<table>
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<tr>
<th>Course #</th>
<th>Course Name</th>
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<tr>
<td>1003</td>
<td>Planning, Teaching, and Assessing Effective Lessons: Advanced</td>
<td>January 13 - February 24</td>
<td>Blackboard™</td>
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<td>March 23 - May 24</td>
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<tr>
<td>2010</td>
<td>Labor History and the UA: 1800 to the Present</td>
<td>September 28 - November 9</td>
<td>Ann Arbor, MI</td>
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<tr>
<td>2150</td>
<td>OSHA 510 OSHA Standards for the Construction Industry</td>
<td>January 20 - March 23</td>
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<tr>
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</tr>
<tr>
<td>2152</td>
<td>OSHA 502 Update for Construction Industry Outreach Trainers</td>
<td>March 30 - April 2</td>
<td>Ann Arbor, MI</td>
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<tr>
<td>2157</td>
<td>Infection Control Risk Assessment (ICRA) Practitioner</td>
<td>November 2-6</td>
<td>Ann Arbor, MI</td>
</tr>
<tr>
<td>2163</td>
<td>NFPA® 70E® Electrical Safety Train-the-Trainer Course</td>
<td>April 7-9</td>
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<td>3002</td>
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<td>Robotic Total Station Layout – Trimble®</td>
<td>April 14-16</td>
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<tr>
<td>3034</td>
<td>Advanced RTS Training</td>
<td>January 14-16</td>
<td>Joliet, IL</td>
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<tr>
<td>3035</td>
<td>Laser Scanning: Reality Capture for Construction Applications</td>
<td>February 5 - April 29</td>
<td>Online</td>
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<tr>
<td>3090</td>
<td>Revit® Online Training</td>
<td>September 9 - December 9</td>
<td>Madison, WI</td>
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<tr>
<td>3095</td>
<td>Utilizing Revit® for UA Training</td>
<td>January 14-16</td>
<td>San Jose, CA</td>
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<td>February 1-3</td>
<td>Atlanta, GA</td>
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<tr>
<td>4011</td>
<td>Medical Gas Instructor</td>
<td>May 5-7</td>
<td>Harmony, PA</td>
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<tr>
<td>5010</td>
<td>Industrial Rigging Technologies</td>
<td>April 12-16</td>
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<td>Industrial Rigging Certification for Instructors</td>
<td>May 12-14</td>
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<tr>
<td>5020</td>
<td>Level 1 Certification and Implementing a Process Controls Instrument Technician Program</td>
<td>October 6-8</td>
<td>Ann Arbor, MI</td>
</tr>
<tr>
<td>5028</td>
<td>Petrochemical Facility Awareness</td>
<td>October 14-16</td>
<td>New Freedom, PA</td>
</tr>
<tr>
<td>6030</td>
<td>C-2102 YK High Pressure Centrifugal Operations and Maintenance (Johnson Controls)</td>
<td>March 24-26</td>
<td>New Freedom, PA</td>
</tr>
<tr>
<td>6032</td>
<td>C-2111 YVA Air Cooled Screw Chiller (Johnson Controls)</td>
<td>May 5-7</td>
<td>New Freedom, PA</td>
</tr>
<tr>
<td>6033</td>
<td>C-2103 YCAV Air Cooled Rotary Screw Liquid Chillers (Johnson Controls)</td>
<td>March 3-5</td>
<td>New Freedom, PA</td>
</tr>
<tr>
<td>6042</td>
<td>SER 270.30 Series Screw and Scroll Chiller Fundamentals (Carrier Corporation)</td>
<td>March 24-27</td>
<td>Ann Arbor, MI</td>
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<tr>
<td>6043</td>
<td>SER 275-23XRV Liquid Chiller Screw Chiller Service and Operator Course (Carrier Corporation)</td>
<td>October 20-23</td>
<td>Ann Arbor, MI</td>
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<tr>
<td>6070</td>
<td>Daikin Screw Chiller Maintenance Operation and Service</td>
<td>March 31 - April 1</td>
<td>Ann Arbor, MI</td>
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<tr>
<td>6071</td>
<td>Daikin WMC Magnetic Bearing Service and Repair</td>
<td>October 27-28</td>
<td>Ann Arbor, MI</td>
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<tr>
<td>6090</td>
<td>Fujitsu Variable Refrigerant Flow (VRF)</td>
<td>May 18-21</td>
<td>Ann Arbor, MI</td>
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<tr>
<td>7002</td>
<td>Viking® Foam Fire Protection System Training</td>
<td>March 31 - September 3</td>
<td>Harmony, PA</td>
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<tr>
<td>7005</td>
<td>Revit® for Fire Protection I</td>
<td>March 10-12</td>
<td>Harmony, PA</td>
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<tr>
<td>7025</td>
<td>Revit® for Fire Protection II</td>
<td>May 19-21</td>
<td>St. Louis, MO</td>
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<tr>
<td>7026</td>
<td>Revit® for Fire Protection II</td>
<td>July 14-16</td>
<td>St. Louis, MO</td>
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<tr>
<td>7027</td>
<td>Revit® for Fire Protection III</td>
<td>September 22-24</td>
<td>Online</td>
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<tr>
<td>7030</td>
<td>Operation and Set Up of a Fire Protection Trailer</td>
<td>October 12 - December 7</td>
<td>Menomonee Falls, WI</td>
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<tr>
<td>8000</td>
<td>Administration of an Authorized UA Weld Test Facility</td>
<td>April 21-23</td>
<td>Ann Arbor, MI</td>
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<tr>
<td>8001</td>
<td>AWS CWI® Prep Course and Exam</td>
<td>February 25-27</td>
<td>Ann Arbor, MI</td>
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<td>February 1-6</td>
<td>Jacksonville, FL</td>
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<td>February 22-29</td>
<td>Renton, WA</td>
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<td>March 14-21</td>
<td>Albuquerque, NM</td>
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<td>April 25 - May 2</td>
<td>West Seneca, NY</td>
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<td>May 9-16</td>
<td>Omaha, NE</td>
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<td>May 16-23</td>
<td>Blackboard™</td>
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<td>June 16-18</td>
<td>Blackboard™</td>
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</tbody>
</table>

2020 | REGIONAL TRAINING COURSE CATALOG
A minimum of 80 professional development hours (PDHs) must be earned (training received or instruction delivered) during the nine-year certification period, and 20 of the 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 80 PDHs are allowed for any one course.

Credit for a particular course may only be granted once in a nine-year period. For 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.

**UA Courses Acceptable for Use as PDHs:**

**Endorsements**

You can take an endorsement exam to recertify during the six 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:**

- Arc Welding Practical Fundamentals and Theory
- Applied Metallurgy
- Piping Codes for Industrial Work
- Orbital Tube Welding
- Oxy-Fuel Cutting and Welding
- Advanced Orbital Welding
- Teaching Orbital Welding
- Machine Cutting, Severing, and Beveling
- ASME Section B31.1 Code
- Methods in Teaching Downhill Welding
- Teaching Shielded Metal Arc Welding (SMAW)
- Innovative Welding Techniques
- Emerging Welding Technologies
- Teaching Gas Tungsten Arc Welding (GTAW)
- Radiographic Film Interpretation
- ASME Section IX Welding Code
- Advanced Gas Tungsten Arc Welding (GTAW)
- TIP TIG® Wire Feed Welding Process
- Advanced Shielding Metal Arc Welding (SMAW)
- Advanced Gas Metal Arc Welding (GMAW)
- Authorized Testing Representative Refresher
- Authorized Testing Representative
- OSHA 500
- Certified Wire Feed Machine Orbital Welding
- Orbital Wire Feed Remote Video Welding Systems
- AWS CWI® Preview
- Quality Control Management
- Principles of Arc Welding Processes, Welder and Weld Process Qualification, and Metallurgy NPE through Ohio State University (OSU)
- Weld Metallurgy, Defects, and Discontinuities for Process
- AWS CWI® Preview
- Piping Materials through Ohio State University (OSU)
- NDE for Process Piping through Ohio State University (OSU)
- Principles of Welding Processes and Welding Design, Ohio State University (OSU)
- Principles of Welding Design, Ohio State University (OSU)
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.

<table>
<thead>
<tr>
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<td>CADLearning®</td>
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<td>Revit® Online Training</td>
<td>CADLearning®</td>
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<td>5010</td>
<td>Industrial Rigging Technologies (U.S.)</td>
<td>Rigging (R/04); IPT Crane and Rigging Handbook; Signal Person Training Course Instructor Guide</td>
</tr>
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<td>Applied Science of Instrumentation</td>
</tr>
<tr>
<td>8013</td>
<td>Methods in Teaching Gas Metal Arc Welding (GMAW)</td>
<td>Welding Practices and Procedures for the Pipe Trades (ATP) (F/16)</td>
</tr>
</tbody>
</table>

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 that is filled out by students and returned to the instructor who forwards the purchase order to the International Pipe Trades Bookstore.

**Purchase Material for all Regional Training Courses 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
1003  Planning, Teaching, and Assessing Effective Lessons: Advanced

Prerequisite: 1002 Planning, Teaching, and Assessing Effective Lessons: Intermediate

Students must have completed your RTAs for 1002 before taking this class. Students must bring a laptop.

This course builds on the lessons and skills learned in Course 1002 and practiced in the RTAs. Participants will focus on developing reading and video guides as a way to expand their knowledge of lesson planning. Participants 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 in the classroom and designing in-depth learning assessments. As in Course 1001 and Course 1002, instructors should have specific lesson plans and assessments to use in teaching at their local union. Students 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 Course 1003 and write a short assessment, noting changes. These are required assignments and must be submitted to the online portfolio.

Course Date: January 13 - February 24
Location: Blackboard™
Instructor: K. Billings

Course Date: March 23 - May 4
Location: Blackboard™
Instructor: K. Billings

Course Date: September 28 - November 9
Location: Blackboard™
Instructor: K. Billings

2150  OSHA 510 OSHA Standards for the Construction Industry

This course, the prerequisite for Course 2151 OSHA 500, covers construction safety and health principles and OSHA policies, procedures, and standards as they apply to the construction industry. Topics also 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 OSHA 510 prior to taking OSHA 500. This prerequisite must be met, along with the prerequisite of instructors possessing five years of safety and health experience in the construction industry.

Required textbooks or resource materials: OSHA 510 Binder, CFR 1926

Course Date: March 16-19
Location: United Association
Three Park Place
Annapolis, MD

Instructor: J. Young/T. Carrigan

Course Date: August 4-7
Location: Great Lakes Regional Training Center
4800 E Huron River Dr.
Ann Arbor, MI

Instructor: J. Young/W. Walker

Course Date: September 28 - October 1
Location: United Association
Three Park Place
Annapolis, MD

Instructor: M. Baptiste/W. Marable

2010  Labor History and the UA: 1800 to the Present

This course explores the history of work, technology, trade unions, government policy, and globalization from the perspectives of business and labor from colonial times to the present. The history of the United Association is presented within the context of the building and construction trades, general labor history, and the myriad of challenges faced by workers and their organizations over time. As it has done throughout its history, the United Association met these challenges through innovative ap-
2151 OSHA 500 Trainer Course for the Construction Industry

Prerequisite: 2150 OSHA 510 OSHA Standards for the Construction Industry

Please reference the OSHA Trainer Reauthorization Change effective January 1, 2019

Upon successful completion, this regional course authorizes UA instructors to teach the OSHA 10-hour and the OSHA 30-hour construction safety and health outreach programs at their respective locals. Special emphasis is placed on adult learning principles 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. Each participant will receive a completion card acknowledging that they have completed the required training to be designated as an OSHA Authorized Construction Trainer in accordance with OSHA Outreach Training Program requirements. Please email a copy of your current OSHA 510 card or certificate to the registrar’s office.

Required textbooks or resource materials: OSHA 502 Binder, CFR 1926

Course Date: March 30 - April 2
Location: Great Lakes Regional Training Center 4800 E Huron River Dr.
Ann Arbor, MI
Instructor: J. Hendrickson/W. Marable

Course Date: November 2-6
Location: Great Lakes Regional Training Center 4800 E Huron River Dr.
Ann Arbor, MI
Instructor: J. Hendrickson/W. Walker

2157 Infection Control Risk Assessment (ICRA) Practitioner

UA instructors who wish to be certified as ICRA practitioners under the ASSE Series 12000 Standard must receive a passing grade on the written and practical exams.

Certification fees apply and are the responsibility of the student. See fee schedule.

This course will cover and present the best teaching methods on how to prevent the spread of hospital-acquired infections (HAI). The materials presented will be an all-hazard approach for patient and worker protection. The infection control risk assessment (ICRA) practitioner will learn to work within appropriate barriers, define waste removal procedures, and monitor areas of construction adjacent to patients. Participants will be introduced to critical elements of the ASSE Series 12000 Standard, including biological pathogens, waterborne pathogens, and contamination/infection prevention procedures. Additionally, the course will include basic knowledge of analyzing the risk of legionella for building water systems. Participants will learn how to communicate with hospital personnel and how to work within project specifications. Attendees will learn how to create a class for their home local to qualify members to work on all types of hospital projects. Certification to the ASSE Series 12000 Professional Qualifications Standard for the Health and Safety of Construction and Maintenance Personnel will be available at the conclusion of the course. Attendance will fast track the application process for the attendee to become an ASSE-approved instructor or proctor for the 12000 certification.

2152 OSHA 502 Update for Construction Industry Outreach Trainers

Prerequisite: 2151 OSHA 500 Trainer Course for the Construction Industry

Please reference the OSHA Trainer Reauthorization Change effective January 1, 2019

This course is designed for instructors who have completed OSHA 500. OSHA requires that these instructors stay current on OSHA standards, and they must take OSHA 502 every four years to maintain their status. Course participants will receive updates on topics including OSHA construction standards, policies, and regulations. Participants who successfully complete the course will receive a completion card acknowledging that they have completed the required training to continue as an OSHA-Authorized Construction Trainer in accordance with OSHA Outreach Training Program requirements.

Required textbooks or resource materials: OSHA 502 Binder, CFR 1926

Course Date: April 7-9
Location: Great Lakes Regional Training Center 4800 E Huron River Dr.
Ann Arbor, MI
Instructor: R. Neiderheiser/M. Baptista

Course Date: November 3-5
Location: Great Lakes Regional Training Center 4800 E Huron River Dr.
Ann Arbor, MI
Instructor: R. Neiderheiser/T. Carrigan
2157  Infection Control Risk Assessment (ICRA) Practitioner (continued)

Course Date: April 21-23
Location: Local Union 538
         2404 S. Roan St.
         Johnson City
Instructor: D. Molnar

Course Date: March 24-26
Location: Great Lakes Regional Training Center
          4800 E Huron River Dr.
          Ann Arbor, MI
Instructor: B. Baxter

Course Date: October 12-14
Location: Great Lakes Regional Training Center
          4800 E Huron River Dr.
          Ann Arbor, MI
Instructor: B. Baxter

2163  NFPA® 70E® Electrical Safety Train-the-Trainer Course

This course will help UA instructors promote electrical safety on the job site by preparing them to deliver a 1-Day NFPA® 70E® Class to local members. This NFPA® 70E® train-the-trainer course uses activities, exercises, videos, job aids, and hands-on exercises to help UA instructors be confident and competent in training on electrical safety topics and relevant policies and procedures as well as compliance with OSHA 1910 Subpart S and OSHA 1926 Subpart K. Upon successful completion of the course, attendees will be able to teach the 1-Day NFPA® 70E® Class to include how NFPA® 70E® standards and OSHA requirements promote electrical safety, establishing an electrically safe working condition, justification of energized work, and proper use of personal protective equipment and testing equipment for energized work.

Required textbooks or resource materials: NFPA® 70E®: Handbook for Electrical Safety in the Workplace (2018 Edition); NFPA® 70E® Electrical Safety Instructor Guide (provided by NFPA)

Course Date: April 21-23
Location: United Association
         Three Park Place
         Annapolis, MD
Instructor: D. Vigstol/J. Kjome

3002  Online Teaching Techniques using Blackboard™

Prerequisite: Must have completed Course 3001 or have fair to good knowledge of Blackboard™ basics.

Students must be currently enrolled in several Blackboard™ LMS courses with instructor role.

This online course builds on Blackboard™ basics previously learned in Course 3001. 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 beginner’s level course.

Course Date: April 13 - May 18
Location: Blackboard™
Instructor: A. Metler

Course Date: October 26 - November 30
Location: Blackboard™
Instructor: A. Metler

3001  Introduction to Teaching Online Using Blackboard™ LMS

Students must bring a laptop.

In this introductory Blackboard™ LMS course, students will learn to effectively navigate various internet sites and gain an understanding of internet addresses (URLs). Using an assigned Blackboard™ LMS course site, participants will learn how to use some of the basic content areas of a Blackboard™ LMS course site. Various file types used on the internet also will be covered. Students will need basic computer experience and an understanding of online tools.

3033  Robotic Total Station Layout – Trimble®

This course will focus on the Trimble® Robotic Total Station. Participants will learn about the setup, layout, and quality assurance/quality control with an emphasis on hands-on applications, using the latest equipment and software. Training will include how to verify building control points and establish building control points to other levels of a structure. Participants will learn how to load layout points from a model into the Total Station as well as the proper method to load built points back into the model. Personal protective equipment is required. Please refer to the safety requirements.

Required textbooks or resource materials: CAD-Learning®
3033  Robotic Total Station Layout – Trimble® (continued)

Course Date:  May 5-7  
Location:  Great Lakes Regional Training Center  
           4800 E Huron River Dr.  
           Ann Arbor, MI  
Instructor:  J. Branch/R. Gutierrez

3034  Advanced RTS Training  
Prerequisite:  Robotic Total Station Layout – Trimble® or equivalent.

This course is designed to prepare the individual for certification in Trimble® RTS test. This instructor led advanced workshop will test and increase the knowledge and skill of UA members on robotic total station. Participants will explore troubleshooting techniques and explore best practices in QAQC. UA Member will receive a Trimble® RTS Certification on the final day of class with successful completion of both a written and practical test.

Course Date:  April 14-16  
Location:  Local Union 130  
           2114 S I-80 Frontage Rd.  
           Joliet, IL  
Instructor:  J. Branch

3035  Laser Scanning: Reality Capture for Construction Applications  
Prerequisite:  3021 Computer-Aided Drafting (CAD) Level 1, 3025 Autodesk® Revit® MEP

This course will instruct the student in the use of laser scanning equipment and related software for use in creating highly accurate three-dimensional point clouds of existing buildings and mechanical systems for use with BIM applications. Students will scan an existing mechanical equipment room and point clouds will be produced for study of spatial coordination and as-built applications utilizing Autodesk® application software. Training will include transferring data, software and data analysis, certification on scene, and other related software. Faro hardware and software will be available for use at your training center after you successfully complete this training.

Required textbooks or resource materials: CAD-Learning®

Course Date:  January 14-16  
Location:  Local Union 1  
           37-11 47th Ave.  
           Long Island City, NY  
Instructor:  P. Ramirez

3090  Revit® Online Training

Explore the uses of Autodesk® Revit® software as a BIM/VDC design, collaboration, coordination, communication, and fabrication tool for the MEP construction industry. This 13-week online course will follow the Revit® Core curriculum created to help UA members navigate the latest Autodesk® Revit® software. Students will learn how to utilize a design model for coordination and further develop it into installation drawings and fabrication spool sheets. Basic computer skills, access to a computer capable of running Revit® 2020, and the ability to participate in weekly online webinar-style meetings are required for this course. Revit® instructors are welcome to attend and utilize the recorded classes to help supplement your Revit® training.

Required textbooks or resource materials: CAD-Learning®

Note:  Online sessions meet during Central Standard Time (CST)

Course Date:  February 5 - April 29  
Location:  Online  
Instructor:  E. Lambrecht/E. Posey

Course Date:  September 9 - December 9  
Location:  Online  
Instructor:  E. Lambrecht/E. Posey

3095  Utilizing® Revit for UA Training

Revit® is used to create an intelligent model that can be used for both system training as well as best installation practices. This course will focus on utilizing Revit® as a training tool. Participants will create piping systems and projects utilizing Revit®. At the end of the class each participant will add these projects to their digital tool boxes and be able to access these models through BIM 360™.

Course Date:  January 14-16  
Location:  Local Union 601  
           6301 Town Center Dr.  
           Madison, WI  
Instructor:  C. Becker/E. Posey

Course Date:  February 4-6  
Location:  Local Union 393  
           780 Commercial St.  
           San Jose, CA  
Instructor:  J. Ashburn/J. Anaya

Course Date:  March 17-19  
Location:  Local Union 72  
           6120 Purdue Dr., SW  
           Atlanta, GA  
Instructor:  E. Posey/M. Hintz
3095  Utilizing® Revit for UA Training - continued

Course Date: April 21-23
Location: Local Union 537
40 Enterprise St.
Dorchester, MA
Instructor: E. Lambrecht/E. Posey

Course Date: May 12-14
Location: Local Union 449
230 Wise Rd.
Harmony, PA
Instructor: E. Posey/D. Westfall

4011  Medical Gas Instructor

Prerequisite: Current Medical Gas Installer and Medical Gas Brazer Certifications

Certification fees apply and are the responsibility of the student. See fee schedule.

This 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. UA instructors who successfully pass the course and exam will be certified by NITC as a medical gas instructor.


Course Date: April 27 - May 1
Location: Great Lakes Regional Training Center
4800 E Huron River Dr.
Ann Arbor, MI
Instructor: L. Givens

5010  Industrial Rigging Technologies

Students must bring the Pipe Trades Pro Calculator or equivalent to class.

Participants will be trained in the planning and precautions required when lifting materials and equipment. Students will learn 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. The industrial rigging and virtual crane signaling training modules will be demonstrated. Personal protective equipment is required. Please refer to the safety requirements.

Required textbooks or resource materials: Rigging (R/04); IPT Crane and Rigging Handbook; Signal Person Training Course Instructor Guide

Course Date: March 24-26
Location: Great Lakes Regional Training Center
4800 E Huron River Dr.
Ann Arbor, MI
Instructor: M. Howard/B. Massengale

5011  Industrial Rigging Certification for Instructors

Prerequisite: 5010 Industrial Rigging Technologies

Students must bring the Pipe Trades Pro Calculator or equivalent to class.

Students will be provided theoretical and practical components that cover the most widely accepted rigging practices, including calculating centers of gravity, sling stress, crane setup, as well as the use of tuggers, jacks, and rollers. Instructors' rigging skills are evaluated by means of a written exam and also a hands-on performance exam administered by having the examinee perform a sequence of lifts using the required tools and equipment. The industrial rigging and virtual crane signaling training modules will be demonstrated and used. Personal protective equipment is required. Please refer to the safety requirements.

Note: Review pages 1 to 163 in the IPT Crane and Rigging Handbook, all of the Rigging Manual, and review the math in both books.

Required textbooks or resource materials: Rigging (R/04); IPT Crane and Rigging Handbook

Course Date: October 12-16
Location: Great Lakes Regional Training Center
4800 E Huron River Dr.
Ann Arbor, MI
Instructor: S. Parsons/M. Howard/E. Ingles
5020  Level 1 Certification and Implementing a Process Controls Instrument Technician Program

This course contains both an online component (20 hours) and an in-classroom component (40 hours)
The online component consists of basic math, sciences, and fundamentals related to instrumentation and controls, as applied to the UA certification. The objectives of this portion are to present the principles and operations of industrial instrumentation, and to prepare the student for the in-class component of the course. The contents will consist of definitions, symbols, P&ID's, level, pressure, flow and temperature measuring instruments. The students will be required to read and review the 19 chapters in the "Applied Science of Instrumentation" text book. The students must complete all online chapter review questions, midpoint review questions and final review questions prior to starting the in-class portion.

The online portion of the course will be monitored by a UA instructor but students are expected to complete this portion at their own pace/schedule, but prior to entering the next component

After the completion of the online component, the student will attend an in-class component. This 40-hour segment (five, eight-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. 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 Applied Science of Instrumentation book. We will review the four domains of instrumentation: (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 1 UA/IBEW/EPRI certification exam.

Required textbooks or resource materials: Applied Science of Instrumentation

Course Date: May 12-14
Location: DC 16 - Gardena Training Facility
18349 South Figueroa St.
Gardena, CA
Instructor: W. Wood

Course Date: October 6-8
Location: Great Lakes Regional Training Center
4800 E Huron River Dr.
Ann Arbor, MI
Instructor: W. Wood

5028  Petrochemical Facility Awareness

Students are encouraged to bring a laptop.

A minimum of two years of experience in the petrochemical industry recommended.

This course is designed to educate UA members working in the petrochemical industry. Topics will include the history of oil and its global impact, refinery culture, personal responsibilities, and emergency action plan awareness. All permit procedures will be reviewed, along with a basic understanding of refinery units and their produced streams and operations. Refinery unit hazards will be identified while reviewing pipelining skills, including fabrication, pressure testing, safe bolting practices, and rigging fundamentals.

Students will receive curriculum and materials to implement a 40-hour course at their home local.

Course Date: May 12-14
Location: DC 16 - Gardena Training Facility
18349 South Figueroa St.
Gardena, CA
Instructor: W. Wood

Course Date: October 6-8
Location: Great Lakes Regional Training Center
4800 E Huron River Dr.
Ann Arbor, MI
Instructor: W. Wood

6030  C-2102 YK High Pressure Centrifugal Operations/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 are also covered. Personal protective equipment is required. Please refer to the safety requirements.

Course Date: March 24-26
Location: Johnson Controls
3021 W. Bend Dr.
Irving, TX
Instructor: Johnson Controls Representatives
6032  C-2111 YVAA Air Cooled Screw Chiller (Johnson Controls)

Prerequisite: Working knowledge of 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-toed leather shoes and long pants are required. Personal protective equipment is required. Please refer to the safety requirements.

Course Date: May 5-7
Location: Johnson Controls
          5000 Renaissance Dr.
          New Freedom, PA
Instructor: Johnson Controls Representatives

6033  C-2103 YCAG Air Cooled Rotary Screw Liquid Chillers (Johnson Controls)

This three-day course teaches service personnel about the YCAG Chiller features, including the screw compressor, system ancillary components, start-up procedures, unit operation, and maintenance. Steel-toed leather shoes and long pants are required. Personal protective equipment is required. Please refer to the safety requirements.

Course Date: March 3-5
Location: Johnson Controls
          5000 Renaissance Dr.
          New Freedom, PA
Instructor: Johnson Controls Representatives

6042  SER 270 30 Series Screw and Scroll Chiller Fundamentals (Carrier Corporation)

Students will learn to operate, maintain, troubleshoot and service Carrier’s complete line of 30 series air-cooled and water-cooled chillers. Models include 30GX/H-X, RA/RB, and 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, and water and air-cooled condensers. Participants will also learn how to analyze performance by recording and analyzing refrigerant and water pressures and temperatures. Admittance into this course is subject to Carrier Corporation’s registration policies. When registering for this course, please email cathy@uanet.org with the company you work for and if you are a Lead AP. Personal protective equipment is required. Please refer to the safety requirements.

Course Date: March 31 - April 1
Location: Carrier Corporation Representatives
          Great Lakes Regional Training Center
          4800 E Huron River Dr.
          Ann Arbor, MI
Instructor: Carrier Corporation Representatives

Course Date: October 27-28
Location: Carrier Corporation Representatives
          Great Lakes Regional Training Center
          4800 E Huron River Dr.
          Ann Arbor, MI
Instructor: Carrier Corporation Representatives

6043  SER 275 23XRV Liquid Chiller Screw Chiller Service & Operator Course (Carrier Corporation)

This course is targeted at service technicians who operate or service 23XRV chillers. Chiller refrigeration cycle, compressor theory, drive theory, cooler heat transfer, and water-cooled condensers will be covered. Operation and function of the compressors, muffler, condenser, coolers, economizers, metering devices, oil concentrator and accessories are covered. The attendees 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 prestart and start-up procedures, operational, and field issues will be covered. Admittance into this course is subject to Carrier Corporation’s registration policies. When registering for this course, please email cathy@uanet.org with the company you work for and indicate if you are a Lead AP. Personal protective equipment is required. Please refer to the safety requirements.

Course Date: March 24-27
Location: Carrier Corporation Representatives
          Great Lakes Regional Training Center
          4800 E Huron River Dr.
          Ann Arbor, MI
Instructor: Carrier Corporation Representatives

Course Date: October 20-23
Location: Carrier Corporation Representatives
          Great Lakes Regional Training Center
          4800 E Huron River Dr.
          Ann Arbor, MI
Instructor: Carrier Corporation Representatives
6070  Daikin Screw Chiller Maintenance Operation and Service
This is structured to provide basic classroom instruction, demonstrations, and hands-on exercises designed to familiarize the student with the product features, operation, maintenance and service requirements for Daikin Screw Chiller products. The standard program for the maintenance, operation, and service seminar is four-and-one-half days of intensive training. The products covered in this seminar will be the AGS, AWS and AWV air-cooled. Screw chillers and the WGS and WWV water-cooled chiller Screw chiller. Personal protective equipment is required. Please refer to the safety requirements.

Course Date: May 18-21
Location: Daikin Plant
207 Laurel Hill Rd.
Verona, VA
Instructor: Daikin Plant Representatives

7002  Viking® Foam Fire Protection System Training
This hands-on class featuring Viking® foam tank and Viking® valves, is the second in a series of special hazards fire protection training. This course is intended for the special hazards and ITM instructors who want to add foam systems to their training programs. The first part of this course will cover Viking® foam systems installation requirements along with proper operation and setup. The second part of the class will focus on inspection, testing and maintenance which will include troubleshooting and repair.

Course Date: May 19-21
Location: Great Lakes Regional Training Center
4800 E Huron River Dr.
Ann Arbor, MI
Instructor: J. Ivey

6071  Daikin WMC Magnetic Bearing Service and Repair
This course is designed to teach the maintenance and service technician how to maintain, operate, troubleshoot, and repair Daikin Magnitude WMC Magnetic Bearing Chillers. Compressor monitor software is provided. The standard program for the WMC Magnetic Bearing Chiller Course is four-and-one-half days of intensive training. Personal protective equipment is required. Please refer to the safety requirements.

Course Date: August 31 - September 3
Location: Local Union 449
230 Wise Rd.
Harmony, PA
Instructor: Daikin Plant Representatives

7025  Revit® for Fire Protection
Prerequisite: Revit® MEP, Revit® Core, or equivalent.
This Revit® training will focus on the life safety systems utilized in the fire protection industry utilizing HydraCAD® for Revit®. The course is designed for the instructor who is ready to bring BIM into their training program and advance today's technology to create digital fire protection systems that are part of sprinkler fitter training. This virtual installation course will include subjects such as sprinkler location and spacing, hanging and bracing, system components, and an introduction into hydraulic calculations.

Course Date: July 14-16
Location: Local Union 268
1544 S 3rd St.
St. Louis, MO
Instructor: A. Johnston/R. Rickert

6090  Fujitsu Variable Refrigerant Flow (VRF)
RAFT - Regional Airstage Installation Training and Start Up training. The attendee will learn principles of project planning, installation, commissioning, and troubleshooting techniques. Additionally, recommended practices for refrigerant piping, wiring, and system set up will be offered. The participants will also take part in a hands on experience that will include Function Settings, system set up and Service Tool interface. This course will earn the student a Fujitsu certificate to install and commission Airstage VRF systems.
7026  Revit® for Fire Protection II

Prerequisite: 7025 Revit® for Fire Protection I

The course is the next step in recreating types of fire protection along with hydraulic calculations as we continue to utilize HydraCAD® for Revit® and all the tools available from this software. This course will provide more BIM integration into your current training as well as exposing current clash detection options and navigating through Navisworks®. The goal of this class is to create a better understanding of the BIM workflow and the challenges faced by the detailers in the collaboration of FPF with the other trades. This course will also explore the fabrication and stock listing ability of HydraCAD® for Revit®.

Course Date: September 22-24
Location:  Local Union 268
         1544 S 3rd St.
         St. Louis, MO
Instructor:  A. Johnston/R. Rickert

7027  Revit® for Fire Protection III

Prerequisite: 7026 Revit® for Fire Protection II

This course takes a deeper dive into BIM as you begin a project to virtually install a fire protection system into a medical facility. This challenging course will provide a better understanding of what it takes to create, calculate, list and complete a BIM project utilizing HydraCAD® software through the eyes of a detailer. This real case scenario will have you engaged in the details of what happens within a virtual design and construction project to better equip you as a foreman, superintendent, project manager or detailer.

Note: Online sessions meet during Central Standard Time (CST)

Course Date: October 12 - December 7
Location:  Online
Instructor:  A. Johnston

7030  Operation and Set Up of Fire Protection Trailer

UA student instructors participating in this course will learn how to present classes utilizing the trainees 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 setup and breakdown that protects the trailer. Instructors will learn the best practices for teaching with the training trailer along with proper trailer setup and re-packing, 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 and electrical systems. The training trailer event scheduling and transportation policies will be covered. Safety shoes are mandatory. Refer to Safety Requirements.

Course Date: April 21-23
Location:  Local Union 183
         W 175 N 5700 Technology Dr.
         Menomonee Falls, WI
Instructor:  J. Ivey

8000  Administration of an Authorized UA Weld Test Facility

Explore the processes involved with the testing of welders in accordance with the UA Welder Certification Program. Participants will be able to perform the duties and responsibilities of an authorized testing representative (ATR) as defined in the welder certification program that includes the administration of a welder testing event, required documentation, and determining the acceptability of weld test assemblies during in-process and final inspections.

Course Date: February 25-27
Location:  Great Lakes Regional Training Center
         4800 E Huron River Dr.
         Ann Arbor, MI
Instructor:  R. Derby
8001 AWS CWI® Prep Course and Exam

Prerequisite: Five years of welding experience
Certification fees apply and are the responsibility of the student. See fee schedule.

Note: Registration will be deleted if the AWS paperwork is not submitted on time.

This course will provide welding inspectors with the knowledge of welding and inspection fundamentals useful on the job site. 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. The student must be a high school graduate or hold an equivalency diploma and have a minimum of five (5) years of experience in the welding field.


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<tr>
<th>Course Date</th>
<th>Location</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>February 1-8</td>
<td>Local Union 234 489 Stevens St. Jacksonville, FL</td>
<td>J. Forni/B. Richardson</td>
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<td>March 14-21</td>
<td>Local Union 412 411 Arizona SE Albuquerque, NM</td>
<td>J. Forni/C. Neel</td>
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<td>April 25 - May 2</td>
<td>Local Union 22 120 Gardenville Pkwy., #3 West Seneca, NY</td>
<td>D. Glavin/T. Murphy</td>
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<tr>
<td>May 9-16</td>
<td>Great Lakes Regional Training Center 4800 E Huron River Dr. Ann Arbor, MI</td>
<td>R. Derby/J. Wilson</td>
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Course Date: May 16-23
Location: Local Union 597 10850 W 187th St. Mokena, IL
Instructor: E. Eden/N. Brown/C. Neel

Course Date: June 13-20
Location: Local Union 189 1226 Kinnear Rd. Columbus, OH
Instructor: C. Sullivan/D. Donnell/P. Villanueva

Course Date: July 18-25
Location: Local Union 400 460 W 11th St. Fond du Lac, WI
Instructor: J. Wilson/C. Schultz

Course Date: August 1-8
Location: Great Lakes Regional Training Center 4800 E Huron River Dr. Ann Arbor, MI
Instructor: E. Eden/C. Sullivan/P. Villanueva

Course Date: September 12-19
Location: Local Union 464 13505 B St. Omaha, NE
Instructor: D. Glavin/T. Murphy

Course Date: October 10-17
Location: Local Union 572 225 Ben Allen Rd. Nashville, TN
Instructor: E. Eden/N. Brown/D. Donnell

8011 Radiographic Film Interpretation Level 1

Note: Test will be administered by the Welder Training and Testing Institute (WTTI).

Acquire the basic skills and techniques when viewing and interpreting radiographic films (X-rays). The course will involve theory and hands-on practical labs interpreting X-ray films of piping welds. It is recommended attendees hold the AWS CWI® credential.

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<td>March 24-26</td>
<td>Great Lakes Regional Training Center 4800 E Huron River Dr. Ann Arbor, MI</td>
<td>J. Wiswesser</td>
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8013  Methods in Teaching Gas Metal Arc Welding (GMAW)
Prerequisite: Current GMAW UA Welder Certification
This course covers advanced pipe welding techniques used in applications such as welding alloy materials and process piping. The course focuses on how to teach advanced techniques of gas metal arc welding and the process variables for a variety of materials. This course provides local unions a means of preparing its members in developing the skills necessary to address the industry's welding needs. Students must bring their own welding hood, welding jacket, and welding gloves. Personal protective equipment is required. Please refer to the safety requirements.

Required textbooks or resource materials: Welding Practices and Procedures for the Pipe Trades (ATP) (F/16)

Course Date: May 12-14
Location: Great Lakes Regional Training Center 4800 E Huron River Dr. Ann Arbor, MI
Instructor: A. Caron/D. Lavoie

8018  Introduction to Automatic Welding for Heavy Wall Pipe
Prerequisite: 8014 Methods in Teaching Advanced Gas Tungsten Arc Welding (GTAW)
This course is focused on train-the-trainer and will provide the instructor with an understanding of how to teach the orbital wire feed remote welding process at the local level. The course covers the operation, technology, and equipment setup and safety issues associated with these types of advanced welding systems. Additionally, this course covers process variables, system programmer control functions and weld parameter selection which provides the theoretical basis for weld program development. The course is structured to provide instructors with a hands-on training approach using the Remote Video AMI 415 and Liburd Gold Track Fire View orbital wire feed welding systems. Students must bring their own welding hoods, welding jackets, welding gloves, work shoes, and wear proper protective clothing. Personal protective equipment is required. Please refer to the safety requirements.

Course Date: April 21-23
Location: Great Lakes Regional Training Center 4800 E Huron River Dr. Ann Arbor, MI
Instructor: N. Schneider/ L. Middleton

8036  Phased Array Ultrasonic Testing of Pipe Welds
We are seeing more and more industrial projects using a new form of ultrasonic testing to inspect piping welds in lieu of radiographic (X-ray) inspection. Compared with radiography, Phased Array Ultrasonic Testing (PAUT) offers the advantage of process control, as welds can be inspected soon after completion, and feedback can be given rapidly to the welding crew. PAUT is superior to Radiographic Testing (RT) at finding lack of fusion defects, especially side weld lack of fusion, as well as cracks and incomplete penetration-type root defects. The course is designed to familiarize the participants in the basic principles behind Phased Array Ultrasonic Testing (PAUT) with a goal to become familiar with the displayed information and approaches to analyze test results for determining the location, size, and characterization of weld defects. In addition, the course will address the key steps to passing PAUT weld inspections. The course curriculum includes presentations, resources, and hands-on demonstrations of the PAUT equipment.

Course Date: May 19-21
Location: Great Lakes Regional Training Center 4800 E Huron River Dr. Ann Arbor, MI
Instructor: R. Wiswesser

9000  Administration of a Training Program for New Training Coordinators
This training is designed to give new training directors/coordinators the tools they need to run the Local Union Joint Apprenticeship Training Fund. Demonstrations will be given on apprenticeship standards, grants guidelines, certifications, recruitment, and other related topics.

Course Date: March 9-12
Location: United Association
Three Park Place
Annapolis, MD
Instructor: ITF Staff