graduate or hold an equivalency diploma and have a minimum of five (5) years' experience in the welding field.

Required text books or reference materials: *API 1104 (21st Edition) Welding Pipelines and Related Facilities*

Course Dates
June 3-10, 2017
Local Union 7 Training Center
18 Avis Drive; Latham, NY 12110

June 17-24, 2017
Local Union 537 Training Center
40 Enterprise Street; Dorchester, MA 02125

July 8-15, 2017
Local Union 777 Training Center
450 Murdock Avenue; Meriden, CT 06450

3099 Virtual Design and Construction

The purpose of this event is to provide an outline which will help you incorporate VDC into your current training programs, as well as providing a path for training detailers and designers. This event will cover some of the software and hardware currently being utilized in the construction world today, as well as a glimpse into future technology. As an add-on, we will be providing information on the appropriate applications for hardware and software, best practices on installation methods, links for course material, and class lists for instructors interested in attending courses at the UA Instructor Training Program. Some examples of the hardware and software currently being taught are Robotic Total Station, Navisworks, BIM 360, Revit, AutoCAD and Laser Scanning. The technology that we will be using will allow training centers to utilize virtual design to enhance their practical training in the piping industry and show how our industry has adopted the workflow for fabrication and installation utilizing lean construction and automation.

Course Date
April 18-20, 2017
Local Union 5 Training Center
5000 Forbes Blvd; Lanham, MD 20706

8001 *(Formerly Course 493)* AWS-CWI® Preparation Course and Exam

Prerequisite: 5 Years' Welding Experience

All fees are the responsibility of the student. See fee schedule.

This course will provide welding inspectors with the knowledge of welding and inspection fundamentals useful on the jobsite. It involves great responsibility and remarkable skill demonstration. The CWI® is widely recognized, both nationally and internationally. This intensive course covers information on nondestructive examination methods applicable to common welding processes and general provisions of API 1104, which includes qualification of welding procedures for welds containing filler-metal additions, design and preparation of the joint for production welding, nondestructive testing and acceptance standards, and automatic welding with and without filler-metal additions. You must be a high school graduate or hold an equivalency diploma and have a minimum of five (5) years' experience in the welding field.

Required text books or reference materials: *API 1104 (21st Edition) Welding Pipelines and Related Facilities*

8001 AWS-CWI® Preparation Course and Exam *(continued)*

Course Dates
March 4-11, 2017
Local Union 502 Training Center
4330 Crittenden Drive; Louisville, KY 40209

March 18-25, 2017
Local Union 136 Training Center
4301 N. Joseph Avenue; Evansville, IN 47720

April 22-29, 2017
Local Union 120 Neil T. Walsh Training Center
6305 Halle Drive; Cleveland, OH 44125

July 22-29, 2017
Local Union 449 Training Center
1459 Woodruff Street; Pittsburgh, PA 15220

8030 *(Formerly Course 600/603)* Principles of Welding Processes and Welding Design

Prerequisite: Attendees must hold current credentials as an AWS Certified Welding Inspector (CWI®)

This new course for 2017 combines the previous 600 and 603 courses into a single integrated course focusing on the fundamentals of welding processes and welding design. The new course will include additional labs designed to demonstrate important concepts associated with both the welding process and design-related issues such as heat flow and cooling rate. Arc welding processes will be emphasized in the course, but other important industrial welding processes will be covered as well. Welding design concepts to be covered include the formation of thermal and residual stresses and distortion, joint and weld types, mechanical testing of joints and examples of weld sizing and joint design.

Course Date
July 17-21, 2017
The Ohio State University
Columbus, OH 43210

8031 *(Formerly Course 601)* Weld Metallurgy, Defects and Discontinuities for Process Piping Materials

Prerequisite: Course 8030 (formerly Course 600) and be a Certified Welding Inspector

All fees are the responsibility of the student. See fee schedule.

This course builds upon Course 8030 (formerly Course 600), but focuses on the weld metallurgy of important B31.3 materials such as plain carbon and low alloy steels, stainless/corrosion resistant steels, and nickel base alloys. In addition to building an understanding of metallurgical issues pertaining to the welding of these materials, the course will include an emphasis on the typical defects and discontinuities that are encountered during welding and how they can be prevented.

Course Date
July 24-26, 2017
The Ohio State University
Columbus, OH 43210

8032 *(Formerly Course 602)* NDE for Process Piping

Prerequisite: Course 8030 (formerly Course 600) and be a Certified Welding Inspector

All fees are the responsibility of the student. See fee schedule.

This course will focus on the principles and application of all of the NDE techniques used for process piping, including visual, magnetic particle, liquid penetrant, x-ray, and ultrasonic. A particular emphasis will, of course, be placed on how these techniques are used to detect weld discontinuities and defects.

Course Date
July 26-28, 2017
The Ohio State University
Columbus, OH 43210

6031 *(Formerly Course 621)* C-2107 YT/YK Centrifugal Chiller and Compressor Overhaul

Service personnel will become familiar with the operation and maintenance of centrifugal systems. Students will review R-11, R-123, R-22 and R-134 single-stage centrifugal chillers. They will also learn the internal workings of the compressor, oil return system, lube circuit, purge and heat exchangers. The OptiView Control Center plus preventive maintenance and system checkout procedures are also addressed along with a hands-on teardown and rebuild of a YK centrifugal compressor. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date
April 10-14, 2017
Johnson Controls
10644 West Little York Road; Houston, TX 77041

6032 *(Formerly Course 622)* C-2111 YVAA Air-Cooled Screw Chiller

Prerequisites: Working knowledge of the YCAV/YCIV chiller, working knowledge of VSDs, and understanding of basic electronics

This three-day course teaches experienced service technicians about the YVAA chiller. The course will include features of this unit and the differences in installation, operation and maintenance from the YCAV. Steel toe, leather shoes and long pants are required. **Refer to Safety Requirements.**

Course Date
April 25-27, 2017
Johnson Controls
3802 Sugar Palm Drive; Tampa, FL 33619

6033 *(Formerly Course 623)* C-2103 YCAV Air-Cooled Rotary Screw Liquid Chillers

This three-day course teaches service personnel about the YCAV chiller features, including the screw compressor, system ancillary components, start-up procedures, unit operation and maintenance. Steel toe, leather shoes and long pants are required. **Refer to the Safety Requirements.**

Course Dates
January 10-12, 2017
Johnson Controls
3802 Sugar Palm Drive; Tampa, FL 33619

April 4-6, 2017
Johnson Controls
3802 Sugar Palm Drive; Tampa, FL 33619

8001 *(Formerly Course 493)* AWS-CWI® Preparation Course and Exam

Prerequisite: 5 Years' Welding Experience

All fees are the responsibility of the student. See fee schedule.

This course will provide welding inspectors with the knowledge of welding and inspection fundamentals useful on the jobsite. It involves great responsibility and remarkable skill demonstration. The CWI® is widely recognized, both nationally and internationally. This intensive course covers information on nondestructive examination methods applicable to common welding processes and general provisions of API 1104, which includes qualification of welding procedures for welds containing filler-metal additions, design and preparation of the joint for production welding, nondestructive testing and acceptance standards, and automatic welding with and without filler-metal additions. You must be a high school graduate or hold an equivalency diploma and have a minimum of five (5) years' experience in the welding field.

Required text books or reference materials: *API 1104 (21st Edition) Welding Pipelines and Related Facilities*

Course Dates
April 1-8, 2017
Local Union 798 Training Center
4823 S. 83rd East Avenue; Tulsa, OK 74147

October 21-28, 2017
Local Union 572 Training Center
225 Ben Allen Road; Nashville, TN 37207

November 11-18, 2017
Local Union 72 Training Center
5675 Tulane Drive S.W.; Atlanta, GA 60336

December 2-9, 2017
Local Union 100 Training Center
3541 W. Miller Road; Garland, TX 75041

3099 Virtual Design and Construction

The purpose of this event is to provide an outline which will help you incorporate VDC into your current training programs, as well as providing a path for training detailers and designers. This event will cover some of the software and hardware currently being utilized in the construction world today, as well as a glimpse into future technology. As an add-on, we will be providing information on the appropriate applications for hardware and software, best practices on installation methods, links for course material, and class lists for instructors interested in attending courses at the UA Instructor Training Program. Some examples of the hardware and software currently being taught are Robotic Total Station, Navisworks, BIM 360, Revit, AutoCAD and Laser Scanning. The technology that we will be using will allow training centers to utilize virtual design to enhance their practical training in the piping industry and show how our industry has adopted the workflow for fabrication and installation utilizing lean construction and automation.

Course Date
May 23-25, 2017
Local Union 597 Training Center
10850 W. 187th Street; Mokena, IL 60448

8001 *(Formerly Course 493)* AWS-CWI® Preparation Course and Exam

Prerequisite: 5 Years' Welding Experience

All fees are the responsibility of the student. See fee schedule.

This course will provide welding inspectors with the knowledge of welding and inspection fundamentals useful on the jobsite. It involves great responsibility and remarkable skill demonstration. The CWI® is widely recognized, both nationally and internationally. This intensive course covers information on nondestructive examination methods applicable to common welding processes and general provisions of API 1104, which includes qualification of welding procedures for welds containing filler-metal additions, design and preparation of the joint for production welding, nondestructive testing and acceptance standards, and automatic welding with and without filler-metal additions. You must be a high school graduate or hold an equivalency diploma and have a minimum of five (5) years' experience in the welding field.

Required text books or reference materials: *API 1104 (21st Edition) Welding Pipelines and Related Facilities*

Course Dates
April 29 – May 6, 2017
Local Union 597 Training Center
10850 W. 187th Street; Mokena, IL 60448

May 20-27, 2017
Local Union 464 Training Center
13505 B Street; Omaha, NE 68144

September 23-30, 2017
Local Union 400 Training Center
2700 Northridge Drive; Kaukauna, WI 54130

October 7-14, 2017
Local Union 353 Training Center
6304 W. Development Drive; Peoria, IL 61604

November 11-18, 2017
Local Union 597 Training Center
10850 W. 187th Street; Mokena, IL 60448

3099 Virtual Design and Construction

The purpose of this event is to provide an outline which will help you incorporate VDC into your current training programs, as well as providing a path for training detailers and designers. This event will cover some of the software and hardware currently being utilized in the construction world today, as well as a glimpse into future technology. As an add-on, we will be providing information on the appropriate applications for hardware and software, best practices on installation methods, links for course material, and class lists for instructors interested in attending courses at the UA Instructor Training Program. Some examples of the hardware and software currently being taught are Robotic Total Station, Navisworks, BIM 360, Revit, AutoCAD and Laser Scanning. The technology that we will be using will allow training centers to utilize virtual design to enhance their practical training in the piping industry and show how our industry has adopted the workflow for fabrication and installation utilizing lean construction and automation.

Course Date
October 24-26, 2017
Local Union 469 Training Center
2950 W Thomas Road, Phoenix, AZ 85017

6030 *(Formerly Course 620)* C-2102 YK High Pressure Centrifugal Operation and Maintenance

Students will learn about the internal workings of the YK high-pressure centrifugal single-stage compressor, oil return system, OptiView Control Center and other components and subsystems. A comprehensive review of the preventive maintenance schedule and system capacity checkout procedure is also covered. Work shoes and long pants are required. **Refer to Safety Requirements.**

Course Date
March 7-9, 2017
Gateway Community College
108 N. 40th Street; Phoenix, AZ 85035

6032 *(Formerly Course 622)* C-2111 YVAA Air-Cooled Screw Chiller

Prerequisites: Working knowledge of the YCAV/YCIV chiller, working knowledge of VSDs, and understanding of basic electronics

This three-day course teaches experienced service technicians about the YVAA chiller. The course will include features of this unit and the differences in installation, operation and maintenance from the YCAV. Steel toe, leather shoes and long pants are required. **Refer to Safety Requirements.**

6032 C-2111 YVAA Air-Cooled Screw Chiller *(continued)*

Course Date
May 9-11, 2017
Gateway Community College
108 N. 40th Street; Phoenix, AZ 85035

8001 *(Formerly Course 493)* AWS-CWI® Preparation Course and Exam

Prerequisite: 5 Years' Welding Experience

All fees are the responsibility of the student. See fee schedule.

This course will provide welding inspectors with the knowledge of welding and inspection fundamentals useful on the jobsite. It involves great responsibility and remarkable skill demonstration. The CWI® is widely recognized, both nationally and internationally. This intensive course covers information on nondestructive examination methods applicable to common welding processes and general provisions of API 1104, which includes qualification of welding procedures for welds containing filler-metal additions, design and preparation of the joint for production welding, nondestructive testing and acceptance standards, and automatic welding with and without filler-metal additions. You must be a high school graduate or hold an equivalency diploma and have a minimum of five (5) years' experience in the welding field.

Required text books or reference materials: *API 1104 (21st Edition) Welding Pipelines and Related Facilities*

Course Dates
January 7-14, 2017
Local Union 32 Training Center
595 Monster Road SW Suite 100; Renton, WA 98057

February 4-11, 2017
Local Union 290 Training Center
20220 SW Teton Avenue; Tualatin, OR 97062

February 18-25, 2017
Van Nuys Training Center
7850 Haskell Avenue; Van Nuys, CA 91068

May 6-13, 2017
Local Union 208 Training Center
6350 Broadway; Denver, CO 80216

These classes are provided through the Blackboard™ Learning System at Washtenaw Community College. Participants must have high-speed internet access and be familiar with a computer, navigating the internet and using email. Participants with little or no experience should enroll and complete course Introduction to Online Learning offered by WCC at no cost to UA members. To enroll through the Blackboard™ Learning System go to: http://www.wccnet.edu/academics/classes/online/introduction-class/

1003 *(Formerly Course 103)* Planning, Teaching and Assessing Effective Lessons: Advanced

Prerequisite: Course 1001 (formerly Course 101), Planning, Teaching and Assessing Effective Lessons: Beginner; Course 1002 (formerly Course 102), Planning, Teaching, and Assessing Effective Lessons: Intermediate

This course builds on the lessons and skills learned in 1002 (formerly Course 102), and practiced in the RTAs. Instructors will focus on developing reading and video guides as a way to expand their knowledge of lesson planning. Instructors will also learn how to ask questions to get students involved in discussion, how to support their learning of large amounts of information (such as codes), and how to get them to participate actively in classes. The instructor will continue to practice using technology and designing in-depth learning assessments. As in 1001 (formerly Course 101), and 1002 (formerly Course 102), instructors should have specific lesson plans and assessments to use in teaching at their local union. **Instructors should also have materials for a course they expect to teach.**

Reflective Teaching Assignments (RTAs)

As with previous RTAs, when the course is completed, the instructor will be expected to demonstrate the specific skills in teaching and assessment from 1003 (formerly Course 103), and write a short assessment, noting changes. These are required assignments and must be submitted to the online portfolio.

Course Dates
March 13 – April 24, 2017
October 2 – November 13, 2017

2010 *(Formerly Course 522)* Labor History and the UA: 1800 to the Present

Labor History and the UA is a class covering the struggles of the labor movement from 1800 to the present. This class will cover various labor history and United Association events and people throughout time and the impact and role they have had in labor history.

Required text books or reference materials: *Labor in America (Melvyn Dubosfky and Foster Rhea Dulles); Skilled Hands, Strong Spirits (Grace Palladino); The Rise of the United Association (Martin Segal); DVD published by AFL-CIO Building Construction Trades Department, "A Century of Leadership - Skilled Hands Strong Spirits 100 Year Anniversary" (1908 - 2008)*

Course Date
April 17 – June 5, 2017

3002 *(Formerly Course 228)* Online Teaching Techniques Using Blackboard™

Prerequisite: Must have completed Course 3001 (formerly Course 224) or have fair to good knowledge of Blackboard™ basics. Students must have experience in a Blackboard™ course as an Instructor.

This online course builds on Blackboard™ basics previously learned in Course 3001 (formerly Course 224). Students will get hands-on experience creating and managing their own Blackboard™ course sites. Instructions will be provided on creating effective announcements, using the discussion board, and managing Blackboard™ users. Students will create and take Blackboard™ exams and learn methods and strategies for teaching online using Blackboard™. This is not a beginners course.

Course Dates
February 27 – April 10, 2017
October 2 – November 13, 2017

3020 *(Formerly Course 452)* Introduction to Computer Aided Drafting (CAD)

This course is designed as an introduction to Computer Aided Drafting (CAD) and the CAD environment. Emphasis is placed upon the fundamentals of CAD software and the creation of two-dimensional CAD piping drawings. It is suggested that each student have a USB thumb drive to use with this course.

Required text books or reference materials: *2016 AutoCAD, Level I Manual*

Course Date
March 6 – May 12, 2017

6023 *(Formerly Course 382)* Teaching the HVACR UA STAR Certification

Prerequisite: Participant must have a minimum of 5 years' experience in HVACR. Participants must have high-speed internet access and be familiar with navigating the internet and using email.

All fees are the responsibility of the student and must be paid by the first day of class. See fee schedule.

This course will familiarize you with the UA STAR HVACR Technician Certification exam and prepare you to take the exam through your local union. All of the categories covered by the exam will be reviewed online. Using the Blackboard™ Online Training Platform, you will complete reading assignments, post questions to other participants and your instructors and take practice quizzes. You will have access to online material to help you prepare your own review classes at your local union. The NITC proctored UA STAR HVACR Certification exam will be conducted by your local union.

Course Dates
March 13 – April 24, 2017
October 2 – November 13, 2017

WEB RESOURCES

(To get the IP address for the websites listed below, go to https://uanet.org/regional_training.asp/)

American Society of Safety Engineers (ASSE)
Ann Arbor Area Convention & Visitors Bureau
Blackboard™ Help Page
Blackboard™ Login
Local Union Training Directory Lookup
JATC Bookstore
Occupational Safety & Health Administration (OSHA)
National Inspection Testing Certification
UA Course Registration

REGISTRAR'S OFFICE

Cathy Merkel, Registrar
Email: **cathym@uanet.org**
Telephone: (410) 269-2000, ext. 4028
Fax: (410) 267-0382

Rhonda Stokes, Assistant Registrar
Email: **rhondas@uanet.org**
Telephone: (410) 269-2000, ext. 4093

Tracey O'Leary
Email: **traceyo@uanet.org**
Telephone: (410) 269-2000, ext. 4031

CERTIFICATIONS

Carrie King, Manager
Email: **carriek@uanet.org**
Telephone: (410) 269-2000, ext. 4023
Fax: (410) 267-0382

Angie Sterling
Email: **angies@uanet.org**
Telephone: (410) 269-2000, ext. 4029

International Pipe Trades Joint Training Committee (Bookstore)
Dianne Lash, Manager
Email: **iptbookstore@uanet.org**
Telephone: (301) 218-1241
Fax: (301) 218-8961

WCC UA Blackboard™ Help
Arista Metler, UA Distance Learning Administrator
Email: **arista@wccnet.edu**
Telephone: (734) 477-8908
24/7 Voice Line Help: 1-800-218-4341

WCC Technical Director
Tony Esposito
Email: **aesposito@wccnet.edu**
Telephone: (734) 677-5222
Fax: (734) 677-5427

WCC Logistics Director of UA Programs & Services
Kim Billings
Email: **kbillings@wccnet.edu**
Telephone: (734) 373-3359
Fax: (734) 677-5427

Ann Arbor Area Convention & Visitors Bureau
Kristy Poore, National Sales Account Executive
Email: **kpoore@annarbor.org**
Hospitali-key (734) 717-7282
Phone: (734) 995-7281, ext. 305
Toll-free: 1-800-888-9487
Fax: (734) 995-7283

Michael Baptista
Local Union 342
Oakland, CA

Kim Billings
Washtenaw Community College
Ann Arbor, MI

William Boyd
Local Union 597
Chicago, IL

Alfred Caron
Local Union 51
Providence, RI

Jay Clevenger
Local Union 26
Western Washington

Dennis Critelli
Local Union 30
Billings, MT

Robert Derby
Local Union 174
West Michigan

Elwood "Ken" Eden
Local Union 430
Tulsa, OK

Pat Faley
Local Union 353
Peoria, IL

Justin Forni
Local Union 412
Albuquerque, NM

Leroy Givens
Local Union 630
West Palm Beach, FL

Dale Glavin
Local Union 449
Pittsburgh, PA

Lester Guilfoyle
Local Union 475
Newark, NJ

James Hendrikson
Local Union 533
Kansas City, MO

Michael Howard
Local Union 353
Peoria, IL

James Ivey
Local Union 669
Columbia, MD

Nathan Jacobson
Local Union 400
Appleton, WI

Jaritt Kagan
Local Union 51
Providence, RI

Erik Lambrecht
Local Union 400
Appleton, WI

David Lavoie
Local Union 51
Providence, RI

Thomas Ley
Local Union 449
Pittsburgh, PA

Mike Magennis
Local Union 441
Wichita, KS

David Marland
Local Union 51
Providence, RI

Arista Metler
Washtenaw Community College
Ann Arbor, MI

Thomas G. Murphy
Local Union 520
Harrisburg, PA

Rita Neiderheiser
Local Union 669
Columbia, MD

Stephen Parsons
Local Union 537
Boston, MA

Buster Perry
Local Union 184
Paducah, KY

Eric Posey
Local Union 440
Indianapolis, IN

Patrick Ramirez
Local Union 469
Phoenix, AZ

Brent Richardson
Local Union 50
Toledo, OH

Mark Ronecker
Local Union 268
St. Louis, MO

George Schalk
Local Union 22
Buffalo, NY

Stephan Schnell
Local Union 467
San Meteo, CA

Anthea Schroeder
Washtenaw Community College
Ann Arbor, MI

Michael Schmitt
Local Union 13
Rochester, NY

Aaron Schulz
Local Union 669
Columbia, MD

James J. Smith
Local Union 25
Rock Island, IL

Con Sullivan
Local Union 41
Butte, MT

Joe Vellenga
Local Union 597
Chicago, IL

Thomas Willson
Local Union 357
Kalamazoo, MI

Bob Wiswesser
Welder Training and Testing Institute
Allentown, PA

James Young
Local Union 495
Cambridge, OH

Momcilo Zivanovic
Local Union 597
Chicago, IL