

APPENDIX B:

2021 INSTRUCTOR TRAINING IN THE PIPE TRADES:

International Training Fund: August 13 – 19, 2022

August 2022 / 68th Program

Washtenaw Community College

20

ITP

**RETURNS TO
IN-PERSON LEARNING**

INDUSTRY DAY

Discover the latest
developments in
UA education
and training



INSTRUCTOR TRAINING PROGRAM

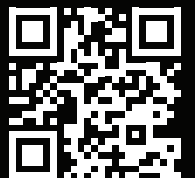
**August 13-19, 2022
Ann Arbor, Michigan**

INTERNATIONAL APPRENTICE CONTEST

Observe talented apprentices during ITP week

NEW CLASSES OFFERED

The Education and Training Department
are committed to presenting the latest
equipment and techniques



<https://uanet.org>

GENERAL OFFICERS

Mark McManus
General President
Patrick H. Kellett
General Secretary-Treasurer
Michael A. Pleasant
Assistant General President

GENERAL EXECUTIVE BOARD

Peter E. Gibbons, Vice President, District 1
Kenneth J. Broadbent, Vice President, District 2
Daniel C. Hendrix, Vice President, District 3
Steven S. Breitlow, Vice President, District 4
Gary Arnold, Vice President, District 5
James H. Noon, Vice President, District 6, Canada

EXECUTIVE OFFICERS

Michael P. Mulvaney
Executive Vice President
Terence N. Snooks
Director of Canadian Affairs
Christopher A. Haslinger
Administrative Assistant to the General President
Bradley M. Karbowski
Administrative Assistant to the General President
Derrick Kualapai
Administrative Assistant to the General President
Terry Webb
Administrative Assistant to the General President/
Canada

DIRECTORS

Thomas G. Bigley
Director of Plumbing Services
Patrick M. Dolan, Jr.
Director of Metal Trades
Anthony Gallagher
Director of Trade Jurisdiction
Chad Gilbert
Director of Pipeline and Gas Distribution
Wendall Hibdon
Director of Energy and Infrastructure
Brian P. Kelly
Director of HVACR Service
James G. Pavesic
Director of Education and Training
Jason N. Pope, Sr.
Director of Information Technology
James E. Tucker
Director of Organizing and Recruitment

UA Special Representatives (Education and Training)

Laura Ceja, Training and Outreach
Michael Gordon, Training/Canada
Alanna Marklund, Youth Diversity & Indigenous Relations/Canada

Assistant Director of Education and Training
Raymond W. Boyd

International Training Fund Administrator
Jocelyn Crowder

UA Training Specialists

Bruce Dantley
Robert Derby
Michael Galfano
Randall Gandy
Micheal Hazard
Jennifer Massey
Kenneth Schneider
Robert Vilches

UA Training Specialists/Canada

Jamie McPherson
Ray Lemieux

Health, Safety and Environmental Administrator

Jennifer Massey

ITF BOARD OF TRUSTEES

Union Trustees:

James G. Pavesic, Chairman
Kevin Bellew, Local Union 696
Aaron L. Butler, Local Union 469
Scott Gale, Local Union 15
Gregory Lancette, Local Union 267
Kurt Meade, Local Union 172

Management Trustees:

Michael R. Cables (MCAA), Co-Chairman
Frederic Barall (NFSA)
Renee Fiorelli (MSCA)
Greg Fuller (MSCA)
Thomas Gent (PHCC)
Mark Rogers (MCAA)

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

Dear Brothers and Sisters:

The United Association (UA) Education and Training Department is pleased to present our Instructor Training Program. This year marks our 68th Instructor Training Program, and more than 30 years held at Washtenaw Community College!

Our mission to train the trainer takes place each year in Ann Arbor, Michigan. The work that you do this week will ensure that the UA maintains its training excellence and is continued to be viewed as having the most admired training program in the industry. Our comprehensive training curriculum has been developed to safeguard our memberships' employability, to stay relevant with industry change, and to prepare for the demands of the future. We're proud to offer the finest training, which includes access to the most innovative and relevant education and technology within the industry.

Our contractors and owners have hailed safety, productivity, and skills training to be the most important factors on the job. These fundamentals go hand-in-hand with the excellent training that we provide. We believe that you, the UA instructors, are the key to maintaining the highest level of quality craftsmanship in our industry.

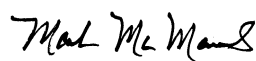
As you prepare for UA week, you'll notice a number of new courses developed by our Education and Training Department. We are committed to presenting the latest equipment and techniques used in the field, and we are committed to growing this organization. An example of some of the new courses this year include *Energy Based Hazard Recognition & OSHA 7415*, *Advanced RTS Training*, *Medical Gas Inspector*, *Methods in Teaching Fuel Gas Systems*, *One Day Retro Fit*, *Addressing Diversity, Equity, and Inclusion in Apprenticeship*, and *Introduction to Peer Support Skills and Mental Health Literacy*, and more. Please take the time to review all the new courses available in 2022.

The International Apprentice Contest is a significant event also held during the week of Instructor Training Program. We encourage you to visit the competition and observe our talented apprentices who have put in many hours of hard work and dedication to arrive at our International Contest.

We will also continue our commitment to support veterans and wounded members of all branches of the U.S. Armed Forces by holding a charity event during the annual UA Block Party. The 5k Race and Pub Crawl will be held on August 15th. The proceeds from these events will be donated to the Semper Fi Fund. The Semper Fi Fund provides immediate financial assistance and lifetime support to post 9/11 wounded veterans and their families to assist them with the resources needed during recovery and transition back into their communities. The UA Block Party also features live entertainment from the Tool Shed Band, sponsored by Milwaukee Tool.

We are excited to welcome you and look forward to seeing everyone in Ann Arbor for another successful Instructor Training Program!

Faternally yours,



Mark McManus
General President

Our Mission Statement

The mission of the UA Education and 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.

“The procedures, policies, and course offerings set forth in this catalog are subject to revision from time to time. The most up-to-date available versions of the policies, procedures, and course offerings are contained in the electronic version of this document which may be accessed at uanet.org.”

Calendar of Events	Page 4-5
About the Instructor Training Program	Page 6-7
Safety Requirements for Personal Protective Equipment	Page 7
Graduation Requirements and Procedures	Page 8-9
The Family Educational Rights and Privacy Act (FERPA)	Page 10
Continuing Education: Certificate and Associate Degree Opportunities	Page 11
Course List	Page 12-13
New and Revised Courses	Page 14-15
ITP Courses	Page 16-43
Required Text Materials for Classroom Use	Page 44-45
Nine-Year Recertification for CWI®	Page 46
Certification Workshops and Fees	Page 47
Great Lakes Regional Training Center Staff	Page 48
Instructional Faculty and Industry Representatives	Page 49-52
Acknowledgements	Page 53
ITP Staff and Office Locations	Page 54
Local Emergency Contact Information	Page 55
WCC Campus Safety and Security	Page 56
Interactive Resources	Page 57-58
ITP Events	Page 59-60
Campus Food Map	Page 61
WCC Campus Map	Page 62

CALENDAR OF EVENTS

Saturday, August 13, 2022

- 8:00 a.m. to 4:30 p.m. **Industry Sponsored Vendor Displays**
(Complimentary pastries and coffee served in the morning and hot dogs, chips, and beverages served in the afternoon)
- 8:00 a.m. to 5:00 p.m. **Instructor Training Program and the International Apprentice Contest Begin**
- 8:00 a.m. to 5:00 p.m. **Registration**
Morris J. Lawrence Building, Lobby
- 8:00 a.m. to 5:30 p.m. **International Pipe Trades Joint Training Committee Bookstore Open**
Instructional Materials and Books
Morris J. Lawrence Building, Room - ML 103
- 9:00 a.m. to 10:00 a.m. **Faculty Registration**
Morris J. Lawrence Building, Lobby
- 9:00 a.m. to 12:00 p.m. **Blackboard™ LMS Drop-In Session**
Morris J. Lawrence Building, Room - ML 124
- 10:00 a.m. to 11:00 a.m. **Faculty Meeting for ALL Faculty (Required)**
Morris J. Lawrence Building, Towsley Auditorium
- 10:00 a.m. to 2:00 p.m. **Backflow Prevention Assembly Tester Recertification***
Occupational Education Building, Room - OE 151
- 10:00 a.m. to 4:00 p.m. **UA STAR® Certification/Recertification Exam***
Gunder Myran Building, Room - Computer Commons
- 12:00 p.m. to 4:00 p.m. **Adult Life Support/First Aid Recertification Exam***
Gunder Myran Building, Room - GM 332
- 12:30 p.m. to 2:30 p.m. **UA Women Instructors “Meet and Greet”**
Business Education Building, Room - BE 160
- 1:00 p.m. to 4:00 p.m. **Blackboard™ LMS Drop-In Session**
Morris J. Lawrence Building, Room - ML 124
- 1:00 p.m. to 5:00 p.m. **ASSE 12000 Recertification Infection Control Risk**
Crane Liberal Arts and Science Building, Room - LA 352
- 1:30 p.m. to 4:00 p.m. **RTA Drop-In Session**
Morris J. Lawrence Building, Room - ML 124
- 2:45 p.m. to 4:00 p.m. **First-Year Student Meeting (Required)**
Morris J. Lawrence Building, Towsley Auditorium

Sunday, August 14, 2022

- 7:30 a.m. to 5:30 p.m. **International Pipe Trades Joint Training Committee Bookstore Open**
Instructional Materials and Books
Morris J. Lawrence Building, Room - ML 103
- 8:00 a.m. to 9:00 a.m. **UA Future Instructors Registration**
Morris J. Lawrence Building, Lobby
- 8:00 a.m. to 5:05 p.m. **Instructor Training Program and the International Apprentice Contest Continue**

Monday, August 15, 2022

- 7:30 a.m. to 5:30 p.m. **International Pipe Trades Joint Training Committee Bookstore Open**
Instructional Materials and Books
Morris J. Lawrence Building, Room - ML 103
- 8:00 a.m. to 5:05 p.m. **Instructor Training Program and the International Apprentice Contest Continue**
- 6:00 p.m. to 10:00 p.m. **UA Block Party**
Main Street, Downtown Ann Arbor
Annual UA 5K Race (6:45 p.m.) and Pub Crawl
Proceeds Benefit the Semper Fi & America's Fund
Live Entertainment by Milwaukee Tool Shed Band

Tuesday, August 16, 2022

- 7:30 a.m. to 5:30 p.m. **International Pipe Trades Joint Training Committee Bookstore Open**
Instructional Materials and Books
Morris J. Lawrence Building, Room - ML 103
- 8:00 a.m. to 5:05 p.m. **Instructor Training Program and the International Apprentice Contest Continue**

Wednesday, August 17, 2022

- 7:30 a.m. to 5:30 p.m. **International Pipe Trades Joint Training Committee Bookstore Open**
Instructional Materials and Books
Morris J. Lawrence Building, Room - ML 103
- 8:00 a.m. to 5:05 p.m. **Instructor Training Program and the International Apprentice Contest Continue**
- 9:00 a.m. to 12:00 p.m. **Industry Day**

Thursday, August 18, 2022

- 6:30 a.m. to 11:30 a.m. **International Pipe Trades Joint Training Committee Bookstore Open**
Instructional Materials and Books
Morris J. Lawrence Building, Room - ML 103
- 7:00 a.m. to 11:05 a.m.** **Instructor Training Program Continues and the International Apprentice Contest Concludes**
- 3:00 p.m. to 5:30 p.m. **Instructor Training Program Completion Ceremony/ International Apprentice Contest Winners Announced**
Eastern Michigan University
Convocation Center
799 North Hewitt Road
Ypsilanti, Michigan 48197

Friday, August 19, 2022

- 7:00 a.m. to 11:05 a.m.** **Instructor Training Program Concludes**

Class Meets Daily, Sunday to Friday, August 14-19, 2022
Students Must Attend All Hours of All Classes to Receive Credit

*Certification Workshops (See page 47) for details
**Note time change

ABOUT THE INSTRUCTOR TRAINING PROGRAM

The United Association (UA) has a continuing interest in the quality of our members' job performance. We believe that you, the UA instructors, are key to maintaining the high level of achievement for which we are known, and we are determined to retain our esteemed position in this regard.

The ability to create quality craftsmanship comes from good teaching. Therefore, we designed the United Association Instructor Training Program (ITP) specifically for you and your needs as instructors. Our aim is to help improve teaching techniques, diversify mechanical skills, and enhance knowledge of the scientific and technical elements of the trade. We encourage you to make the most of this unique opportunity. **Courses are ONLY available to instructors who are members.** Allowance for registration in certain classes may be granted by the UA Director of Education and Training.

Purposes

The Instructor Training Program for instructors of journeymen and apprentices is designed to:

- Increase UA instructors' proficiency of instructional techniques and materials.
- Acquaint instructors with the philosophy and principles of education, especially trade, industrial, and technical education.
- Provide learning experiences in the principles and the fundamentals of the applied knowledge subjects.
- Expand the understanding of our instructors in the technical aspects of the crafts and convey information to the instructors about the latest developments in this area.

Elements of the Program

200-Hour Instructor Certificate Program

This program is divided into two main elements of instruction: the professional element, which involves courses dealing with the principles and techniques of teaching; and the applied and technical element, which involves courses dealing with trade-specific technology and science.

Instructors in this program will take 100 hours of professional courses and 100 hours of technical courses.

120-Hour Coordinator Certificate Program

This program is designed for training coordinators/directors or members of the JATC operating the UA training program within their local. Instructors who successfully complete the required courses will then earn a coordinator certificate. These courses focus on UA-specific interests and administration of training programs.

Certificates

The title *Certified Instructor of Journeyworkers and Apprentices in the Plumbing and Pipefitting Industry* will be conferred on those who satisfactorily complete **200 hours of course work (including all required classes) in the Instructor Certificate Program.**

The title *Certified Coordinator of Journeyworkers and Apprentices in the Plumbing and Pipefitting Industry* will be conferred on those who satisfactorily complete **120 hours of required courses in the Coordinator Certificate Program.**

Achievement and Attendance

Your course instructor will evaluate your performance and the registrar will record your achievements in the form of grades. Each faculty member will utilize current grading system.

The registrar will send you a transcript following the close of the session. The transcript contains the name, course hours, and grades earned for each course.

NOTE: Classes end at 11:05 a.m. on Friday, August 19.

Registration

To be eligible for enrollment, an instructor must receive approval from his or her local union and must be an active or prospective instructor in a UA JATC training program.

All registrants must have a valid email address. Course registration will be available online at <https://uanet.org>.

Official registration for the program will be completed during check-in on Saturday, August 13, in the lobby of the Morris J. Lawrence Building at Washtenaw Community College, 4800 East Huron River Drive, Ann Arbor, MI 48105.

IPT-JTC Bookstore

For instructional materials and books:

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
<https://shop.iptbookstore.com>

Grant Opportunities

Textbooks

The ITF will cover the cost of the required textbooks that may be required for any course that an instructor is attending. Please note that the customer service videos are limited to one set per local, and local training programs that have previously received a copy are not eligible.

Safety Requirements For Personal Protective Equipment

Students must bring their own welding hood, welding jacket, and welding gloves. These items will not be supplied. Safety equipment and protective clothing are required for all shop classes. Safety requirements will be strictly enforced. Any student who fails to meet these safety requirements will not be permitted to participate in the activity and may be removed from class. If you are not sure of the requirements, ask your instructor.

Eye Protection

Eye protection conforming to ANSI Z87.1-1968 shall be used as primary protection. Safety glasses are required in all shop classes and will be provided. Prescription safety glasses with side shields must also be ANSI Z87.1-compliant. Over-glasses may be worn over prescription eyewear in lieu of prescription safety glasses.

Face Protection

Face shields shall be used as secondary protection over safety glasses when the task requires it. In addition, an arc-rated face shield and hardhat may be required for tasks where arc flash or arc blast hazards may exist in accordance with NEC 70E – 2021.

Welding Hoods

Welding hoods and head covering must meet industry standards and be approved by the faculty instructor. You must bring a welding hood for welding classes.

Hand Protection

Task-specific gloves appropriate for hot work or working with sharp objects **MUST BE WORN FOR ALL SHOP CLASSES** and approved by the faculty instructor. Hand protection may also include dielectric gloves with leather protectors for tasks requiring shock protection as required by NEC 70E – 2021.

Foot Protection

Sturdy work boots or shoes made of leather or similarly strong materials are required to be worn in all shop classes. Sneakers or sandals are not permitted.

Protective Clothing

Sturdy long sleeve shirts and long pants are required in all shop classes. Shorts are not permitted. In addition, arc-rated protective clothing may be required for the task being performed in accordance with NEC 70E – 2021.

GRADUATION REQUIREMENTS AND PROCEDURES

Graduation Requirements and Procedures

The Instructor Training Program (ITP) graduation commencement will be held on Thursday, August 18, 2022, at the Eastern Michigan University Convocation Center. In order to ensure a successful process, please review the following requirements and procedures.

1. Upon registration for ITP, fill out the graduation questionnaire indicating the anticipated graduation certificate (ITP, coordinator, and/or associate degree). This process alerts the registrar of your intent to graduate.
2. You will receive a confirmation email regarding your eligibility to graduate within 72 hours. If you do not receive that confirmation email, please contact Agatha Wolyn, Cathy Merkel, or Tyler Masengale at 410-269-2000 or email awolyn@uanet.org, cathym@uanet.org, or tmasegale@uanet.org.
3. All graduates must officially check-in on Saturday, August 13, in the lobby of the Morris J. Lawrence Building at Washtenaw Community College. Failure to check-in will impact your ability to graduate.
4. For any questions about ITP or coordinator certificate requirements, please see the graduation requirements on this page.
5. Any student who has questions about associate degree requirements should contact Kandi Jurek at Washtenaw Community College by calling 1-888-232-5476 or emailing kjurek@wccnet.edu.

200-Hour Instructor Certificate Program

To receive a certificate of completion, UA instructors must successfully complete a total of 200 course hours. This includes 100 hours of professional courses and 100 hours of elective courses. In addition, students must also complete six Reflective Teaching Assignments (RTAs) in order to earn a certificate as a *Certified Instructor of Journeyworkers and Apprentices in the Plumbing and Pipe Fitting Industry*.

Professional Courses

Courses in parentheses denote former course numbers that count toward the requirement.

1001 (101)	.....	Planning, Teaching, and Assessing Effective Lessons: Beginner
1002 (102)	.....	Planning, Teaching, and Assessing Effective Lessons: Intermediate
1003 (103)	.....	Planning, Teaching, and Assessing Effective Lessons: Advanced
1004 (104)	.....	Course Planning and Problem Solving and 20-hour elective
1010 (510)	.....	Public Speaking (It is recommended to take 1002 and 1010 in the second year)

Plus Five 20-Hour Applied and Technical Courses

Note: Students may not register for the next professional course unless all requirements for the previous professional course, including the RTAs, have been completed.

Coordinator courses do not count toward the Instructor Certificate Program.

120-Hour Coordinator Certificate Program

To receive a certificate of completion, attendees will need to complete a total of 120 hours of courses, including three required courses (60 hours) out of the six needed. The title *Certified Coordinator of Journeyworkers and Apprentices in the Plumbing and Pipe Fitting Industry* will be conferred upon those who satisfactorily complete the program.

Courses in parentheses denote former course numbers that count towards the requirement.

Three Required Courses

9001 (705 or 90)	.....	Apprenticeship Standard Guidelines
9002 (701, 707, or 91)	.....	Administration of a Jointly Managed Training Program
9003 (702 or 706)	.....	Understanding Legal Issues and Fiduciary Responsibilities

Plus Three Coordinator Electives

1010 (510)	Public Speaking
2100 (237)	Adapting Apprenticeship to the 21st Century Student
2101 (372)	Financial Literacy for Apprentices
2102 (374)	Expanding Your Range When Recruiting
2103	Utilizing ITF and UA Education and Training Department Resources to Expand your Recruitment Efforts
2008 (520)	Labor History and the UA Part One: 1800 to 1920
2009 (521)	Labor History and the UA Part Two: 1920 to Present
2010 (522)	Labor History I and II
2105	Addressing Diversity, Equity, and Inclusion in Apprenticeship
3006 (373)	Preparing for Digital Literacy
9000 (700)	Administration of a Training Program for New Training Coordinators
9004 (703)	Managing Financial Operations of a Training Program
9005 (704)	Enhancing Training Through the Use of UA Applications
9006 (710 or 97)	Addressing Barriers to Apprentice Success
9007 (711)	Veterans in Apprenticeship
9008 (712)	Using the Multi-Craft Core Curriculum (MC3)
9009	Internal and External Communication for Training Directors
9100 (708)	Apprenticeship Development Canadians
9101	Canadian Coordinator Program
9102	Canadian Welder Assessment Program
9103	Canadian Coordinators Union Training Innovation Program
9105	UA Canada Training Director/Coordinator Program
9106	UA Canada and CWBi Acorn Welding Program
9010	Apprentice Selection Procedures - Interview Selection Process

Note: Not all courses listed above are available at the 2022 Instructor Training Program.

THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) is a federal law designed to protect the privacy of education records.

The act grants students the right to:

- Inspect and review their education records
- Request a correction to those education records
- Control the disclosure of certain aspects of their education records
- File a complaint with the U.S. Department of Education

FERPA Waivers for UA Students

Every student who takes classes offered by the International Training Fund (ITF) should fill out a FERPA waiver which can be found by contacting the registrar. The FERPA waiver will grant the ITF the authority to share your transcript with your local JATC and another party of your designation. All first-time attendees to the ITP must sign a FERPA waiver and return it to the registrar via email or deliver a hard copy to ML 123 during the ITP event.

Transcripts are no longer available online. In compliance with FERPA, all requests for a transcript must be made to the registrar's office by contacting Cathy Merkel at cathym@uanet.org.

UA University at Washtenaw Community College

Washtenaw Community College (WCC) educational partnership with the UA provides members with certificate and associate degree opportunities. As a benefit of the United Association/Washtenaw Community College partnership, UA instructors will receive college credit for their coursework completed at the Instructor Training Program. These credits can be used to earn an associate degree. Additional degree requirements can be completed through WCC's online courses or transferred in from other higher-learning institutions.

To earn an associate degree, instructors will need to complete the following:

- UA Apprenticeship since August 1, 2000 or the UA STAR® exam45 Credits
- UA Instructor Certification15 Credits
- General Education Requirements13-31 Credits

Washtenaw Community College's Online Courses

With more than 150 online courses, WCC offers you the general education courses that you need to finish your associate degree. Most courses are transferable to a four-year college or university.

Online education offers you the opportunity to study whenever it fits into your life—whether that's at 5 am before the kids wake up, on your lunch hour, or for a few hours at night. Online education allows you to fit education into your life instead of re-organizing your life around education.

Online learners do need to be independent, motivated, and self-starters. Online courses do have deadlines. You can access your classes and course information at any time, as long as you have a Windows PC or equivalent Mac computer with a high-speed Internet connection, such as a DSL or cable connection.

You must meet some requirements to take on-line classes. Why? Because we want you to succeed. We have found that students who don't meet the requirements frequently have trouble with online classes. Please complete WCC ROLL (Ready for Online Learning) course. This will help you answer questions about online learning and what it is all about, and more. ROLL focuses on: Academic and Life Skills, Commitment, Organization, Time Management, Stress Management, Technology Skills, WCC's Services, and so much more.

This ROLL course takes approximately 1-2 hours to finish and you must allow adequate time for videos and animation activities to play completely as you progress through the course. Jumping ahead and not allowing content to complete, may cause errors, forcing you to start over or not receive credit for modules completed.

Access ROLL by link: <https://www.wccnet.edu/learn/class-types/online/roll.php>

Contacts

Please contact Kandi Jurek at WCC Student Services with any questions.

Kandi Jurek, Manager UA Programs

Telephone: 1-888-232-5476

Email: kjurek@wccnet.edu

Website: www.wccnet.edu/uauniversity

COURSE LIST

NEW AND REVISED COURSES FOR 2022

Addressing Diversity, Equity, and Inclusion in Apprenticeship ...2105	
NAUSC AWP/WFP (Advanced Work Packaging/Work Face Planning).....	2118
Applied Water.....	2120
Introduction to Peer Support Skills and Mental Health Literacy	2171
Advanced RTS Training*.....	3034
Medical Gas Inspector*.....	4013
Methods in Teaching Fuel Gas Systems.....	4016
Viega Train the Trainer.....	4017
One Day Retro Fit.....	6035
Air and Water Systems Operation, Troubleshooting and Solutions.....	6036
Apprentice Selection Procedures - Interview Selection Process.....	9010

COORDINATOR, DIRECTOR, OR JOINT APPRENTICESHIP COMMITTEE MEMBER REQUIRED COURSES

Apprenticeship Standard Guidelines.....	9001
Administration of a Jointly Managed Training Program.....	9002
Understanding Legal Issues and Fiduciary Responsibilities.....	9003

COORDINATOR, DIRECTOR, OR JOINT APPRENTICESHIP COMMITTEE MEMBER ELECTIVE COURSES

Public Speaking.....	1010
Labor History and the UA Part One: 1800 to 1920.....	2008
Labor History and the UA Part Two: 1920 to Present.....	2009
Adapting Apprenticeship to the 21st Century Student.....	2100
Utilizing ITF and UA Education and Training Department Resources to Expand Your Recruitment Efforts.....	2103
Addressing Diversity, Equity, and Inclusion in Apprenticeship.....	2105
Introduction to Peer Support Skills and Mental Health Literacy	2171
Preparing for Digital Literacy.....	3006
Managing Financial Operations of a Training Program.....	9004
Addressing Barriers to Apprentice Success.....	9006
Veterans in Apprenticeship.....	9007
Internal and External Communication for Training Directors.....	9009
Apprentice Selection Procedures - Interview Selection Process.....	9010
UA Canada Training Director/Coordinator Program.....	9105

REQUIRED PROFESSIONAL COURSES

Planning, Teaching, and Assessing Effective Lessons: Beginner....	1001
Planning, Teaching, and Assessing Effective Lessons: Intermediate*.....	1002
Planning, Teaching, and Assessing Effective Lessons: Advanced*.....	1003
Course Planning and Problem Solving*.....	1004
Public Speaking.....	1010

PROFESSIONAL CONTINUING EDUCATION COURSE

Reviewing the Essential Aspects of Effective Teaching and Learning*.....	1006
--	------

APPLIED AND TECHNICAL COURSES

Methods in Teaching Pipe Trades Applied Mathematics.....	2001
Methods in Teaching Drawing Interpretation and Plan Reading....	2004
Basic Electricity.....	2006

Adult Basic Life Support/ First Aid.....	2007
Labor History and the UA Part One: 1800 to 1920.....	2008
Labor History and the UA Part Two: 1920 to Present.....	2009
Operation of the UA Trailers.....	2011
UA/MCAA Foreman Certification.....	2012
Principles of Project Management.....	2015
Introduction to Service Management.....	2016
Estimating for Mechanical Projects.....	2017
Advanced Plan Reading.....	2095
Adapting Apprenticeship to the 21st Century Student.....	2100
Financial Literacy for Apprentices.....	2101
Utilizing ITF and UA Education and Training Department Resources to Expand Your Recruitment Efforts.....	2103
Addressing Diversity, Equity, and Inclusion in Apprenticeship.....	2105
NAUSC AWP/WFP (Advanced Work Packaging/Work Face Planning).....	2118
Applied Water.....	2120
OSHA 510 OSHA Standards for the Construction Industry.....	2150
OSHA 500 Trainer Course for the Construction Industry*.....	2151
OSHA 502 Update for Construction Industry Outreach Trainers*.....	2152
Safe Bolting Principles and Practices.....	2154
Infection Control Risk Assessment (ICRA) Practitioner.....	2157
Trenching and Excavation – Competent Person Trainer.....	2159
Safe Pressure Testing Operations for Piping Systems.....	2160
NFPA® 70E® Electrical Safety Train-the-Trainer Course.....	2163
Opioids in the Workplace: Prevention and Response.....	2170
Introduction to Peer Support Skills and Mental Health Literacy	2171
Computer Fundamentals for Pipe Trades Instruction.....	3000
Introduction to Teaching Online Using Blackboard™ LMS.....	3001
Preparing for Digital Literacy.....	3006
Utilizing UA Technologies in the Classroom.....	3007
Intermediate Computer Skills for the Trade Teacher.....	3008
Autodesk® Revit® MEP.....	3025
Advanced Autodesk® Revit® MEP.....	3026
Robotic Total Station Layout – Topcon - Sokkia.....	3031
Robotic Total Station Layout – Leica.....	3032
Robotic Total Station Layout – Trimble®.....	3033
Advanced RTS Training*.....	3034
Utilizing Jobsite Technology.....	3050
Mobile Technology for the Construction Industry.....	3055
Understanding the BIM/VDC Workflow in Today's Construction Industry.....	3100
DfMA and Modular Construction.....	3110
Methods in Teaching Water Supply Systems.....	4001
Methods in Teaching Drainage Systems.....	4002
Methods in Teaching Plumbing Fixtures.....	4003
Plumbing Code Application.....	4004
Copper Piping Systems, Advanced Installations, Specialized Design, and Safe Operation.....	4005
Methods in Teaching Backflow Prevention Certification*.....	4006
Backflow Repair and Maintenance*.....	4007
Surveys and Inspections for Cross-Connection Control.....	4008
Methods in Teaching Plumbing Service, Maintenance, and Repair.....	4009
Methods in Teaching Plumbing Service and Customer Service	4010
Medical Gas Instructor*.....	4011
Medical Gas Refresher.....	4012
Medical Gas Inspector*.....	4013

Methods in Teaching Fuel Gas Systems	4016	Administration of an Authorized UA Weld Test Facility	8000
Viega Train the Trainer.....	4017	Arc Welding Practical Fundamentals and Theory	8002
Water Quality Plumbing	4050	Applied Metallurgy	8003
Valve Repair Instructor*	5006	Piping Codes for Industrial Work	8004
Advanced Valve Repair Instructor*.....	5007	Innovative Welding Techniques*	8006
Industrial Rigging Technologies	5009	Orbital Tube Welding	8007
Industrial Rigging Certification for Instructors*.....	5011	Methods in Teaching Shielded Metal Arc Welding (SMAW)*	8012
UA Crane Signal Person Certification for Instructors	5012	Methods in Teaching Gas Metal Arc Welding (GMAW)*	8013
Advanced Tube Bending	5015	Methods in Teaching Advanced Gas Tungsten Arc Welding (GTAW)*	8014
Pipefitting Layout.....	5019	ASME Section IX Welding Code	8015
Instrumentation Level II Administrator and Implementing a Process Controls Instrument Technician Program*	5021	Quality Control Management.....	8040
Implementing a Gas Distribution Pipeline Training Program.....	5025		
Teaching HVACR Service Apprenticeship Curriculum	6000		
HVACR Basic Electricity	6001		
Commercial Refrigeration and Supermarket Applications.....	6002		
Teaching Hydronic Heating and Cooling Systems	6006		
Methods in Teaching Start, Test, and Balance	6009		
Variable Refrigerant Flow (VRF) – The CITY MULTI Service Course (Mitsubishi).....	6012		
Introduction to Oil-Less/Magnetic Bearing Centrifugal Compressors	6015		
Variable Frequency Drive (VFD) Fundamentals and Commissioning	6016		
Pump Service and Maintenance	6017		
HVACR Flow Measurements and Concepts	6028		
One Day Retro Fit.....	6035		
Air and Water Systems Operation, Troubleshooting and Solutions	6036		
Safe Handling of Mildly Flammable Refrigerants.....	6059		
Troubleshooting Residential HVACR Systems	6061		
Commercial and Residential Boiler Service	6063		
Data Harvesting	6066		
Water Quality Mechanical	6080		
Steam Systems.....	6081		
Fire Protection Technology/Technical Class for Sprinkler Fitters	7000		
Viking Foam Systems	7002		
Revit® for Fire Protection I*	7025		
Revit® for Fire Protection II*	7026		
Viking Fire Protection Valves	7033		
Fire Pump Inspection and Testing.....	7041		
Fire Pump Maintenance and Repair	7042		
Inspection, Testing, and Maintenance (ITM) of Fire Protection Systems/ASSE 15000.....	7050		
Water Quality Fire Protection.....	7051		
Understanding Fire Alarm Panels and Initiating Devices on Fire Protection Systems	7060		
Developing Tests for Fire Protection Codes and Standards	7071		

(*) Prerequisite

2105 Addressing Diversity, Equity, and Inclusion in Apprenticeship

Students must bring a laptop.

This course will instruct training coordinators, and other UA members in leadership positions, on how to establish a professional and inclusive environment at our training centers. This course will provide uniform guidance to ensure that training centers consistently encourage and maintain positive and inclusive learning environments. This course will focus on equity, equal opportunity, protected classes, anti-harassment, discrimination, diversity and inclusion, and how to prevent all forms of discrimination in our training centers. In this highly interactive and engaging course, practical examples with group exercises in ethical decision making will be presented and modeled.

2118 NAUSC AWP/WFP (Advanced Work Packaging/Work Face Planning)

Students must bring a laptop.

This program is designed to provide the instructors with the knowledge and skills required to deliver consistent training for all NAUSC AWP/WFP Courses and to emphasize the UA Standard for Excellence and the AWP/WFP trained members' critical role in its success. This learning path will provide the WFP Trainer-the-Trainer candidate with a comprehensive understanding of applying and teaching Advanced Work Packaging and Workface Planning. Upon successful completion, the students will be certified as WFP Trainers, to effectively support the UA in creating an AWP/WFP enabled workforce.

2120 Applied Water

Students must bring a laptop.

Water is delivered by applied systems to provide hydration, comfort, and safety. Service technicians in every UA craft build, fill, test, commission, and assess

water distributed thru potable, hydronic, and fire protection systems. This applied water program will cover scientific methods used to analyze the characteristics of water, evaluate sources of contamination, design water delivery and basic control measures. Topics covered also include practical hands on application and documentation of water characteristics, including how to discuss findings using proper nomenclature with water purveyors, customers, test labs and other vendors including water treatment providers. Incident response techniques will also be offered.

2171 Introduction to Peer Support Skills and Mental Health Literacy

Students must bring a laptop.

People who have lived through depression, addiction, and suicidal despair often express that connection with peers is incredibly influential in not only bringing them back from the brink, but also in giving them hope and reasons for living. Their compassion, ability to listen, and skills in bridging others to resources saves lives. Peer Support programs provide natural assistance for workplace mental health. This course is designed to enhance trainers in mental health literacy and peer support expertise with an emphasis on knowledge, skills, and confidence. In this course students will develop an understanding of the value, fundamentals, and practices of peer support skills. By the end of this course students will be able to demonstrate a basic knowledge of mental health literacy, find shared meaningful experiences with peers, express empathy through reflections, and demonstrate active listening skills. Students will also be able to assist in connecting people who are struggling to specialty professional services such as crisis counseling and addiction recovery services.

3034 Advanced RTS Training

Prerequisite: 3033 Robotic Total Station Layout – Trimble®

Students must bring a laptop.

This course is designed to prepare the individual for certification in Trimble RTS layout. 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.

4013 Medical Gas Inspector

Prerequisite(s): 2 years of experience in the installation of Medical Gas and Vacuum systems; Current ASSE 6010 Medical Gas Installers certification; Current ASSE 6050 Medical Gas Instructor certification

Students must bring a laptop.

In this course, students will receive the required training hours to be prepared to take the NITC ASSE 6020 Medical Gas Inspector certification exam. Topics include, NFPA 2021 codes and ASSE Series 6000 standards 2018 edition 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. Participants will take the NITC ASSE 6020 certification exam at the end of the course.

4016 Methods in Teaching Fuel Gas Systems

Students must bring a laptop.

This class is designed to teach students the correct and safe methods and techniques to install natural gas piping systems for residential and commercial installations. Class topics of interest and discussion will include sizing, piping methods and assembly, material, code, safety, and testing. Hands on demonstrations in class will aid students to become familiar with some of the tools and material needed to assemble the material in a safe and proper fashion. Piping systems will be discussed in the following categories: Service Lines, Buried Customer Service Lines, and Inside Service. The only requirement needed for this class is a basic knowledge of plumbing fitting vocabulary in order to understand drawing and pictures.

4017 Viega Train the Trainer

Students must bring a laptop.

This course will cover Viega press connection systems being utilized in today's plumbing, mechanical, HVAC, and industrial installations. Included will be Copper Tube Size (CTS) metallic press systems for liquid and gas, Iron Pipe Size (IPS) metallic press systems for liquid and gas, and PEX (cross-linked polyethylene) press and crimp systems for plumbing and mechanical applications. The subject matter will cover technical aspects, typical applications, installation best-practices, tooling, and pressure testing of these systems. Also covered will be approvals, codes, and standards governing these systems. The course will also contrast press technology to traditional methods of pipe joining.

6035 One Day Retro Fit

Students must bring a laptop.

This course will focus on the procedures for one day replacement of split system and packaged equipment replacement. Lessons based on best practices in equipment placement, onsite duct modifications, reconnection of gas and electric, use of sheet metal tools, sheet metal identification, common problems, and consideration with these types of replacements. Class to include hands on tool usage, field fabricated duct transitions with basic sheet metal tools, RTU replacement with prefabricated roof curb adapter, start up and testing procedures.

6036 Air and Water Systems Operation, Troubleshooting and Solutions

Students must bring a laptop.

The class will focus on the elements of design, control, and common problems of larger distributed air and water systems. We will examine newer variable air and water flow systems and include a review of older, tried, and true designs as well. Integration of new and legacy systems, control schemes, addressing inefficiencies and lack of performance and will be explored. Student instructors will study analysis techniques of the refrigerant cycle and heat transfer, variable and part load analysis of fans and pumps as well as system response to adjustments. Enhanced electrical measurement techniques will be covered, with a view to enhanced understanding of power and power factor, especially at part load operation. Optimizing systems for part-load operation, rightsizing and staging strategies will also be discussed. Several real-world systems will be analyzed in the class as examples and solutions devised.

9010 Apprentice Selection Procedures - Interview Selection Process

Students must bring a laptop.

The UA Education and Training Department has worked with local unions across the country to revise and update a structured interview used to select candidates for apprenticeship programs as well as training for interviewers on how to effectively conduct the interview. This workshop provides an overview of the new interview; training on how to conduct interviews that are efficient, fair, and accurate while providing a positive experience for apprenticeship candidates; how to avoid legal challenges in the interview process; and training on how to deliver the training to others. Participants will get the chance to experience the interviewing process while also learning how to deliver the training for others.

1001 Planning, Teaching, and Assessing Effective Lessons: Beginner

Students must bring a laptop.

Upon registration into Course 1001, students must successfully complete a short pre-course assessment on Blackboard™ LMS about basic computer knowledge and navigation. The assessment is designed to ensure students have the abilities for succeeding in all of their professional development courses. If students are unable to complete the assessment's requirements, they may choose to improve their abilities by working on further learning modules within the same Blackboard™ LMS site.

This course teaches how to structure classroom lessons to support adult learning. An understanding of how adults learn, how to work with different adult learning styles, and how to create a class climate that promotes learning is developed. The basics of planning and assessing lessons, creating lesson plans, and informal assessments for use in teaching are stressed. Bring the textbooks, lesson plans, quizzes, and tests for a course that will be taught at the local. If an instructor does not have a specific teaching assignment, work with the local union training coordinator to select a course that will be taught in the future and bring those materials.

Reflective Teaching Assignments (RTAs)

Upon returning to the local union training center, the instructor will complete a series of reflective teaching assignments (RTAs). In these assignments, the instructor will reflect on the use of the planning, teaching, and assessment skills from Course 1001. These are required assignments and must be submitted to the online portfolio.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	TI 112	Said-Wright, B./Walter, D.
2	1:00 pm - 5:05 pm	TI 112	Said-Wright, B.
3	8:00 am - 12:05 pm	TI 131	Peet, J.
4	1:00 pm - 5:05 pm	TI 131	Peet, J.
5	8:00 am - 12:05 pm	TI 114	Collins, J.
6	1:00 pm - 5:05 pm	TI 114	Collins, J.
7	8:00 am - 12:05 pm	BE 180	Johnson, C.
8	1:00 pm - 5:05 pm	BE 180	Johnson, C.
9	8:00 am - 12:05 pm	BE 250	Pickell, R.
10	1:00 pm - 5:05 pm	BE 250	Pickell, R.
11	8:00 am - 12:05 pm	TI 129	Coleman, L.
12	1:00 pm - 5:05 pm	TI 129	Coleman, L.
13	8:00 am - 12:05 pm	TI 247	Houghton, G.
14	1:00 pm - 5:05 pm	TI 247	Houghton, G.
15	8:00 am - 12:05 pm	BE 260	Greathead, M.
16	1:00 pm - 5:05 pm	BE 260	Greathead, M.

1002 Planning, Teaching, and Assessing Effective Lessons: Intermediate

Prerequisite: 1001 Planning, Teaching, and Assessing Effective Lessons: Beginner

Students must bring a laptop.

This course builds upon 1001 and the practices which were used for teaching at the local union. Instructors will expand their skills of planning lessons by focusing on writing clear objectives. Topics such as how to present material interactively using visual supports like charts and presentations, organizing group work, and effectively run group discussions are featured. Assessment will also be discussed. Instructors will learn to utilize review sheets as a form of assessment. To prepare for Course 1002, bring the RTAs that were completed following Course 1001. Students should also bring course materials for a course that they expect to teach following Course 1002.

Reflective Teaching Assignments (RTAs)

As with Course 1001, upon returning to the local union training center, the instructor will complete the planning, teaching, and assessment skills from Course 1002 by teaching two classes and writing a short assessment, noting changes. These are required assignments and must be submitted to the online portfolio.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	BE 172	Sparklin, C.
2	1:00 pm - 5:05 pm	BE 172	Sparklin, C.
3	8:00 am - 12:05 pm	BE 160	Gribble, J.
4	1:00 pm - 5:05 pm	BE 160	Gribble, J.
5	8:00 am - 12:05 pm	BE 158	Phelps, N.
6	1:00 pm - 5:05 pm	BE 158	Phelps, N.
7	8:00 am - 12:05 pm	BE 171	Henige, S.
8	1:00 pm - 5:05 pm	BE 171	Henige, S.
9	8:00 am - 12:05 pm	BE 174	Roelof, A.
10	1:00 pm - 5:05 pm	BE 174	Roelof, A.
11	8:00 am - 12:05 pm	BE 150	Shaper, S.
12	1:00 pm - 5:05 pm	BE 150	Shaper, S.

1003 Planning, Teaching, and Assessing Effective Lessons: Advanced

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

Students must bring a laptop.

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

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.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 316	Cundiff, K.
2	1:00 pm - 5:05 pm	GM 316	Cundiff, K.
3	8:00 am - 12:05 pm	GM 315	Klapper, J.
4	1:00 pm - 5:05 pm	GM 315	Klapper, J.
5	8:00 am - 12:05 pm	GM 317	Klapper, J.
6	1:00 pm - 5:05 pm	GM 317	Klapper, J.
7	8:00 am - 12:05 pm	GM 327	Gore, M.
8	1:00 pm - 5:05 pm	GM 327	Gore, M.
9	8:00 am - 12:05 pm	GM 323	Cullin, N.
10	1:00 pm - 5:05 pm	GM 323	Cullin, N.

1004 Course Planning and Problem Solving

Prerequisite: 1003 Planning, Teaching, and Assessing Effective Lessons: Advanced

Students must bring a laptop.

Students must bring course materials to create or redesign a course.

In this course, focus is shifted from teaching individual classes to designing a whole course, starting with writing goals and then moving to effective sequencing of course materials. The design of an overall assessment plan for a course will be emphasized, including how to evaluate projects and other forms of assessment for evidence of learning. Bring course materials (syllabus, textbook, lesson plans, quizzes, exams) for a course that needs to be revised. If the local wants to develop a new course, bring materials needed to form the basis for the course. These materials are essential to the classwork in Course 1004. There are no RTAs following Course 1004.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 326	Douglass, C.
2	1:00 pm - 5:05 pm	LA 326	Douglass, C.
3	8:00 am - 12:05 pm	LA 331	Littlefield, C.
4	1:00 pm - 5:05 pm	LA 331	Littlefield, C.
5	8:00 am - 12:05 pm	LA 333	TBD
6	1:00 pm - 5:05 pm	LA 333	TBD
7	8:00 am - 12:05 pm	LA 321	TBD
8	1:00 pm - 5:05 pm	LA 321	TBD

1006 Reviewing the Essential Aspects of Effective Teaching and Learning

Prerequisite: 1004 Course Planning and Problem Solving

Students must bring a laptop.

This course is designed for UA instructors who have been through the Course 1001 through 1004 curriculum. This course will serve as an opportunity to refresh the skills they learned and add new ideas to their tool kit to increase engagement and learning in their classrooms. Students will investigate and incorporate new technology tools in the classroom to include (but not be limited to) Blackboard™ LMS, flipping a classroom, screen capture, embedded videos, GoTo Meeting, and (OLR) Online Instructor Resource Library.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	BE 182	Fray, S.
2	1:00 pm - 5:05 pm	BE 182	Fray, S.

1010 Public Speaking

Students must bring a laptop.

This course is designed to help UA instructors acquire essential speaking and listening skills for the classroom. Class exercises will focus on the delivery of lecture material and conducting demonstrations. Instructors will polish organizational and delivery skills, as well as gain a heightened awareness of the relationship between a speaker and an audience. UA students are encouraged to bring materials from classes they are currently teaching as resources for class exercises. Blackboard™ LMS will be used for this course.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 218	Fournier, A.
2	1:00 pm - 5:05 pm	LA 218	Fournier, A.
3	8:00 am - 12:05 pm	LA 124	Brooks, M.
4	1:00 pm - 5:05 pm	LA 124	Brooks, M.
5	8:00 am - 12:05 pm	TI 116	Shaper, K.
6	1:00 pm - 5:05 pm	TI 116	Shaper, K.
7	8:00 am - 12:05 pm	TI 118	Johnson, A.
8	1:00 pm - 5:05 pm	TI 118	Johnson, A.

2001 Methods in Teaching Pipe Trades Applied Mathematics

Students must bring a laptop.

This course is designed to prepare the student for teaching pipe trades mathematics to apprentices and journeymen. It will help students learn how to teach pipe trades math and also will serve as a refresher course on subjects such as off-sets, metric systems, and calculators. Class time will consist of daily lectures and discussions on topics such as teaching styles, testing and exams, and applying mathematics to the pipefitting industry. The student also will be introduced to the math curriculum on Blackboard™ LMS.

Required textbooks or resource materials: *Related Mathematics (R/02); Piping Handbook and Offset Formulas*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	BE 240	Fouts, A./Kronberg, P.
2	1:00 pm - 5:05 pm	BE 240	Fouts, A./Kronberg, P.

2004 Methods in Teaching Drawing Interpretation and Plan Reading

Students must bring a laptop.

In this course, students will develop and enhance their teaching skills in drawing interpretation. The course's main focus will be on understanding the basics of plan and elevation drawings, as well as developing grading criteria and exceeding time length for each assignment. Students will explore the UA's Interactive Curriculum App as it is designed to take pages of the textbooks and overlay Augmented Reality (AR) above a live view world utilizing the camera on your phone or tablet.

Required textbooks or resource materials: *Drawing Interpretation and Plan Reading (R/00); CADLearning®*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 225	Butler, D.
2	1:00 pm - 5:05 pm	LA 225	Butler, D.

2006 Basic Electricity

Students must bring a laptop.

This course will cover and present best teaching methods for safely using and working with electricity on the jobsite. Electrical theory will be covered to promote understanding of voltage, amperage, and resistance, with specific emphasis on the safe use of power tools on the job. Ground fault circuits (GFCI), circuit breakers, fuses, and circuit capacities will be discussed, along with the proper use of electrical multi-meters for basic electrical readings. The curriculum will be offered through pre-

sentations, hands-on, and supplemental learning software. The UA instructor will also be introduced to the UA software developed for use on Blackboard™ LMS. The UA instructor will learn how to customize UA Circuit Builder software for enhancing the learning experience at their local training centers. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Basic Electricity (R/15)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	TI 145	Fala, A.

2007 Adult Basic Life Support/ First Aid

Students must bring a laptop.

This course will train and/or certify the UA instructor in conducting adult basic life support. This includes cardiopulmonary resuscitation; automated external defibrillation and related subjects, such as initial care for angina, stroke, and foreign body airway obstruction. The basic first aid portion includes procedures for emergency movement of the injured; wounds/bleeding; traumatic shock; fractures; burns with special emphasis on accidental electrical contact; eye injuries; allergic reactions; seizures; drug overdoses; temperature-related problems; and many other job-related emergencies. Upon successful completion of this course, the UA instructor will be able to teach and certify other UA members in this course. This program has been officially accepted by the U.S. Department of Labor - Occupational Health and Safety Administration (OSHA), as well as other federal and state agencies.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 332	Coyne, C.
2	1:00 pm - 5:05 pm	GM 332	Coyne, C.

2008 Labor History and the UA Part One: 1800 to 1920

Students must bring a laptop.

Labor History and the UA covers the development of the trade union movement in North America from 1800 to 1920. The class covers this turbulent time in the early decades of organized labor, the obstacles and challenges that had to be overcome, and the leaders who helped shape the movement during its first century.

Required textbooks or resource materials: *The Rise of the United Association (Segal); Labor in America, 9th Edition (Dubofsky/McCartin)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 241	Lyle, R.

2009 Labor History and the UA Part Two: 1920 to Present

Students must bring a laptop.

This course explores the history of work, technology, trade unions, government policy related to business and labor, and globalization from the 1930s to the present. The Great Depression created the conditions for an unprecedented social, economic, and political crisis in North America. The changes brought forth by the business depression included the emergence of more fully modern societies in the United States and Canada and a much larger and diverse organized labor movement presence in both nations. As the trade union movement reached its apex of power and influence in the decades following the Second World War, so too did it sow the seeds that would lead to setbacks and challenges in more recent times. As it has done throughout its history, the United Association met these challenges through innovative approaches to new technology, training, and organization.

Required textbooks or resource materials: *The United Association 1924-1989 (Griffith)*; *Labor in America, 9th Edition (Dubofsky/McCartin)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	1:00 pm - 5:05 pm	LA 241	Lyle, R.

2011 Operation of the UA Trailers

Students must bring a laptop.

Students participating in this course will learn how to present classes utilizing the equipment and trainers contained within the UA training trailers as they apply to the mechanical and plumbing systems installed and serviced by UA members. Participants will learn the best practices for teaching with the training trailers. Trailer and equipment safety, proper trailer setup and repacking, and operation of the onboard generator, audio video systems, fuel, electrical, and water hookup will be covered. The training trailers used in this course are the plumbing service, welding, sustainable technologies trades training, and service tech mobile lab. Event scheduling and transportation policies will be covered. This course is held outdoors. Students should bring sunglasses and rain gear. **Personal protective equipment is required. Please refer to the safety requirements.**

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	GL 102	Gale, R./Korn, G.

2012 UA/MCAA Foreman Certification

Students must bring a laptop.

This course enables students to implement the UA Foreman Certification Program at their home local. It covers topics critical to the workplace and jobsite supervision, including leadership, relationships, documentation, planning and scheduling the work, safety, coordinating subcontractors and suppliers, and measuring and managing productivity. Understanding the Full Cost of an Hour of Labor and the Standard for Excellence will be discussed.

Required textbooks or resource materials: *UA Foreman Training Manual (U/22)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 5:05 pm	GM 314	Kimbro, T./Hubler, C.

2015 Principles of Project Management

Students must bring a laptop.

This course delivers basic knowledge of the life cycle of a construction project, encompassing project manager responsibilities. The curriculum covers each of the steps in managing a project, from award to warranty. Administrative processes and responsibilities are explained and discussed using a sample project and a flow chart. Handouts, examples of forms, and checklists are provided as resources.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 131	Crosby, K.
2	1:00 pm - 5:05 pm	LA 131	Crosby, K.

2016 Introduction to Service Management

Students must bring a laptop.

Learn the skills needed to successfully transition from being a service tech to a key position in an HVACR or plumbing service company. The focus will be on the interpersonal skills and active responsibilities required to be successful. This class will be interactive and is modeled after real-world challenges that occur in a service company. The instructor will utilize lecture, small group assignments, interactive demonstrations, and review and discussion of best practices in the HVACR and plumbing service industry.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 254	Woodall, A.

2017 Estimating for Mechanical Projects

Students must bring a laptop.

Participants will learn the procedures and practices needed to estimate mechanical projects and changed conditions. The curriculum covers each step estimators take in preparing an estimate for a proposal. Handouts include practical checklists and forms covering basic material and labor, as well as many other associated costs. Various types of cost estimates, bid day protocols, and end-game economics will be investigated. The course concludes with a sealed bid submission for a mechanical project prepared by the attendees that demonstrates all aspects of mechanical estimating.

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	LA 254	Woodall, A./Vasilenko, A.

open-discussion roundtable format. Many locals are facing challenges with students who view work ethic, attitude, appearance, punctuality, attendance, finance, communication, cell phones, texting, and technology differently than previous generations. Presenters from the training industry will discuss common problems faced and solutions to better communicate with and retain students from Gen Y (born 1981-1996) and Gen Z (born 1997-2012). Students should plan to share their thoughts and ideas with the group.

Required textbooks or resource materials: *Not Everyone Gets a Trophy: How to Manage Millennials (Tulgan); Zconomy: How Gen Z Will Change the Future of Business – and What to Do About It (Dorsey & Villa)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 232	Fortini, D./Bonato, J.
2	1:00 pm - 5:05 pm	LA 232	Fortini, D./Bonato, J.

2095 Advanced Plan Reading

Students must bring a laptop.

This course focuses on the process of interpreting, analyzing, and implementing troubleshooting skills to navigate construction documentation to plan, quantify, layout, and coordinate piping systems. Lessons are based on materials from the new Advanced Plan Reading textbook and 3D model which is a digital replica of the Great Lakes Training Center to include; Full set of construction drawings, specification book, equipment submittals, 3D Design Models, and Point Cloud. Topics include: interpreting drawings, including architectural, mechanical, and structural; reviewing submittal data, job spec, and identifying common problems with drawings used in lessons to develop quizzes/assignments. The class will also focus on utilizing the latest technologies with a special emphasis on teaching proper drawing techniques using both tradition and applying techniques using new digital tools to apprentices and journey workers.

Required textbooks or resource materials: *Advanced Plan Reading and Related Drawing; CADLearning®*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 110	Sherr, R./Warner, R.
2	1:00 pm - 5:05 pm	LA 110	Sherr, R./Warner, R.

2101 Financial Literacy for Apprentices

Students must bring a laptop.

Over the past few years, training directors and coordinators running apprenticeship programs have experienced a different set of challenges regarding apprentices entering the program. Given the nature of the trade, which can be feast or famine, it is important to ask, Does our program equip our apprentices with the skills to manage their finances when they could be faced with short or long periods of unemployment? To combat this, many apprenticeship programs have included instruction on life skills, including financial literacy. In this course, examples of financial resources available for use in teaching financial literacy will be presented and discussed. Individuals interested in instituting a financial literacy training program in their apprenticeship training programs are encouraged to attend. This course will consist of a combination of lecture and discussion and will include instruction on a new online simulation training program.

Required textbooks or resource materials: *Million Dollar Blue Collar (Breslin)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 334	Harle, G.
2	1:00 pm - 5:05 pm	GM 334	Harle, G.

2100 Adapting Apprenticeship to the 21st Century Student

Students must bring a laptop.

The generational differences experienced by coordinators, instructors, and apprentices in local training centers today will be explored in this course. Participants will share in an

2103 Utilizing ITF and UA Education and Training Department Resources to Expand Your Recruitment Efforts

Students must bring a laptop.

Explore recruitment tools and marketing opportunities available on the internet. Participants will create and order printed brochures, push cards, and videos explaining the benefits of apprenticeship. Learn about Google, Facebook, and other online tools to make your recruitment goals a reality. Discuss the pros and cons of social media and learn how to navigate these forums. This course is held in the computer lab using the internet to identify websites and resources available to attract the next generation of apprentices. Students must acquire a Gmail address prior to the start of class.

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	GM 309	Cannon, D.

2105 Addressing Diversity, Equity, and Inclusion in Apprenticeship

Students must bring a laptop.

This course will instruct training coordinators, and other UA members in leadership positions, on how to establish a professional and inclusive environment at our training centers. This course will provide uniform guidance to ensure that training centers consistently encourage and maintain positive and inclusive learning environments. This course will focus on equity, equal opportunity, protected classes, anti-harassment, discrimination, diversity and inclusion, and how to prevent all forms of discrimination in our training centers. In this highly interactive and engaging course, practical examples with group exercises in ethical decision making will be presented and modeled.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 325	Moss, P.
2	1:00 pm - 5:05 pm	GM 325	Moss, P.

2118 NAUSC AWP/WFP (Advanced Work Packaging/Work Face Planning)

Students must bring a laptop.

This program is designed to provide the instructors with the knowledge and skills required to deliver consistent training for all NAUSC AWP/WFP Courses and to emphasize the UA Standard for Excellence and the AWP/WFP trained members' critical role in its success. This learning path will provide the WFP Trainer-the-Trainer candidate with a comprehensive under-

standing of applying and teaching Advanced Work Packaging and Workface Planning. Upon successful completion, the students will be certified as WFP Trainers, to effectively support the UA in creating an AWP/WFP enabled workforce.

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	BE 270	Mikaelsson, R./ España, F.

2120 Applied Water

Students must bring a laptop.

Water is delivered by applied systems to provide hydration, comfort, and safety. Service technicians in every UA craft build, fill, test, commission, and assess water distributed thru potable, hydronic, and fire protection systems. This applied water program will cover scientific methods used to analyze the characteristics of water, evaluate sources of contamination, design water delivery and basic control measures. Topics covered also include practical hands on application and documentation of water characteristics, including how to discuss findings using proper nomenclature with water purveyors, customers, test labs and other vendors including water treatment providers. Incident response techniques will also be offered.

Required textbooks or resource materials: *Introduction to Contaminants and Treatment, Trainer's Guide*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 127	Andersen, B.
2	1:00 pm - 5:05 pm	LA 127	Andersen, B.

2150 OSHA 510 OSHA Standards for the Construction Industry

Students must bring a laptop.

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.

Required textbooks or resource materials: *OSHA 510 Binder (CPWR), CFR 1926*

Sec	Time	Location	Instructor
1	8:00 am - 5:05 pm	LA 243	Young, J./Carrigan, T.

2151 OSHA 500 Trainer Course for the Construction Industry

Prerequisite: 2150 OSHA 510 OSHA Standards for the Construction Industry; 5 years of safety related work history

Students must bring a laptop.

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 500 Binder (CPWR), CFR 1926*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 5:05 pm	LA 211	Marable, W./Baptista, M.

2152 OSHA 502 Update for Construction Industry Outreach Trainers

Prerequisite: 2151 OSHA 500 Trainer Course for the Construction Industry

Students must bring a laptop

Please reference the OSHA Trainer Re-authorization 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 (CPWR), CFP 1926*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 5:05 pm	LA 323	Walker, W./Reece, T.

2154 Safe Bolting Principles and Practices

Students must bring a laptop.

Participants in this course will be provided with the knowledge and skills to safely and properly assemble bolted flange joints. The attendee will learn how to inspect, assemble, and tighten bolted joint connections using industry-required controlled bolting procedures, including pressure boundary flanged joint assembly practices, terminology, tooling, and related technical areas, including safety. Additionally, participants will become proficient in power torqueing and tensioning. Course participants will receive an OSHA 7110 certificate, which allows them to conduct bolted joint training at the local level. When this training is offered at the local training center, participating UA members will receive a UA/CPWR/HYTORC completion card.

Personal protective equipment is required. Please refer to the safety requirements.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 218	Ramos, L./Stout, P.
2	1:00 pm - 5:05 pm	LA 218	Ramos, L./Stout, P.

2157 Infection Control Risk Assessment (ICRA) Practitioner

Students must bring a laptop.

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.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 352	Molnar, D./Ballay, G./Hamilton, S.
2	1:00 pm - 5:05 pm	LA 352	Molnar, D./Ballay, G./Hamilton, S.

2159 Trenching and Excavation – Competent Person Trainer

Students must bring a laptop.

This course examines OSHA's trenching standards and industry safe practices for working in trenches and excavations. Newly developed technologies such as interactive e-Learning modules, jobsite mobile apps, the complete trainer guide, and 2D and 3D VR simulations will be utilized. The course involves theory, hands-on, and interactive learning opportunities. At the end of the course, participants will be able to deliver competent person level and basic level trenching training at their JATC.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 340	Berger, J./Raposa, M.
2	1:00 pm - 5:05 pm	LA 340	Berger, J./Raposa, M.

2160 Safe Pressure Testing Operations for Piping Systems

Students must bring a laptop.

This course provides information on different methods for conducting safe pressure testing operations, associated hazards, and necessary precautions. Safety will be the primary focus. Students will identify and demonstrate safe working practices required to successfully plan, perform, and document pressure tests on industrial, plumbing, and refrigeration piping systems. Pressure test demonstrations will use a combination of detailed images, videos, and interactive hands-on exercises. Course includes a guided tour of NSF International, and demonstration of pressure testing failures in a controlled environment. **Personal protective equipment is required. Please refer to the safety requirements.**

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	GM 313	Heiss, D./Westbrook, R.
2	1:00 pm - 5:05 pm	GM 313	Heiss, D./Westbrook, R.

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

Students must bring a laptop.

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 (2021 Edition)*; *NFPA® 70E® Electrical Safety Instructor Guide (NFPA)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	GM 207	Kjome, J./Neiderheiser, R.
2	1:00 pm - 5:05 pm	GM 207	Kjome, J./Neiderheiser, R.

2170 Opioids in the Workplace: Prevention and Response

Students must bring a laptop.

Opioids and substance use disorder is impacting the construction industry six times greater than other industries. This course is designed to prepare attendees to instruct and facilitate the National Institute of Environmental Health Sciences (NIEHS) Opioids and the Workplace: Prevention and Response training at the local level. Upon completion, participants will be able to discuss the scope and severity of the opioid crisis, summarize the relationship between workplace injuries and illnesses, working conditions, and opioid use disorder, identify risks of occupational exposure and potential steps for prevention and response, and identify, inspire, and motivate actions to prevent and respond to opioid use, misuse, and addiction. The course materials are designed to be presented as a stand-alone training or integrated into other training programs.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 159	Van Kirk, D./Coomey, S.
2	1:00 pm - 5:05 pm	LA 159	Van Kirk, D./Coomey, S.

2171 Introduction to Peer Support Skills and Mental Health Literacy

Students must bring a laptop.

People who have lived through depression, addiction, and suicidal despair often express that connection with peers is incredibly influential in not only bringing them back from the brink, but also in giving them hope and reasons for living. Their compassion, ability to listen, and skills in bridging others to resources saves lives. Peer Support programs provide natural assistance for workplace mental health. This course is designed to enhance trainers in mental health literacy and peer support expertise with an emphasis on knowledge, skills, and confidence. In this course students will develop an understanding of the value, fundamentals, and practices of peer support skills. By the end of this course students will be able to demonstrate a basic knowledge of mental health literacy, find shared meaningful experiences with peers, express empathy through reflections, and demonstrate active listening skills. Students will also be able to assist in connecting people who are struggling to specialty professional services such as crisis counseling and addiction recovery services.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 343	Spencer-Thomas, S.

3000 Computer Fundamentals for Pipe Trades Instruction

Students must bring a laptop.

This course will introduce students to the basics of computers and Microsoft Windows®. Attendees will learn to produce professional looking documents using a personal computer, create electronic spreadsheets to help prepare budgets, manage numerical information, prepare presentation graphics, and present information. In addition, there will be time at the end of the week to learn about the internet and related topics. Microsoft® Word, Excel, and PowerPoint are the primary software programs taught. Students will be required to fill out a pre-course survey prior to attending the ITP.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	BE 280	Withrow, J.
2	1:00 pm - 5:05 pm	BE 280	Withrow, J.

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.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	TI 241	Baxter, B./Greer, J.
2	1:00 pm - 5:05 pm	TI 241	Baxter, B./Greer, J.

3006 Preparing for Digital Literacy

Students must bring a laptop.

This course will provide participants with information regarding school network concerns, such as setting up online courses, the different types of equipment utilized in online learning, incorporating mobile devices in your programs, and will include the security concerns regarding them. Additionally, students will learn to navigate the ever-changing world of web security, and will be taught how to safeguard JATC programs.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 119	Whitlock, J.
2	1:00 pm - 5:05 pm	LA 119	Whitlock, J.

3007 Utilizing UA Technologies in the Classroom

Students must bring a laptop.

Must have a basic knowledge of Microsoft Office™ and Blackboard™

This course will help prepare your classroom for teaching the next generation workforce. A wide variety of interactive teaching tools will be discussed and demonstrated. Additionally, this course will highlight the latest in virtual reality, augmented reality, and online resources that the International Training Fund has developed. Discussion will be held around transitioning from the traditional classroom to a smart classroom, utilizing iPads, polling devices, and other electronics to turn your classroom into an interactive learning environment. At the end of this course, students will be more confident using and administering all e-Resources offered by the UA.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	BE 276	Burrall, V.
2	1:00 pm - 5:05 pm	BE 276	Burrall, V.

3008 Intermediate Computer Skills for the Trade Teacher

Students must bring a laptop.

In this course students continue their study of computer skills for the trade teacher. Students will acquire skills in document formatting techniques using MS Word and MS Excel including electronic spreadsheets and databases. Other topics include: computer and web based software, Word, Excel, Google Docs, Google Sheets, computer-based software programs, web-based software programs, word processing, formatting, tables, large documents, and graphics.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	TI 243	Marbury, N.
2	1:00 pm - 5:05 pm	TI 243	Marbury, N.

3025 Autodesk® Revit® MEP

Explore the uses of Autodesk® Revit® MEP software as a design, collaboration, coordination, communication, and fabrication tool for the construction industry. Using 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. Additional topics include utilizing point clouds for as-building, building Autodesk Revit families, total station point creation, and useful third-party, add-in software.

Required textbooks or resource materials: *CADLearning®*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	GL 106	Verna, D./French, J.
2	1:00 pm - 5:05 pm	GL 106	Verna, D./French, J.
3	8:00 am - 12:05 pm	OE 146	Becker, C./Franke, J.
4	1:00 pm - 5:05 pm	OE 146	Becker, C./Franke, J.

3026 Advanced Autodesk® Revit® MEP

This course is a continuation of the Autodesk® Revit® MEP course. Utilizing the latest Autodesk Revit software, students will explore the advanced uses of Autodesk Revit MEP as a complete design-to-fabrication VDC/BIM tool for the pipe trades. This hands-on course will expose students to advanced

methods of pipe routing. Additionally, students will learn how a coordinated model is processed into installation shop drawings, spool maps, and fabrication spool sheets. Other topics include utilizing schedules for bill-of-materials and reports, building parametric Autodesk Revit families, customizing templates, and other useful third-party, add-in software.

Required textbooks or resource materials: *CADLearning®*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	GL 103	Ashburn, J./Hintz, M.
2	1:00 pm - 5:05 pm	GL 103	Ashburn, J./Hintz, M.

3031 Robotic Total Station Layout – Topcon – Sokkia

Students must bring a laptop.

This course demonstrates methods for the proper setup, utilization, and care of laser-based layout and positioning equipment (Total Station). The equipment includes robotic units, tablet computers, and software from leading manufacturers. The course also will employ hands-on experience to learn piping construction layout techniques, measurement techniques and surveying techniques when applying layout points derived from Building Information Modeling (BIM) processes. **Personal protective equipment is required. Please refer to the safety requirements.**

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 341	Hawkins, H.
2	1:00 pm - 5:05 pm	LA 341	Hawkins, H.

3032 Robotic Total Station Layout – Leica

Students must bring a laptop.

This class will focus on Leica Robotic Total Station. Participants will learn setup, layout and QAQC with an emphasis on hands-on learning using the latest equipment and software. Training will include how to verify Building Control Points, move Building Control Points to other levels of a structure, Load layout points from a module into the total station, layout points that we loaded into the total station and load back into the model.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 341	TBD
2	1:00 pm - 5:05 pm	LA 341	TBD

3033 Robotic Total Station Layout – Trimble®

Students must bring a laptop.

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.**

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 341	Gutierrez, R.
2	1:00 pm - 5:05 pm	LA 341	Gutierrez, R.

3034 Advanced RTS Training

Prerequisite: 3033 Robotic Total Station Layout – Trimble®

Students must bring a laptop.

This course is designed to prepare the individual for certification in Trimble RTS layout. 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.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 214	Branch, J.
2	1:00 pm - 5:05 pm	LA 214	Branch, J.

3050 Utilizing Jobsite Technology

Students must bring a laptop.

Participants will receive an overview of the new equipment and technology that is changing the way projects are being completed. Some of the new equipment that will be shown and discussed include: BIM, CAD, BIM 360™ Field and Glue on iPads, 3-D laser scanners, and robotic layout devices. Additionally, there will be demonstrations of new technology such as virtual reality eyewear and augmented reality and how they are being utilized will be discussed. Students will learn how even the standard gang box is being updated to incorporate new technology. This course will offer discussion and hands-on demonstrations of new equipment and technology.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 223	Van Rhyn, J.
2	1:00 pm - 5:05 pm	LA 223	Van Rhyn, J.

3055 Mobile Technology for the Construction Industry

Students must bring a laptop.

Explore the practical application of tablet technology. Participants will discover how to leverage project models to virtually layout and install a piping project. Tablet technology makes working on a jobsite more efficient, ensuring that team members are always viewing the latest revisions. Explore the future of technology in construction as you learn how these technologies deliver incredible value for the project owner. This course will cover BIM 360™, Bluebeam®, and other jobsite applications, including virtual and augmented reality apps that further enhance the construction process.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 130	Maestretti, G.
2	1:00 pm - 5:05 pm	LA 130	Maestretti, G.

3100 Understanding the BIM/VDC Workflow in Today's Construction Industry

This course will demonstrate the virtual design and construction workflow on small projects for the plumbing, mechanical, and fire protection industries. Attendees will gain a better understanding of how a BIM project follows a workflow from the design concept to installation. The course will include hands-on instruction for design, submittals, collaboration, scheduling, fabrication, layout, and installation documentation. This course is intended for all pipe trades instructors who are currently teaching or plan to teach plan reading, field layout, fabrication, computer-aided drafting, and/or intro or advanced classes in BIM/VDC. This will give those instructors a better understanding of the overall BIM process, and where their training fits into the VDC workflow. This course will also provide materials and models to utilize for various VDC courses at the local training centers.

Required textbooks or resource materials: *CADLearning®*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 104	Posey, E./Milligan, S.
2	1:00 pm - 5:05 pm	OE 104	Posey, E./Milligan, S.

3110 DfMA and Modular Construction

In this course we will explore Design for Manufacture and Assembly (DfMA) workflows and methods as they apply to mechanical and plumbing piping installations. The goal of this training is for our UA members to learn and understand DfMA principles, while also applying them to modular assembly techniques while utilizing the latest piping fabrication tools and technologies. Hands on interaction with generative design, fabricated modular piping and equipment assemblies, as well as automated tools, will be utilized during the instruction. These tools and assemblies will be accessed by students within the UA Fabrication Freight Container provided on site. In addition, DfMA integration with Virtual Design and Construction (VDC) workflows including the production of three-dimensional models for modular construction will be discussed, including the application of Revit, BIM 360, Navisworks, and STRATUS software tools to modular fabrication.

Required textbooks or resource materials: *CADLearning®*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	TI 246	Russell, J./Lee, D.
2	1:00 pm - 5:05 pm	TI 246	Russell, J./Lee, D.

4001 Methods in Teaching Water Supply Systems

Students must bring a laptop.

This course is designed for those teaching the installation of water supply systems. It includes water supply system historical perspectives; a glossary of terms; water supply pipe materials, fittings, valves, and supports; water sources and water treatment; water distribution systems; building water supply systems; water system sizing; water heating; and water conservation.

Required textbooks or resource materials: *Water Supply Systems (R/17)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 116	Ibrahim, H.
2	1:00 pm - 5:05 pm	LA 116	Ibrahim, H.

4002 Methods in Teaching Drainage Systems

Students must bring a laptop.

Designed for those teaching the installation of the various drainage systems used by pipe trades journeyworkers. The course includes drainage historical perspectives, an illustrated glossary, drainage waste and vent materials, fittings and supports, traps and fixture connections, the building sanitary drainage system, vet systems, sewers and sewage treatment,

storm drainage, alternate sources drainage systems, private sewage disposal systems, and drain waste vent and storm water sizing.

Required textbooks or resource materials: *Drainage Systems (R/16)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 101	Montemarano, G.
2	1:00 pm - 5:05 pm	OE 101	Montemarano, G.

4003 Methods in Teaching Plumbing Fixtures

Students must bring a laptop.

The course content covers the design and function of plumbing fixtures, installation practices, institutional fixtures, fixture controls, appliances, and accessories. Fixtures will be discussed from their earliest uses through the latest innovations. Participants will view and receive PowerPoint® presentations and videos designed to aid them in teaching a plumbing fixtures class.

Required textbooks or resource materials: *Plumbing Fixtures and Appliances (R/18)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 259	Finley, R.
2	1:00 pm - 5:05 pm	LA 259	Finley, R.

4004 Plumbing Code Application

Students must bring a laptop.

This course is designed to assist the UA instructor in teaching and developing a plumbing code class. The course will include a brief overview of the history of plumbing code development in the United States and Canada. Comparisons of requirements in the Uniform Plumbing Code, International Plumbing Code, National Standard Code, individual state written codes, and the National Plumbing Codes of Canada pertaining to fixtures, water heaters, water supply, drainage, venting, storm drains, and gas pipes will be discussed. Software tools, such as the UA Plumbing Code Application Manual DVD, ExamView®, PowerPoint®, AutoCAD®, and BIM will be demonstrated. Resources on the internet websites of various organizations, such as the UA, IAPMO, ICC, NCC, ASSE, ASPE, PHCC, and MCA will be reviewed. The use of instructional techniques, such as creating assignments and tests, student presentations, and dealing with problems in classroom settings will also be covered in this course.

Required textbooks or resource materials: *Plumbing Code Application Manual (F/08); Plumbing Code Application Manual Instructor DVD (F/08)*

4004 Plumbing Code Application *(continued)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 310	Rademacher, D./Shank, J.
2	1:00 pm - 5:05 pm	LA 310	Rademacher, D./Shank, J.

4005 Copper Piping Systems, Advanced Installations, Specialized Design, and Safe Operation

Students must bring a laptop.

Copper and copper alloy piping are important materials for the pipe trades. The success of copper piping systems is dependent on proper system design, installation, and operation. This course will provide the instructional tools and information necessary for UA instructors to teach apprentices and journeymen how to deliver high-quality copper systems. It will focus on teaching methods for both classroom and shop settings. Experts in the field of copper and copper alloys will discuss and demonstrate procedures for UA instructors to use in delivering training to apprentices and journeymen. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Soldering and Brazing (R/06)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 148/ OE 161	Moret, H./Elmer, M./ Kireta, A./Shimmel, G.
2	1:00 pm - 5:05 pm	OE 148/ OE 161	Moret, H./Elmer, M./ Kireta, A./Shimmel, G.

4006 Methods in Teaching Backflow Prevention Certification

Prerequisite: Backflow Prevention and Assembly Tester Certification

Students must bring a laptop.

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

Participants who wish to be certified as a backflow tester must successfully pass the written and practical exam. They will receive an ASSE 5110 Backflow Tester Certification (recertification).

Guidelines are presented for instruction in acceptable testing practices, annual inspection, and backflow prevention assembly repair for backflow preventers used in cross-connection control programs. Course materials cover topics such as cross-connection identification, reasons for backflow occurrences and the dangers they present, methods of cross-connection control, recommended applications for each type of backflow methods, device or assembly, relevant regulations and codes,

and tester liability. The demonstration of a number of acceptable hands-on testing procedures and the maintenance requirements for various devices and assemblies also will be covered. The minimum requirement for attending this course is to have previously received a nationally recognized Backflow Prevention and Assembly Tester Certification. Attendance will fast track the application process to become an ASSE approved instructor or proctor for the 5110 Certification. The course will involve hands-on training. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Backflow Prevention Reference Manual, Fourth Edition (R/22)*; *ASSE Series 5000 Professional Qualification Standard (Latest Edition)*

Sec	Time	Location	Instructor
1	8:00 am - 5:05 pm	OE 150	Cleary, S./Young, R.

4007 Backflow Repair and Maintenance

Prerequisite: 4006 Methods in Teaching Backflow Prevention Certification (B)

Students must bring a laptop.

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

Participants who wish to be certified as ASSE 5130 Backflow Repairers must receive a passing grade on the written and practical exams.

This course offers intense classroom and practical instruction focused on repairing, troubleshooting, and safety. Attendees will be provided with practical methods for dealing with the repair and maintenance of large-diameter assemblies from various manufacturers. In addition, students are required to test the following backflow assemblies during the class: reduced pressure zone, double check, pressure vacuum breaker, and spill resistant pressure vacuum breaker. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Backflow Prevention Reference Manual, Fourth Edition (R/22)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 151/ OE 152	Kajak, J./Thompson, C.

4008 Surveys and Inspections for Cross-Connection Control

Students must bring a laptop.

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

Participants who wish to be certified as ASSE 5120 Cross-Connection Control Surveyors must receive a passing grade on the written and practical exams.

This course will train the student to interpret plumbing codes, evaluate building and site plans, and determine points of cross-connection. The participant will be trained to determine the appropriate level of hazard and to recommend the proper cross-connection control method, device, or assembly to protect the cross-connection. The student will be trained on the proper documentation and recordkeeping to perform a cross-connection survey.

Required textbooks or resource materials: *Backflow Prevention Reference Manual, Fourth Edition (R/22)*

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	GM 305	Jordan, J.

4009 Methods in Teaching Plumbing Service, Maintenance, and Repair

Students must bring a laptop.

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

Participants who wish to be certified as ASSE 13010 Plumbing Service Technicians must receive a passing grade on the written and practical exams.

This course is intended to assist attendees in their development and presentation of classroom instruction of the UA Plumbing Service, Maintenance, and Repair curriculum. The course will concentrate on hands-on skills training utilizing plumbing service mobile classroom training modules and appropriate tools and equipment. The course emphasizes the customer service and communication skills needed in the plumbing service industry. It will include material referencing plumbing service troubleshooting, repair, installation, sales, business operations, vehicles and equipment, and company policies. Attendance will fast track the application process to become an ASSE-approved instructor or proctor for the 13010 certification. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Plumbing Service, Maintenance, and Repair (ATP) (R/17); Customer Service Skills Flashcards; ASSE 13000 Service Plumber and Residential Mechanical Service Technician Professional Qualifications Standard*

Sec	Time	Location	Instructor
1	8:00 am - 5:05 pm	TBD	Fernandez, J./Abruscatti, R./Hammack, T./Wilk, B.

4010 Methods in Teaching Plumbing Service and Customer Service

Students must bring a laptop.

This course is intended to assist participants in their development and presentation of classroom instruction of the UA plumbing service customer care curriculum. Throughout the training, attendees will identify new opportunities with up-to-date plumbing fixtures, products, tools, equipment, safety, and green technology in the plumbing industry. The importance of customer communications, social styles, and salesmanship and marketing will be discussed, as well as the cost of doing business. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Plumbing Service, Maintenance, and Repair (ATP)(R/17); Customer Service for the Residential and Commercial Service Technician video set; Customer Service Skills Flash Cards; MSCA Customer Service Skills Leader CD*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	SRB 115	Fernandez, J./Dee, R.
2	1:00 pm - 5:05 pm	SRB 115	Fernandez, J./Dee, R.

4011 Medical Gas Instructor

Prerequisite: Current Medical Gas Installer and Medical Gas Brazing Certifications

Students must bring a laptop.

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

This course covers the NFPA 2021 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.

Required textbooks or resource materials: *NFPA-99, Health Care Facilities Code, 2021 Edition; NFPA Medical Gas and Vacuum Systems Handbook, 2021 Edition; ASSE Series 6000 Medical Gas Professional Qualifications Standard*

Sec	Time	Location	Instructor
1	8:00 am - 5:05 pm	BE 272	Givens, L./Lewis, J.
2	8:00 am - 5:05 pm	BE 274	Beck, G./Redden, J.

4012 Medical Gas Refresher

Students must bring a laptop.

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

This course will bring current certified medical gas instructors up-to-date on the latest editions of the standards governing the installation of medical gas and medical/surgical vacuum piping systems. This class covers the significant changes that have occurred between the NFPA 2015 standard and the NFPA 2021 standard. A proctored online exam will be administered at the completion of the course. Successful instructors will extend their NITC certification as a medical gas instructor.

Required textbooks or resource materials: *NFPA-99, Health Care Facilities Code, 2021 Edition; NFPA Medical Gas and Vacuum Systems Handbook, 2021 Edition; ASSE Series 6000 Medical Gas Professional Qualifications Standard*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 319	Valdivia, J./Miller, D.
2	1:00 pm - 5:05 pm	GM 319	Valdivia, J./Miller, D.

4013 Medical Gas Inspector

Prerequisite(s): 2 years of experience in the installation of Medical Gas and Vacuum systems; Current ASSE 6010 Medical Gas Installers certification; Current ASSE 6050 Medical Gas Instructor certification

Students must bring a laptop.

In this course, students will receive the required training hours to be prepared to take the NITC ASSE 6020 Medical Gas Inspector certification exam. Topics include, NFPA 2021 codes and ASSE Series 6000 standards 2018 edition 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. Participants will take the NITC ASSE 6020 certification exam at the end of the course.

Required textbooks or resource materials: *NFPA-99, Health Care Facilities Code, 2021 Edition; NFPA Medical Gas and Vacuum Systems Handbook, 2021 Edition; ASSE Series 6000 Medical Gas Professional Qualifications Standard*

Sec	Time	Location	Instructor
1	8:00 am - 5:05 pm	LA 314	Roberts, J./Capps, T.

4016 Methods in Teaching Fuel Gas Systems

Students must bring a laptop.

This class is designed to teach students the correct and safe methods and techniques to install natural gas piping systems

for residential and commercial installations. Class topics of interest and discussion will include sizing, piping methods and assembly, material, code, safety, and testing. Hands on demonstrations in class will aid students to become familiar with some of the tools and material needed to assemble the material in a safe and proper fashion. Piping systems will be discussed in the following categories: Service Lines, Buried Customer Service Lines, and Inside Service. The only requirement needed for this class is a basic knowledge of plumbing fitting vocabulary in order to understand drawing and pictures.

Required textbooks or resource materials: *Fuel Gas Systems (ATP)(R/20)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 356	Grimm, J./Marchand, B.
2	1:00 pm - 5:05 pm	LA 356	Grimm, J./Marchand, B.

4017 Viega Train the Trainer

Students must bring a laptop.

This course will cover Viega press connection systems being utilized in today's plumbing, mechanical, HVAC, and industrial installations. Included will be Copper Tube Size (CTS) metallic press systems for liquid and gas, Iron Pipe Size (IPS) metallic press systems for liquid and gas, and PEX (cross-linked polyethylene) press and crimp systems for plumbing and mechanical applications. The subject matter will cover technical aspects, typical applications, installation best-practices, tooling, and pressure testing of these systems. Also covered will be approvals, codes, and standards governing these systems. The course will also contrast press technology to traditional methods of pipe joining.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 129	Locke, T./Henkowski, C.
2	1:00 pm - 5:05 pm	OE 129	Locke, T./Henkowski, C.

4050 Water Quality Plumbing

Students must bring a laptop.

North America's water delivery infrastructure requires major improvements or needs to be replaced. This critical need impacts all water sources, pipes, faucets, heating and cooling systems, and fire protection systems. This course will provide the participant with the skills necessary to develop and implement a water quality risk management plan for plumbing and potable water systems. The purpose of this course is to provide minimum criteria, identified by industry consensus, to ensure compliance with the referenced standards and codes.

Participants will map, monitor, identify risk, evaluate control measures, and provide documentation as required by ASHRAE 188-2018. This course will also provide the training, education and an ASSE 12061 certification for plumbers working on these systems.

Required textbooks or resource materials: *Water Quality Kit, ASHRAE Guideline 12-2020, ASHRAE Standard 188-2018*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 140	Sullivan, J./Ballay, G.
2	1:00 pm - 5:05 pm	LA 140	Sullivan, J./Ballay, G.

5006 Valve Repair Instructor

Prerequisite: Minimum five years UA journeyworker experience, EPRI Valve Repair Certification

Students must bring a laptop.

This course covers methods in teaching valve repair to apprentices and journeyworkers. This course will focus on the UA Valve Repair Program Manual, how to develop course outlines and schedules for the valve repair class, equipment and tools required, proper recordkeeping, and using Blackboard™ LMS for taking the EPRI tests. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Valve Repair Program (R/06)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 231/ LA 163	Wagner, R./Shue, D.

5007 Advanced Valve Repair Instructor

Prerequisite: 5006 Valve Repair Instructor

Students must bring a laptop.

This course is intended for local union valve instructors. Participants will learn about maintenance procedures, hydraulic torqueing, pneumatic control valves, and pressure seal valves. Students will practice how to procedurally disassemble, inspect and reassemble pneumatic control valves, as well as pressure seal valves. The hydraulic torqueing CD, DVD of pneumatic control valve and pressure seal valve, along with a CD that includes 3-D imagery of each valve will be made available to each student. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Advanced Valve Repair (R/20)*

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	LA 231	Shue, D./Wagner, R.

5009 Industrial Rigging Technologies

Students must bring a laptop.

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 (spiral-bound); Signal Person Training Course Instructor Guide*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 127	Howard, M./Massengale, B./ McCreary, M.
2	1:00 pm - 5:05 pm	OE 127	Howard, M./Massengale, B./ McCreary, M.

5011 Industrial Rigging Certification for Instructors

Prerequisite: 5009 Industrial Rigging Technologies

Students must bring a laptop.

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

Students will be provided theoretical and practical components that cover industry-recognized rigging practices, including calculating centers of gravity, sling stress, and crane setup, as well as the use of tuggers, jacks, and rollers. Instructors' rigging skills will be evaluated by means of written and hands-on performance exams. Students are required to perform a sequence of crane lifts using multiple types of rigging equipment. Industrial rigging and crane signaling training modules will be demonstrated and used. **Personal protective equipment is required. Please refer to the safety requirements.**

Note: Student requirements before attending this course:

- Review pages 1 to 163 – *IPT Crane and Rigging Handbook*
- Review *Rigging Manual*

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

Sec	Time	Location	Instructor
1	8:00 am - 5:05 pm	GM 318	Parsons, S./Ingles, E./ Mulligan, D./Reece, F./ Wadford, S.

5012 UA Crane Signal Person Certification for Instructors

Students must bring a laptop.

In this course students will become qualified signal persons that more than meet the requirements of OSHA CFR 1926 subpart CC. In addition to the standard method of hand signals, voice and new signals will be taught. Working knowledge of the conditions for safe crane operation in various working conditions, dynamics of load movement, electrocution hazards, and hoisting of personnel will be covered. This course will use a combination of animations and videos to illustrate all the standard hand signals, crane characteristics, and crane limitations. Obtaining this certification through written and performance exams will allow these students to become instructors and exam administrators for their home locals.

Required textbooks or resource materials: *Signal Person Training Course Student Guide (ETS); Signal Person Training Course Instructor Guide (ETS)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 320	Kealey, D.
2	1:00 pm - 5:05 pm	GM 320	Kealey, D.

5015 Advanced Tube Bending

Students must bring a laptop.

This course begins by covering the parts of a bender, the simple bending process, and the Setback, Advance, Gain (SAG) process. The majority of the course is the study of the SAG method of bending. A general understanding of trigonometry is required, and a review of the fundamentals will be covered in class. Most of the course is devoted to making equal spread offsets and rolling offsets using tube benders. Discussions will take place applying the learned concepts on the use of the tangent line to solve a variety of piping related scenarios, such as mitering pipe to make fittings, cutting back a weld elbow to make a fitting less than 90 degrees, and calculating the takeoff of the new fitting. The last portion of this course will be devoted to preparing students to teach at their home locals. All resources such as worksheets and PowerPoint® presentations will be given out to students in digital format. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Tube Bending (R/13)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 152	Gaby, K.
2	1:00 pm - 5:05 pm	LA 152	Gaby, K.

5019 Pipefitting Layout

Students must bring a laptop.

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

In this course, students will be introduced to the 57 1/4" method for layout of simple and rolling offsets, miters, odd angle fittings, odd angle laterals, all without using math. Students will be able to layout nozzles/o-lets on tanks and pipe at exact angles. Students will learn skills to be able to teach this method to their students in their home locals. Students will also be acquainted with the Pipe Trades Pro Calculator and its usefulness in pipefitting layout. **Personal protective equipment is required. Please refer to the safety requirements.**

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 163	Mauk, T./Fogarty, J.
2	1:00 pm - 5:05 pm	OE 163	Mauk, T./Fogarty, J.

5021 Instrumentation Level II Administrator and Implementing a Process Controls Instrument Technician Program

Prerequisite: UA/IBEW EPRI Instrumentation Level I Certification

Students must bring a laptop.

This course is constructed of two parts. The first part is designed for students who hold a current UA/IBEW EPRI Level I Certification and are seeking to be certified as a Level II administrator. Students should have a strong background in the fundamentals of industrial instrumentation and calibration. The UA/IBEW EPRI Level II Administrator Certification consists of five process control instruments using a variety of calibration equipment. This is a hands-on pass/fail certification exam. The second part is designed specifically for local unions that want to set up and implement an instrument calibration program. The curriculum will cover the educational resources, calibration equipment, and instruments needed to set up a program. Students will be given the curriculum materials to assist them in setting up this program.

Required textbooks or resource materials: *Applied Science of Instrumentation (IPT/IBEW) (F/17)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 210	Boyd, W.
2	1:00 pm - 5:05 pm	LA 210	Boyd, W.

5025 Implementing a Gas Distribution Pipeline Training Program

Students must bring a laptop.

This course will teach natural gas pipe joining and pipefitter techniques using UA workbooks. The use of plastic fusion equipment to perform manual, hydraulic, and sidewall fusion will be demonstrated. Also, demonstrated will be tapping and stopping pipelines under pressure, plus residential meter set.

Personal protective equipment is required. Please refer to the safety requirements.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 114	Musgrove, R./Booth, R.
2	1:00 pm - 5:05 pm	LA 114	Musgrove, R./Booth, R.

6000 Teaching HVACR Service Apprenticeship Curriculum

Students must bring a laptop.

This course covers the development and presentation of classroom instruction in the sub-topics relating to the five-year HVACR apprenticeship training program. Students will explore using PowerPoint® and ExamView® as instructional tools. Students will also learn how to operate software developed for Blackboard™, customize UA Circuit Builder software, and request, setup, and integrate UA HVACR virtual reality troubleshooting scenarios into their lesson plans.

Required textbooks or resource materials: *HVAC and Refrigeration Systems Training Manual, (ATP) (F/14)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 221	Kardos, M.
2	1:00 pm - 5:05 pm	LA 221	Kardos, M.

6001 HVACR Basic Electricity

Students must bring a laptop.

This course provides a review of electrical theory relating to voltage, amperage, and resistance, with specific emphasis on the safe use of troubleshooting tools on the job. HVACR control circuits will be covered in detail with real-world examples demonstrated. Students will learn how to operate software developed for Blackboard™, customize UA Circuit Builder software, and request setup, and integrate UA HVACR virtual reality troubleshooting scenarios into their lesson plans.

Required textbooks or resource materials: *Basic Electricity (R/15)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 303	Berger, D.
2	1:00 pm - 5:05 pm	GM 303	Berger, D.

6002 Commercial Refrigeration and Supermarket Applications

Students must bring a laptop.

This course is recommended for UA technicians with HVACR service experience who want to advance their skillset for the ever-changing sector of the supermarket service industry. This course will provide training programs with the resources to effectively incorporate commercial refrigeration training within their local training programs. Topics will include technical education, integrated control strategies, increase in alternative energy and refrigerant applications. Discussion will be presented on safety, new refrigerant technology, refrigerant management, energy management, and controls. Attendees will be taught the operation and purpose of a walk-in freezer and cooler condensing units as well as compressor racks and sub-systems including: evaporators, display cases, system safety and operating controls, compressors, oil separators, receivers, three-way valves, service valves, subcoolers, pressure regulating valves, leak detection, and rack system accessories. Additionally, the course will include basic knowledge of analyzing and navigating the relationship between the contractor and supermarket owner. The UA instructor will learn how to teach communication skills that will benefit both the technician and supermarket personnel. This course will allow the UA instructor to integrate these concepts into class for UA craftsmen in their home local to qualify to work on all types of contracts.

Required textbooks or resource materials: *Refrigeration Mechanical Equipment Service Manual (R/14)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 350	Cutler, B.
2	1:00 pm - 5:05 pm	LA 350	Cutler, B.

6006 Teaching Hydronic Heating and Cooling Systems

Students must bring a laptop.

This course will cover low-pressure water boilers, heat exchangers, chillers and condensers, water source heat pump systems, cooling towers, system controls and accessories, hydronic control valves, valve arrangement, piping system layouts, piping practices, centrifugal pumps, pump curves, system curves, primary-secondary pumping, flow balancing (elementary), venting, zoning, expansion/compression tanks, fluid flow principles, and heat transfer calculations.

Required textbooks or resource materials: *Hydronic Heating and Cooling (R/15)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 311	Worth, D.
2	1:00 pm - 5:05 pm	GM 311	Worth, D.

6009 Methods in Teaching Start, Test, and Balance

Students must bring a laptop.

Note: This course is a prerequisite for the CA Title 24 Acceptance Test Technician Certification.

This course is designed to equip students with presentations, resources, and hands-on demonstrations, and evaluation exercises to conduct HVACR start, test, and balance training. Emphasis is on practical skills and applied theory necessary for teaching a basic course in air and water balancing. The principles of heat transfer and fluid flow, as related to hydronic balancing and system performance, as well as electrical testing and measurement, will be covered. The application and operation of system components, such as fans, pumps, duct systems, and hydronic piping systems will be detailed. Classroom examples will be demonstrated on operating air and hydronic components. Fluid flows will be calculated and then measured on these systems. One class session will be held in a mechanical room to allow students to experience a hands-on startup and balance of both an air and hydronic distribution system. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Start, Test, and Balance (R/18)*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GL 112	Engel, E./McGrath, F.

6012 Variable Refrigerant Flow (VRF) – The CITY MULTI Service Course (Mitsubishi)

Students must bring a laptop.

This course is an introduction to variable refrigerant flow (VRF) systems applied in the HVACR industry of ductless/multi-split systems. This course has been designed to provide the knowledge and tools required to demonstrate and explain how best to teach VRF systems. Students will be provided with up-to-date service and engineering manuals, and software where possible to assist with program startup. The best methods of teaching the skills of application, designing, installing and commissioning VRF systems will be a focused outcome. Industry standards and some troubleshooting of popular VRF systems will be provided. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Mitsubishi CITY MULTI Service Course Book*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	HL 105	Graham, C./Newbro, J.
2	1:00 pm - 5:05 pm	HL 105	Graham, C./Newbro, J.

6015 Introduction to Oil-Less/Magnetic Bearing Centrifugal Compressors

Students must bring a laptop.

This course will cover the history of the compressors, including theory of operation, external and internal compressor components, and refrigerant flow through the compressor, electrical and control flow through the compressor, electrical components and operation, monitoring software introduction, software download and install, troubleshooting with the monitoring software, control options, and external controllers. An overview of equipment from manufacturers, such as Turbocor, Multistack, and Smardt, along with providing instruction on how to utilize this information to teach this material to local programs also will be discussed.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 156	Sommise, D./Ohlde, C.
2	1:00 pm - 5:05 pm	LA 156	Sommise, D./Ohlde, C.

6016 Variable Frequency Drive (VFD) Fundamentals and Commissioning

Students must bring a laptop.

In this course, students will identify and review variable frequency drive (VFD) operation and components. A hands-on lab will allow students to check, test, and complete factory startup on various manufacturers of VFDs. Students will be introduced to UA material pertaining to VFDs in order to develop their own VFD class at their home local.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 126	Clinedinst, M.
2	1:00 pm - 5:05 pm	LA 126	Clinedinst, M.

6017 Pump Service and Maintenance

Students must bring a laptop.

This course will give the participant an understanding of pump selection and pump performance and will describe operating characteristics. Proper servicing techniques will be discussed and demonstrated, along with a hands-on lab for the participants. Repair procedures will be outlined in a step-by-step fashion, including manufacturer-recommended best practices. The participants will observe a demonstration of flow measurement utilizing the UA Service Tech Mobile Lab. Take-home curriculum will be offered to help create a similar class in local union training centers. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *Pumps (R/00)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	OE 121	McHugh, C./Hopkins, J./Kutin, S.
2	1:00 pm - 5:05 pm	OE 121	McHugh, C./Hopkins, J./Kutin, S.

6028 HVACR Flow Measurements and Concepts

Students must bring a laptop.

This course is intended for students to facilitate classes on performance testing, that is, the measurement and analysis of data such as air flow, water flow, refrigerant flow, and electrical power input. Participants will perform practical exercises on operating equipment training modules and/or functional building equipment. The initial session will include a recap of fundamental training modules, such as the fundamental basis for determining airside total heat differential from wet bulb readings, measuring air velocity and calculating CFM, determining airside pressure drop as compared to design, measuring and plotting a fan curve, and comparing horsepower approximations with specifications. The course also will examine the fundamental basis for determining water flow (GPM) via circuit balancing valves, and/or determining waterside pressure drop, as compared to design, measuring and plotting a pump curve, and comparing horsepower approximations with specifications. Apparent power input evaluation will be included, such as measuring voltage and current inputs, approximating and comparing to nameplate, evaluating imbalances, etc. Attendees also will be required to follow up the training session by submitting documentation on two field performance tests from their home locals or field test sites.

Required textbooks or resource materials: *Start, Test, and Balance (R/18)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	1:00 pm - 5:05 pm	GL 112	Engel, E./McGrath, F.

6035 One Day Retro Fit

Students must bring a laptop.

This course will focus on the procedures for one day replacement of split system and packaged equipment replacement. Lessons based on best practices in equipment placement, on-site duct modifications, reconnection of gas and electric, use of sheet metal tools, sheet metal identification, common problems, and consideration with these types of replacements. Class to include hands on tool usage, field fabricated duct transitions with basic sheet metal tools, RTU replacement with prefabricated roof curb adapter, start up and testing procedures.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	HL 106	Bryant, D.
2	1:00 pm - 5:05 pm	HL 106	Bryant, D.

6036 Air and Water Systems Operation, Troubleshooting and Solutions

Students must bring a laptop.

The class will focus on the elements of design, control, and common problems of larger distributed air and water systems. We will examine newer variable air and water flow systems and include a review of older, tried, and true designs as well. Integration of new and legacy systems, control schemes, addressing inefficiencies and lack of performance and will be explored. Student instructors will study analysis techniques of the refrigerant cycle and heat transfer, variable and part load analysis of fans and pumps as well as system response to adjustments. Enhanced electrical measurement techniques will be covered, with a view to enhanced understanding of power and power factor, especially at part load operation. Optimizing systems for part-load operation, rightsizing and staging strategies will also be discussed. Several real-world systems will be analyzed in the class as examples and solutions devised.

Required textbooks or resource materials: *Start, Test, and Balance (R/18)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	OE 133	Kirk, P.
2	1:00 pm - 5:05 pm	OE 133	Kirk, P.

6059 Safe Handling of Mildly Flammable Refrigerants

Students must bring a laptop.

The transition to low-GWP refrigerants for residential and commercial comfort cooling and commercial refrigeration will include alternatives that are mildly flammable, highly flammable, and have a higher toxicity than those used today. Refrigerant flammability creates novel challenges for the delivery chain never before evaluated and addressed as a whole. This course will offer the latest training on emerging low-GWP refrigerants

Required textbooks or resource materials: *Low GWP Refrigerant Safety: Flammable and Mildly Flammable Refrigerants (Esco)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	OE 109	Schmidt, M./Obrzut, J.
2	1:00 pm - 5:05 pm	OE 109	Schmidt, M./Obrzut, J.

6061 Troubleshooting Residential HVACR Systems

Students must bring a laptop.

Participants will receive training related to residential HVACR systems and service utilizing a combination of instructional methods, including a variety of HVACR trainers and HVACR tools in the lab. Attendees will learn installation, startup, commissioning, and troubleshooting of residential split systems. Additionally, techniques will be demonstrated by Appion, Fluke, and iManifold as it relates to calculating and quantifying energy performance of residential split systems. **Personal protective equipment is required. Please refer to the safety requirements.**

Required textbooks or resource materials: *HVAC and Refrigeration Systems Training Manual, (ATP) (F/14)*

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	SRB 117	Fala, A./McQuiston, T.

6063 Commercial and Residential Boiler Service

Students must bring a laptop.

Participants will obtain fundamental knowledge on the design of standard boilers with an emphasis on high efficiency condensing boiler systems, including: multi-temp with radiant heat exchanger design, zoning with pumps and/or valves, heat exchanger design, expansion tank sizing, combustion theory, water chemistry, and boiler controls. Additionally, advanced knowledge on multiple boiler system design including: hybrid system, venting, load matching demands, startup and combustions, boiler/system controls, and connectivity will be offered. Steam and hot water boiler safety will be demonstrated.

Required textbooks or resource materials: *Hydronic Heating and Cooling (ATP)(R/16), Fuel Gas Systems (ATP) (R/20), Lessons Learned Servicing Boilers: Things to Know When Maintaining Boilers (Wohlfarth)*

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	LA 235	Tisdale, B.

6066 Data Harvesting

Students must bring a laptop.

Technology moves faster than society. The harvesting and monetization of data will provide the next challenge for all UA craftsmen and women. Cognitive buildings can flexibly adapt to changing occupant needs while saving energy and cost – isn't it time all service technicians understand the impact to their everyday work flow? This course will offer the participant the strategic skillset to offer all UA members the opportunity

to be employed by contractors who build and maintain the 21st century industrial and commercial property.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	BE 176	McQuiston, T.

6080 Water Quality Mechanical

Students must bring a laptop.

North America's water delivery infrastructure requires major improvements or needs to be replaced. This critical need impacts all water sources, pipes, faucets, heating and cooling systems, and fire protection systems. This course will provide the participant with the skills necessary to develop and implement a water quality risk management plan for mechanical systems. The purpose of this course is to provide minimum criteria, identified by industry consensus, to ensure compliance with the referenced standards and codes. Participants will map, monitor, identify risk, evaluate control measures, and provide documentation as required by ASHRAE 188-2018. This course will also provide the education and an ASSE 12062 certification for pipefitters and service technicians working on these systems.

Required textbooks or resource materials: *Water Quality Kit, ASHRAE Guideline 12-2020, ASHRAE Standard 188-2018*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 140	McDonough, K.
2	1:00 pm - 5:05 pm	LA 140	McDonough, K.

6081 Steam Systems

Students must bring a laptop.

Steam systems are used in industrial, institutional, commercial, and residential buildings for comfort heating and manufacturing processes. This course demonstrates methods in multiplatform engagement for teaching and understanding principles of steam creation, including principles of instruction and testing of comprehension. Attendees will be provided theoretical and practical techniques to explain steam generation, distribution, operations, and maintenance. The application of safety controls and operating components will be discussed. Installation and arrangement of steam piping will be offered to promote fuller understanding of steam distribution. Additionally, classroom use of Blackboard™ and the UA Online Resources (UAOLR.org) will be highlighted.

Required textbooks or resource materials: *Steam Systems (R/19)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 359	Aspen, G.
2	1:00 pm - 5:05 pm	LA 359	Aspen, G.

7000 Fire Protection Technology/Technical Class for Sprinkler Fitters

Students must bring a laptop.

In today's world, technology is changing at a rapid pace. In this course, the UA journeyworker will learn about the latest technologies available for fire protection for industrial, commercial, and residential use. The technologies presented will range from system components to new fire protection systems, including their installation methods. Design, engineering, and software that have an impact on the fire protection industry also will be covered.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 335	Ketner, C.
2	1:00 pm - 5:05 pm	LA 335	Ketner, C.
3	8:00 am - 12:05 pm	LA 337	Fox, S.
4	1:00 pm - 5:05 pm	LA 337	Fox, S.

7002 Viking Foam Systems

Students must bring a laptop.

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 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 trouble shooting and repair.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	GM 017	Ivey, J./Miles, D.
2	1:00 pm - 5:05 pm	GM 017	Ivey, J./Miles, D.

7025 Revit® for Fire Protection I

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 technol-

ogy 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.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	TI 244	Johnson, A./Rickert, R.

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 FPS with the other trades. This course will also explore the fabrication and stock listing ability of HydraCAD® for Revit®.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	1:00 pm - 5:05 pm	TI 244	Johnston, A./Rickert, R.

7033 Viking Fire Protection Valves

Students must bring a laptop.

Students will learn about the history of the Viking Group and increase their working knowledge of Viking Fire Protection valves and other components on the market today. This course will combine classroom learning and hands-on practical learning on the various valves and components that make up fire protection valves and trim assemblies. Participants will gain the essential skills to qualify other members in the installation, troubleshooting, and repair of Viking Fire Protection valves. Students who successfully complete the course will receive facilitator guides and learner manuals. **Personal protective equipment is required. Please refer to the safety requirements.**

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	GLRTC #2	Convy, K.
2	1:00 pm - 5:05 pm	GLRTC #3	Convy, K.

7041 Fire Pump Inspection and Testing

Students must bring a laptop.

Students will learn the proper installation, inspection, and testing of various types of Aurora fire pumps. They will learn the instructional techniques necessary to inspect, test, and troubleshoot problems, and make recommendations and adjustments through hands-on work. The code requirements per NFPA 20 and NFPA 25 for inspection and testing of fire pumps, along with requirements for proper personal protective equipment (PPE) per NFPA 70E, also will be covered. Participants will conduct a fire pump test where they will plot and analyze pump curves per code. **Personal protective equipment is required. Please refer to the safety requirements.**

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 154	Franks, J./Usher, F.

7042 Fire Pump Maintenance and Repair

Students must bring a laptop.

Students in this course will learn the proper installation, maintenance, and repair of various types of Aurora fire pumps. Participants will develop best practices to teach regular pump maintenance, how to detect problems, and make necessary repairs through hands-on work. The code requirements per NFPA 20 and NFPA 25 for installation, repair, and maintenance of fire pumps, along with requirements for proper personal protective equipment (PPE) per NFPA 70E, also will be covered. **Personal protective equipment is required. Please refer to the safety requirements.**

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	OE 154/ OE 184	Franks, J./Usher, F.

7050 Inspection, Testing, and Maintenance (ITM) of Fire Protection Systems/ASSE 15000

Students must bring a laptop.

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, the attendee 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. **Personal protective equipment is required. Please refer to the safety requirements.**

Sec	Time	Location	Instructor
1	8:00 am - 5:05 pm	OE 135	Arballo, S./MacDonnell, M.

7051 Water Quality Fire Protection

Students must bring a laptop.

North America's water delivery infrastructure requires major improvements or needs to be replaced. This critical need impacts all water sources, pipes, faucets, heating and cooling systems, and fire protection systems. This course will provide the participant with the skills necessary to develop and implement a water quality risk management plan for water-based fire protection systems. The purpose of this course is to provide minimum criteria, identified by industry consensus, to ensure compliance with the referenced standards and codes. Participants will map, monitor, identify risk, evaluate control measures, and provide documentation as required by ASHRAE 188-2018. This course will also provide the education and an ASSE 12063 certification for sprinkler fitters working on these systems.

Required textbooks or resource materials: *Water Quality Kit, ASHRAE Guideline 12-2020, ASHRAE Standard 188-2018*

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 140	Berra, C.
2	1:00 pm - 5:05 pm	LA 140	Berra, C.

7060 Understanding Fire Alarm Panels and Initiating Devices on Fire Protection Systems

Students must bring a laptop.

Participants in this course will learn about the operation and testing of some fire alarm panels and how the information on panels relates to the initiating devices. Participants will learn about the different types of initiating devices, and how they operate, function, and communicate with the alarm panels. The multi-meter and its function will be introduced, along with proper steps and safety while using it to troubleshoot the electrical initiating devices. The course includes a hands-on workshop where the participants will demonstrate basic operation of alarm panels, including testing and resting each panel, and detecting and troubleshooting problems on the initiating devices that are part of the fire protection system. **Personal protective equipment is required. Please refer to the safety requirements.**

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 103	Hopping, B./Holmes, J.

7071 Developing Tests for Fire Protection Codes and Standards

Students must bring a laptop.

This course is designed to apply practical application use of ExamView software with the NFPA Fire Protection code books to create standardized questions and question banks in ExamView. These can be utilized in the Sprinkler Fitting Industry to aide apprentices and journeyman in staying current with the ever changing codes. Students will learn how to format the questions correctly, how to create proper distractors, how to manage the database of questions and how to integrate the questions and question banks with Blackboard™. The standards that we will be using will be NFPA 13, NFPA 14, NFPA 20, and NFPA 25. Students must be prepared to login to Blackboard™ on the first day.

Required textbooks or resource materials: *ExamView v11*

- Ordering Info: Contact Jim Seasley (616) 334-4789
- ExamView® v11 (current release) = \$99/license (perpetual license for v11)
- Optional: Add-on for Internet/Web Testing Option = \$49/annually
- Special UA Bundle includes ExamView®v11 + Internet/Web Option = \$129 (Year 1 only)

Sec	Time	Location	Instructor
1	1:00 pm - 5:05 pm	OE 103	Hopping, B./Holmes, J.

8000 Administration of an Authorized UA Weld Test Facility

Students must bring a laptop.

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.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	GM 321	Brown, N./Ruggles, M.
2	1:00 pm - 5:05 pm	GM 321	Brown, N./Ruggles, M.

8002 Arc Welding Practical Fundamentals and Theory

Students must bring a laptop. Students must have access to OLR.

UA instructors will gain knowledge in arc welding techniques and practical applications used to develop welder training programs specific to our industry. Instructors will see the importance of visual training aids while teaching a hands-on course. Topics covered will include the different welding processes, basic metallurgy, electrode classifications, F numbers, shielding gases, welding theory, welding safety, process selection, consumable selection, and handling. This is not a shop class; no actual welding will be performed.

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

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 158	Blondin, J./Fitzgerald, P.
2	1:00 pm - 5:05 pm	LA 158	Blondin, J./Fitzgerald, P.

8003 Applied Metallurgy

Students must bring a laptop.

Learn the properties and characteristics of metals commonly used in the pipe trades. Students will learn the nature of ferrous and non-ferrous metals, both in raw and manufactured forms. There also will be an emphasis on the physical and mechanical properties of common metals, and the processes used to create desired changes.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	OE 131	Rufe, P.
2	1:00 pm - 5:05 pm	OE 131	Rufe, P.

8004 Piping Codes for Industrial Work

Students must bring a laptop.

Acquire knowledge in the history of piping codes, piping metallurgy, material selection, installation, welding requirements, testing, inspection, and code stamping for the American Society of Mechanical Engineers code on power and process piping. Classroom examples will be demonstrated on the fundamentals of applicable code sections, standards, materials, design of expansion loops, cold springing, specifications, and quality control through verification of code compliance.

Sec	Time	Location	Instructor
1	8:00 am - 12:05 pm	LA 357	Thein, R./Wickland, L.

8006 Innovative Welding Techniques

Prerequisite: A Shielded Metal Arc Welding (SMAW) or Gas Tungsten Arc Welding (GTAW) UA Welder Certification

Students must bring a laptop.

This course is specifically designed for students who are seeking to improve their pipe welding skills utilizing the SMAW and GTAW welding processes. Students will be shown tried-and-true welding techniques by highly experienced UA welding instructors. All enrolling students should possess the fundamental welding skills in the major processes before they choose to enroll in the course. Individuals taking this course should bring three or more personal welding techniques they may use in the SMAW and GTAW processes. These topics will be used for discussion points and demonstrations. Students must bring their own welding hood, welding jacket, and welding gloves. **Personal protective equipment is required. Please refer to the safety requirements.**

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	GL 104	Forni, J./Disque, P./ Sanchez, E.
2	1:00 pm - 5:05 pm	GL 104	Forni, J./Disque, P./ Sanchez, E.

8007 Orbital Tube Welding

Prerequisite: Current UA-18A and a manual Gas Tungsten Arc Welder (GTAW) Certification.

Students must bring a laptop. Students must bring their own calculator.

The course is designed to help the student teach the programming and operation of orbital welding machines. Students will receive hands-on training, as well as experience classroom time with the leading manufacturers of orbital welding equipment. Students will receive the instructor training materials needed to return to their home locals and be able to teach it in an effective manner. **Personal protective equipment is required. Please refer to the safety requirements.**

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	OE 125	Bliven, D.
2	1:00 pm - 5:05 pm	OE 125	Bliven, D.
3	8:00 am - 12:05 pm	OE 105	Collier, J.
4	1:00 pm - 5:05 pm	OE 105	Collier, J.

8012 Methods in Teaching Shielded Metal Arc Welding (SMAW)

Prerequisite: Current SMAW UA Welder Certifications

Students must bring a laptop.

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 shielded 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.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	OE 156	Wilson, J./Neu, J.
2	1:00 pm - 5:05 pm	OE 156	Wilson, J./Neu, J.

8013 Methods in Teaching Gas Metal Arc Welding (GMAW)

Prerequisite: Current GMAW UA Welder Certification

Students must bring a laptop.

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)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	OE 123	Caron, A./Lavoie, D.
2	1:00 pm - 5:05 pm	OE 123	Caron, A./Lavoie, D.

8014 Methods in Teaching Advanced Gas Tungsten Arc Welding (GTAW)

Prerequisite: Current Gas Tungsten Arc Welding (GTAW) UA Welder Certification

Students must bring a laptop.

This course covers advanced pipe welding techniques used in applications such as welding alloy materials and process piping.

ing. The course focuses on how to teach advanced techniques of gas tungsten arc welding and 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)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	OE 120	Reagan, J./Brawner, Z./Kadlec, P.
2	1:00 pm - 5:05 pm	OE 120	Reagan, J./Brawner, Z./Kadlec, P.

8015 ASME Section IX Welding Code

Students must bring a laptop.

This course is designed to provide participants with an understanding of welding procedure specifications and welder qualifications in accordance with Section IX of the ASME Code. Participants will be able to apply the rules of Section IX as they pertain to the development of welding procedure specifications and the qualification of welders.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 237	Glavin, D./Schultz, C.
2	1:00 pm - 5:05 pm	LA 237	Glavin, D./Schultz, C.

8040 Quality Control Management

Students must bring a laptop.

This course will cover the duties and responsibilities of a quality control inspector. The course will provide the information and knowledge needed to train individuals as quality control inspectors for work in the construction/fabrication industry both in the shop and on the jobsite. The course is designed for AWS Certified Welding Inspectors (CWIs) and for individuals with previous fabrication inspection experience. The course instructors are UA members with many years of experience working as quality control managers in the piping industry. The United Association believes that having a UA trained quality control inspector on staff brings both quality and financial savings to the employing contractor and customer alike.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	1:00 pm - 5:05 pm	LA 357	Thein, R./Wickland, L.

9001 Apprenticeship Standard Guidelines

Students must bring a laptop.

Students must bring a copy of their local union apprenticeship standards.

This course is designed to provide new training directors, coordinators, or JATC members with an in-depth look at apprenticeship standards, and how they can affect the operation of the program. Discussions will be held on the United Association National Guideline Standards, developed by the International Pipe Trades Joint Training Committee, Inc., as well as on the regulations put into place by the U.S. Department of Labor under 29 CFR 29 and 29 CFR 30. Part of this course will involve group discussions on apprenticeship standards.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 311	Ortega, E./Morris, S./Swoope, A.
2	1:00 pm - 5:05 pm	LA 311	Ortega, E./Morris, S./Swoope, A.

9002 Administration of a Jointly Managed Training Program

Students must have a laptop.

This course will provide background information on managing a training program. Through a combination of lecture and discussion, participants will learn best practices in administering their local training programs. Discussions will also be held on industry trends, laws affecting training programs, changes in instructional methods, and curriculum requirements.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 224	Cross, R./Cooper, J.
2	1:00 pm - 5:05 pm	LA 224	Cross, R./Cooper, J.

9003 Understanding Legal Issues and Fiduciary Responsibilities

Students must bring a laptop.

Everyone associated with the operation of a jointly managed training program should be aware of the legal issues and fiduciary responsibilities that exist. Participants in this course will receive information on statutory and regulatory compliance related to operating a training program. Discussion will be held on trust documents, prohibitive transactions, legal documentation procedures, and will include conducting JATC meetings. Additionally, there will be discussion on the common pitfalls associated with various drug testing and fitness testing, as well as the different insurance requirements of a JATC (liability, workers comp, etc.).

9003 Understanding Legal Issues and Fiduciary Responsibilities *(continued)*

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 229	Smith, J./Manley, R.
2	1:00 pm - 5:05 pm	LA 229	Smith, J./Manley, R.

9004 Managing Financial Operations of a Training Program

Students must bring a laptop.

Jointly managed apprenticeship programs operate year-round and have a wide variety of financial obligations. This course is designed to provide individuals who have JATC financial responsibilities with information on how to make sound financial decisions. Participants in this course will benefit from discussions on a variety of financial topics including investments, accounting principles, preparation of yearly budgets, financial reporting requirements, accounting for instructor or trustee expenses, introduction to accounting systems, and preventing and detecting financial fraud. Additionally, there will be discussion on the different types of financial investments available, the need to establish investment policies, and factors to consider when making investments. This course also will include important items to consider when facing potential U.S. Department of Labor (DOL) audits.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 227	Defew, D./Majszak, M.
2	1:00 pm - 5:05 pm	LA 227	Defew, D./Majszak, M.

9006 Addressing Barriers to Apprentice Success

Students must bring a laptop.

This course covers best practices for handling common problems that affect apprentices and prevent their successful completion of a local joint training program. Issues such as substance abuse, harassment, and emotional problems, to name just a few, will be examined. Participants will develop communication skills and will learn apprentice success strategies that will assist them with decreasing resistance from certain students, ultimately motivating them to achieve their full potential.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	1:00 pm - 5:05 pm	LA 111	Spitsbergen, B.

9007 Veterans in Apprenticeship

Students must bring a laptop.

This course will include an explanation of the value that U.S. military veterans bring to the UA apprenticeship programs. Students will receive an overview of the Veterans in Piping® (VIP®) program, which includes the interview process, curriculum, VIP graduate's placement procedures, VIP Task Force objectives, and the VIP website. In addition, there will be an explanation of the structure of the Veterans' Administration (VA) and the Department of Defense (DOD). Participants will learn about Montgomery and post 9/11 GI Bill benefits, including their role in assisting VIP graduates and other veterans claiming these benefits throughout the apprenticeship program. Participants also will become familiar with the DD214 form, and what a Military Occupational Specialty (MOS) means. The program will also provide valuable insight into the signs, symptoms, and treatment of post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI) and will provide resources in regard to what you should do if you suspect an apprentice, who is a veteran, is suffering from one of these conditions. All training directors/coordinators receiving VIP graduates into their programs or have veterans in their programs should take this course.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	1:00 pm - 5:05 pm	LA 343	Ellis, S.

9009 Internal and External Communication for Training Directors

Students must bring a laptop.

Everyday UA training directors and coordinators are challenged with communication from many internal and external sources. How does one prioritize the relevance and urgency of the latest phone call, email, or request? Learn how to communicate effectively and efficiently with your business managers, agents, JATC committee, instructors, and the local stakeholders on the vitality and relevance of your local training initiatives. Strategies will be presented on creating language for operative messaging to all bodies asking or waiting for information from your office. All participants will need to bring a laptop to participate in the working sessions of this course.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	BE 140	Debolt, A./Hopper, A.
2	1:00 pm - 5:05 pm	BE 140	Debolt, A./Hopper, A.

9010 Apprentice Selection Procedures - Interview Selection Process

Students must bring a laptop.

The UA Education and Training Department has worked with local unions across the country to revise and update a structured interview used to select candidates for apprenticeship programs as well as training for interviewers on how to effectively conduct the interview. This workshop provides an overview of the new interview; training on how to conduct interviews that are efficient, fair, and accurate while providing a positive experience for apprenticeship candidates; how to avoid legal challenges in the interview process; and training on how to deliver the training to others. Participants will get the chance to experience the interviewing process while also learning how to deliver the training for others.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	LA 233	Winter, J./Malone, L./ Nygren, R./Richardson, R.
2	1:00 pm - 5:05 pm	LA 233	Winter, J./Malone, L./ Nygren, R./Richardson, R.

9105 UA Canada Training Director/Coordinator Program

Students must bring a laptop

This training program is designed to equip Canadian Training Directors with the latest resources available to them. We will navigate multiple collaboration strategies using the latest innovative solutions and infrastructure while engaging in specialized training as determined from the input of Training Directors across Canada. All curriculum and supplies will be provided for those attending this program.

<u>Sec</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>
1	8:00 am - 12:05 pm	BE 270	Gordon, M.

REQUIRED TEXT MATERIALS FOR CLASSROOM USE

The following items are available for purchase in the UA/IPT Bookstore, located in the Morris J. Lawrence Building. Please note that many courses require the use of UA Online Learning Resources (UAOLR). If you do not currently have access, please go to www.uaolr.org to request an account.

Please note: CADLearning and ExamView v11 subscriptions must be purchased prior to Instructor Training Program. For a CADLearning subscription, visit UAOLR.org and choose “CADLearning” for the External Links menu at the top of the page. For an ExamView subscription, contact Jim Seasily at (616) 334-4789.

<u>Course # / Description</u>	<u>Required Material</u>
2001 Methods in Teaching Pipe Trades Applied Mathematics.....	Related Mathematics (R/02), Piping Handbook and Offset Formulas
2004 Methods in Teaching Drawing Interpretation and Plan Reading....	Drawing Interpretation and Plan Reading (R/00); CADLearning®
2006 Basic Electricity.....	Basic Electricity (R/15)
2008 Labor History and the UA Part One: 1800 to 1920	The Rise of the United Association (Segal); Labor in America, 9th Edition (Dubofsky/McCartin)
2009 Labor History and the UA Part Two: 1920 to the Present.....	The United Association 1924-1989 (Griffith); Labor in America, 9th Edition (Dubofsky/McCartin)
2012 UA/MCAA Foreman Certification	UA Foreman Training Manual (U/22)
2095 Applied Drawing – Advanced	Advanced Plan Reading and Related Drawing; CADLearning®
2100 Adapting Apprenticeship to the 21st Century Student	Not Everyone Gets a Trophy: How to Manage Millennials (Tulgan); Zconomy: How Gen Z Will Change the Future of Business – and What to Do About It (Dorsey & Villa)
2101 Financial Literacy for Apprentices	Million Dollar Blue Collar (Breslin)
2120 Applied Water	Introduction to Contaminants and Treatment, Trainer’s Guide
2150 OSHA 510 OSHA Standards for the Construction Industry	OSHA 510 Binder (CPWR), CFR 1926
2151 OSHA 500 Trainer Course for the Construction Industry.....	OSHA 500 Binder (CPWR), CFR 1926
2152 OSHA 502 Update for Construction Industry Outreach Trainers ...	OSHA 502 Binder (CPWR), CFP 1926
2163 NFPA® 70E® Electrical Safety Train-the-Trainer Course.	NFPA® 70E®: Handbook for Electrical Safety in the Workplace (2021 Edition); NFPA® 70E® Electrical Safety Instructor Guide (NFPA)
3025 Autodesk® Revit® MEP	CADLearning®
3026 Advanced Autodesk® Revit® MEP	CADLearning®
3100 Understanding the BIM/VDC Workflow in Today’s Construction Industry	CADLearning®
3110 DfMA and Modular Construction	CADLearning®
4001 Methods in Teaching Water Supply Systems.....	Water Supply Systems (R/17)
4002 Methods in Teaching Drainage Systems	Drainage Systems (R/16)
4003 Methods in Teaching Plumbing Fixtures.....	Plumbing Fixtures and Appliances (R/18)
4004 Plumbing Code Application	Plumbing Code Application Manual (F/08); Plumbing Code Application Manual Instructor DVD (F/08)
4005 Copper Piping Systems, Advanced Installations, Specialized Design and Safe Operation	Soldering and Brazing (R/06)
4006 Methods in Teaching Backflow Prevention Certification.....	Backflow Prevention Reference Manual, Fourth Edition (R/22); ASSE Series 5000 Professional Qualification Standard (Latest Edition)
4007 Backflow Repair and Maintenance.....	Backflow Prevention Reference Manual, Fourth Edition (R/22)
4008 Surveys and Inspections for Cross-Connection Control.....	Backflow Prevention Reference Manual, Fourth Edition (R/22)
4009 Methods in Teaching Plumbing Service, Maintenance, and Repair.....	Plumbing Service, Maintenance, and Repair (ATP) (R/17); Customer Service Skills Flashcards; ASSE 13000 Service Plumber and Residential Mechanical Service Technician Professional Qualifications Standard
4010 Medical Gas Instructor	Plumbing Service, Maintenance, and Repair (ATP)(R/17); Customer Service for the Residential and Commercial Service Technician video set; Customer Service Skills Flash Cards; MSCA Customer Service Skills Leader CD
4011 Medical Gas Instructor	NFPA-99, Health Care Facilities Code, 2021 Edition; NFPA Medical Gas and Vacuum Systems Handbook, 2021 Edition; ASSE Series 6000 Medical Gas Professional Qualifications Standard

REQUIRED TEXT MATERIALS FOR CLASSROOM USE

4012	Medical Gas Refresher	NFPA-99, Health Care Facilities Code, 2021 Edition; NFPA Medical Gas and Vacuum Systems Handbook, 2021 Edition; ASSE Series 6000 Medical Gas Professional Qualifications Standard
4013	Medical Gas Inspector	NFPA-99, Health Care Facilities Code, 2021 Edition; NFPA Medical Gas and Vacuum Systems Handbook, 2021 Edition; ASSE Series 6000 Medical Gas Professional Qualifications Standard
4016	Methods in Teaching Fuel Gas Systems	Fuel Gas Systems (ATP)(R/20)
4050	Water Quality Plumbing	Water Quality Kit, ASHRAE Guideline 12-2020, ASHRAE Standard 188-2018
5006	Valve Repair Instructor	Valve Repair Program (R/06)
5007	Advanced Valve Repair Instructor	Advanced Valve Repair (R/20)
5009	Industrial Rigging Technologies	Rigging (R/04); IPT Crane and Rigging Handbook (spiral-bound); Signal Person Training Course Instructor Guide
5011	Industrial Rigging Certification for Instructors.....	Rigging (R/04); IPT Crane and Rigging Handbook (spiral-bound)
5012	Crane Signalperson Practical Examiner Accreditation	Signal Person Training Course Student Guide (ETS); Signal Person Training Course Instructor Guide (ETS)
5015	Advanced Tube Bending	Tube Bending (R/13)
5021	Instrumentation Level II Administrator and Implementing a Process Controls Instrument Technician Program	Applied Science of Instrumentation (IPT/IBEW)(F17)
6000	Teaching HVACR Service Apprenticeship Curriculum	HVAC and Refrigeration Systems Training Manual (ATP) (F/14)
6001	HVACR Basic Electricity.....	Basic Electricity (R/15)
6002	Commercial Refrigeration and Supermarket Applications	Refrigeration Mechanical Equipment Service Manual (R/14)
6006	Teaching Hydronic Heating and Cooling Systems	Hydronic Heating and Cooling (R/15)
6009	Methods in Teaching Start, Test, and Balance	Start, Test, and Balance (R/18)
6012	Variable Refrigerant Flow (VRF)—The CITY MULTI Service Course (Mitsubishi).....	Mitsubishi CITY MULTI Service Course Book
6017	Pump Service and Maintenance.....	Pumps (R/00)
6028	HVACR Flow Measurements and Concepts	Start, Test, and Balance (R/18)
6036	Air and Water Systems Operation, Troubleshooting, and Solutions	Start, Test, and Balance (R/18)
6059	Safe Handling of Mildly Flammable Refrigerants	Low GWP Refrigerant Safety: Flammable and Mildly Flammable Refrigerants (Esco)
6061	Troubleshooting Residential HVACR Systems	HVAC and Refrigeration Systems Training Manual (ATP)(F/14)
6063	Commercial and Residential Boiler Service	Hydronic Heating and Cooling (ATP)(R/16), Fuel Gas Systems (ATP) (R/20), Lessons Learned Servicing Boilers: Things to Know When Maintaining Boilers (Wohlfarth)
6065	Smart Home Technology	Residential Wiring and Smart Home Technology webbook (ATP)
6080	Water Quality Mechanical	Water Quality Kit, ASHRAE Guideline 12-2020, ASHRAE Standard 188-2018
6081	Steam Systems.....	Steam Systems (R/19)
7051	Water Quality Fire Protection.....	Water Quality Kit, ASHRAE Guideline 12-2020, ASHRAE Standard 188-2018
7071	Developing Tests for Fire Protection Codes and Standards	ExamView v11
8002	Arc Welding Practical Fundamentals and Theory	Welding Practices and Procedures for the Pipe Trades (ATP)(F/16)
8013	Methods in Teaching Gas Metal Arc Welding (GMAW)	Welding Practices and Procedures for the Pipe Trades (ATP)(F/16)
8014	Methods in Teaching Advanced Gas Tungsten Arc Welding (GTAW).....	Welding Practices and Procedures for the Pipe Trades (ATP)(F/16)

NINE-YEAR RECERTIFICATION FOR CWI®

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

Or 80 Hours in the Following

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

CERTIFICATION WORKSHOPS

Backflow Prevention Assembly Tester Recertification

Prerequisite: Must have a current certification or no more than six months past expiration.

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

UA instructors wanting to update their Backflow Prevention Assembly Tester Certification may sign up for this four-hour, non-credit course, which will provide a review of installation requirements and testing procedures for backflow prevention assemblies. UA instructors who pass a written examination and practical testing of the required assemblies will be recertified for three years. Reciprocity of approved non-ASSE Backflow Prevention Assembly Tester Certifications will be included in the renewal. All reference material will be provided. No textbooks required. Instructors wishing to recertify must provide proof of an approved backflow prevention assembly tester certification. **Personal protective equipment is required for all shop classes. Please refer to the safety requirements.**

Date: Saturday, August 13, 2022

Time: 10:00 am - 2:00 pm

Room: OE 151

UA STAR Certification/Recertification Exam

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

This will be a NITC proctored UA STAR Certification/Recertification exam.

Date: Saturday, August 13, 2022

Time: 10:00 am - 4:00 pm

Room: GM, Computer Commons

Adult Life Support/First Aid Recertification Exam

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

Date: Saturday, August 13, 2022

Time: 12:00 pm - 4:00 pm

Room: GM 332

ASSE 12000 Recertification Infection Control Risk

Date: Saturday, August 13, 2022

Time: 1:00 pm - 5:00 pm

Room: LA 352

Water Quality Program Recertification Date

Date: Saturday, August 13, 2022

Time: TBD

Room: TBD

CERTIFICATION FEES

All certification fees are the responsibility of the JATC instructor. Grades and certifications will not be awarded until all fees are paid.

Backflow Certification Fees:

(Payable to ASSE International)

Backflow Tester = \$120.00

Backflow Repairer = \$120.00

CrossConnection Control Surveyor = \$120.00

Recertification = \$75.00

Service Plumber Certification Fees:

(Payable to ASSE International)

13010 Certification = \$120.00

Infection Control Certification Fees:

(Payable to ASSE International)

12010 Certification = \$120.00

12010 Recertification = \$75.00

Water Quality Program Certification Fees:

(Payable to ASSE International)

12060 - 12063 Certification = \$120.00

12060 - 12063 Recertification = \$75.00

ITM of Fire Protection Systems Certification Fees:

(Payable to ASSE International)

15010 Technician Certification = \$120.00

Medical Gas Certification Fees:

(Payable to NITC by July 20, 2022)

Certification = \$130.00

Instructor Recertification = \$60.00

UA STAR Exam Fees:

(Payable to NITC by July 20, 2022)

Contact Renee Yount at 877-457-6482

Certification = \$150.00

Recertification = \$100.00

Adult Basic Life Support/First Aid:

(Payable to Coyne First Aid)

Recertification = \$110.00

Energy Auditor Certification:

(Payable to NITC by July 20, 2022)

Certification = \$100.00

GREAT LAKES REGIONAL TRAINING CENTER STAFF



Representing Washtenaw Community College

College Credits Awarded by Washtenaw Community College

Dr. Rose Bellanca, President

Linda S. Blakey, Vice President of Student and Academic Services

James Becsey, Vice President for Facilities, Development, and Operations

Dr. Kimberly Hurns, Vice President of Instruction

Terry Barnes, Vice President and Chief Financial Officer

Dr. Michelle K. Mueller, Vice President of Economic Community and College Development

Dr. Marilyn Donham, Dean of Apprenticeships and Skilled Trades Training Programs

John Leacher, Chief of Public Safety and Security

Great Lakes Regional Training Center Staff

Kim Billings

Tony Esposito

Kandi Jurek

Patrick Downey

Melissa Haverty-Smith

Arista Metler

WCC Instructional Faculty

Margie Brooks

Megan Gore

Jennifer Klapper

Brenda Said-Wright

Lori Coleman

Mark Greathead

Cari Littlefield

Karen Shaper

Jamie Collins

Jason Gribble

Carly Lundgren-Barnard

Scott Shaper

Myron Covington

Sarah Henige

Nichole Marbury

Claire Sparklin

Nicole Cullin

Antoniette Hopper

Jeffrey Peet

Brian Spitsbergen

Kristi Cundiff

Gail Houghton

Nicole Phelps

Jason Withrow

Christine Douglass

Amy Johnson

Russell Pickell

Allison Fournier

Charles Johnson

Angela Roelof

Shannon Fray

Jeff Klapper

Phillip Rufe

INSTRUCTIONAL FACULTY AND INDUSTRY REPRESENTATIVES

Robert Abruscati

Local Union 519
Miami, FL

Brian Andersen

Local Union 130
Chicago, IL

Shawn Arballo

Local Union 709
Los Angeles, CA

Jason Ashburn

Local Union 597
Chicago, IL

Glen Aspen

Local Union 488
Edmonton, AB Canada

Greg Ballay

Allegheny Valley Hospital
Natrona Heights, PA

Michael Baptista

Local Union 342
Oakland, CA

Brannon Baxter

Local Union 72
South Bend, IN

Gregory Beck

Local Union 420
Philadelphia, PA

Casey Becker

Local Union 597
Chicago, IL

Donald "DJ" Berger

National Inspection Testing & Certification
New Orleans, LA

Jeffrey Berger

Local Union 322
Southern New Jersey

Charles Berra

Local Union 268
St. Louis, MO

Daniel Bliven

Local Union 7
Albany, NY

Jason Blondin

Local Union 136
Evansville, IN

Joseph Bonato

Local Union 597
Chicago, IL

Ralph Booth

Local Union 190
Ann Arbor, MI

William Boyd

Local Union 597
Chicago, IL

Jason Branch

Local Union 562
St. Louis, MO

Zachary Brawner

Local Union 440
Indianapolis, IN

Nicholas Brown

Local Union 502
Louisville, KY

David Bryant

Local Union 23
Rockford, IL

Vince Burrall

Local Union 486
Baltimore, MD

Daniel Butler

Local Union 469
Phoenix, AZ

Doreen Cannon

Local Union 55
Cleveland, OH

Thurmond Capps

Local Union 519
Miami, FL

Alfred Caron

Local Union 51
Providence, RI

Thomas Carrigan

Local Union 7
Albany, NY

Sean Cleary

Local Union 524
Scranton, PA

Michael Clinedinst

Local Union 486
Baltimore, MD

Jeff Collier

Local Union 469
Phoenix, AZ

Kevin Convy

Local Union 268
St. Louis, MO

Shaun Coomey

Local Union 157
Terre Haute, IN

Joseph Cooper

Local Union 286
Austin, TX

Craig Coyne

Coyne First Aid, Inc.
Sellersville, PA

Kathryn Crosby

C2 Consulting, Inc.
Salt Lake City, UT

Robert Cross

Local Union 68
Houston, TX

Brett Cutler

Local Union 420
Philadelphia, PA

Aaron Debolt

Local Union 81
Syracuse, NY

Raymond "Butch" Dee

Local Union 449
Pittsburgh, PA

Daniel Defew

Local Union 184
Paducah, KY

Paul Disque

Local Union 412
Albuquerque, NM

Raffi Elchemmas

MCAA
Washington, D.C.

Ellis Seankeoni

Local Union 230
San Diego, CA

Marcus Elmer

Copper Development
McLean, VA

Edwin Engel

Local Union 420
Philadelphia, PA

Fernando Espana

Construct X
California

Allan Fala

Local Union 189
Columbus, OH

Joseph Fernandez

Local Union 519
Miami, FL

Robert Finley

Local Union 1
New York, NY

Paul Fitzgerald

Local Union 354
Latrobe, PA

INSTRUCTIONAL FACULTY AND INDUSTRY REPRESENTATIVES

James Fogarty
Local Union 120
Cleveland, OH

Justin Forni
Local Union 412
Albuquerque, NM

Daniel Fortini
Local Union 1
New York, NY

Andrew "A.J." Fouts
Local Union 598
Pasco, WA

Steven Fox
Local Union 483
San Francisco, CA

John Franke
Local Union 533
Kansas City, MO

Joseph Franks
Local Union 542
Pittsburgh, PA

Jason French
Local Union 8
Kansas City, MO

Kevin Gaby
Local Union 370
Flint, MI

Rick Gale
Local Union 34
St. Paul, MN

Leroy Givens
Local Union 630
West Palm Beach, FL

Dale Glavin
Local Union 449
Pittsburgh, PA

Michael Gordon
Local Union 46
Toronto, ON, Canada

Charles Graham
Local Union 502
Louisville, KY

James Greer
Local Union 25
Rock Island, IL

Jack Grimm
Local Union 27
Pittsburgh, PA

Roland Gutierrez
Local Union 709
Los Angeles, CA

Scott Hamilton
American Society for Sanitary Engineering
Mokena, IL

Timothy Hammack
Local Union 15
Minneapolis, MN

Gregory Harle
Local Union 23
Rockford, IL

Heather Hawkins
Local Union 189
Columbus, OH

Donivan "Willie" Heiss
Local Union 168
Marietta, OH

Colton Henkowski
Local Union 208
Denver, CO

Matthew Hintz
Local Union 172
South Bend, IN

John Holmes
Local Union 709
Los Angeles, CA

John Hopkins
Local Union 393
San Jose, CA

Bradley Hopping
Local Union 417
Minneapolis, MN

Michael Howard
Local Union 353
Peoria, IL

Charles Hubler
Local Union 290
Portland, OR

Hamaas Ibrahim
Local Union 130
Chicago, IL

Edward Ingles
Local Union 577
Portsmouth, OH

James Ivey
Local Union 669
Columbia, MD

Alan Johnston
Hydratec Inc.
Windham, NH

John Jordan
Local Union 68
Houston, TX

Paul Kadlec
Local Union 597
Chicago, IL

Joseph Kajak
Local Union 630
West Palm Beach, FL

Michael Kardos
Local Union 449
Pittsburgh, PA

David Kealey
Local Union 25
Rock Island, IL

Charles Ketner
Local Union 669
Columbia, MD

Tim Kimbro
Local Union 286
Austin, TX

Andy Kireta
Copper Development
McLean, VA

Paul Kirk
Local Union 420
Philadelphia, PA

John Kjome
National Fire Protection Association
Quincy, MA

Gary Korn
Local Union 434
Central & Western, WI

Phil Kronberg
Local Union 598
Pasco, WA

Stan Kutin
Xylem Inc.
Rye Brook, NY

David Lavoie
Local Union 51
Providence, RI

Diana Lee
Local Union 601
Milwaukee, WI

Jonathan Lewis
Local Union 290
Portland, OR

Troy Locke
Viega, LLC

Ryan Lyle
Local Union 98
Detroit, MI

INSTRUCTIONAL FACULTY AND INDUSTRY REPRESENTATIVES

Michael MacDonnell
Local Union 550
Boston, MA

Gabriel Maestretti
Local Union 342
Oakland, CA

Matthew Majszak
Local Union 597
Chicago, IL

Richard Manley
Local Union 189
Columbus, OH

William Marable
Local Union 372
Tuscaloosa, AL

Brent Marchand
Local Union 15
Minneapolis, MN

Beau Massengale
Local Union 372
Tuscaloosa, AL

Trenton Mauk
Local Union 333
Lansing, MI

Ricky Maynard
Viega, LLC

Matthew McCreary
Local Union 353
Peoria, IL

Kevin McDonough
Local Union 562
St. Louis, MO

Francis McGrath
Local Union 420
Philadelphia, PA

Colin McHugh
Local Union 420
Philadelphia, PA

Timothy McQuiston
Local Union 449
Pittsburgh, PA

Robin Mikaelsson, PMP
AWP University
Calgary, AB, Canada

Derek Miles
Local Union 483
San Francisco, CA

Douglas Miller
Local Union 190
Ann Arbor, MI

Shawn "Kevin" Milligan
Local Union 562
St. Louis, MO

Dennis Molnar
Local Union 172
South Bend, IN

Gary Montemarano
Local Union 1
New York, NY

Harold Moret
Copper Development
McLean, VA

Sidney Morris
Local Union 68
Houston, TX

Philip Moss
Local Union 32
Seattle, WA

Daniel Mulligan
Local Union 597
Chicago, IL

Roy Musgrove
Local Union 190
Ann Arbor, MI

Rita Neiderheiser
Local Union 669
Columbia, MD

Jonathan Neu
Local Union 597
Chicago, IL

Jon Newbro
Local Union 250
Los Angeles, CA

Ren Nygren
APT Metrics
Westport, CT

Jason Orzut
ESCO Institute
Mount Prospect, IL

Curtis Ohlde
Local Union 533
Kansas City, KS

Eric Ortega
Local Union 208
Denver, CO

Stephen Parsons
Local Union 537
Boston, MA

Eric Posey
Local Union 440
Indianapolis, IN

Daniel Rademacher
Local Union 41
Butte, MT

Lynn Ramos
Local Union 597
Chicago, IL

Michael Raposa
Local Union 51
Providence, RI

Joshua Reagan
Local Union 440
Indianapolis, IN

Jacob Redden
Local Union 98
Detroit, MI

Tresa Reece
Local Union 50
Toledo, OH

Frank Reece
Local Union 50
Toledo, OH

Ryan Rickert
Local Union 281
Chicago, IL

Joel Roberts
Local Union 190
Ann Arbor, MI

Matthew Ruggles
Local Union 577
Portsmouth, OH

John Russell
Local Union 5
Washington, D.C.

Edward Sanchez
Local Union 412
Albuquerque, NM

Michael Schmidt
Local Union 597
Chicago, IL

Jason Shank
Local Union 55
Cleveland, OH

Robert Sherr
Local Union 24
Lodi, NJ

Gary Shimmel
Local Union 520
Harrisburg, PA

David Shue
Local Union 597
Chicago, IL

INSTRUCTIONAL FACULTY AND INDUSTRY REPRESENTATIVES

C.J. Schultz
Local Union 30
Billings, MT

Jeffrey Smith
Local Union 168
Marietta, OH

Duane Sommise
Local Union 234
Jacksonville, FL

Dr. Sally Spencer-Thomas
Conifer, CO

Paul Stout
Local Union 597
Chicago, IL

John Sullivan
Local Union 1
New York, NY

Roger Thein
Local Union 455
St. Paul, MN

Chad Thompson
Local Union 630
West Palm Beach, FL

Bradley Tisdale
Local Union 449
Pittsburgh, PA

Frederick Usher
Local Union 268
St. Louis, MO

Jaime Valdivia
Local Union 398
Pomona, CA

Dean Van Kirk
Local Union 469
Phoenix, AZ

Jeffrey Van Rhyn
Local Union 669
Columbia, MD

Amber Vasilenko
Local Union 68
Houston, TX

David Verna
Local Union 322
Southern New Jersey

Scott Wadford
Local Union 83
Wheeling, WV

Randy Wagner
Local Union 400
Appleton, WI

Willard "Dale" Walker
Local Union 495
Cambridge, OH

Richard Warner
Local Union 81
Syracuse, NY

Ryan L. Westbrook
Local Union 168
Marietta, OH

Joseph Whitlock
Local Union 234
Jacksonville, FL

Laurent Wickland
Local Union 455
St. Paul, MN

Brian Wilk
Local Union 130
Chicago, IL

James Wilson
Local Union 636
Detroit, MI

Jamie Winter
APT Metrics
Westport, CT

Woody Woodall
Local Union 602
Washington, D.C.

Daniel Worth
Local Union 208
Denver, CO

James Young
Local Union 495
Cambridge, OH

Ralph Young
Local Union 669
Columbia, MD

We gratefully acknowledge the participation of the following companies and organizations in the 2022 United Associated Instructor Training Program

ABB Cary, NC	Emerson Climate Technologies Brantford, ON, Canada	K&R Chantilly, VA	Sloan Flushmate New Hudson, MI
American Society of Sanitary Engineers (ASSE) Mokena, IL	EPRI Charlotte, NC	The ESCO Institute Mount Prospect, IL	Smith Equipment Watertown, SD
American Technical Publishing (ATP) Orland, IL	The ESAB Group, Inc. Denton, TX	The Kelly Companies Cheverly, MD	SysQue Rocklin, CA
American Welding Society Miami, FL	Faro Lake Mary, FL	Laars Rochester, NH	ThinkEDU Frisco, TX
Anvil International University Park, IL	Ferris State University Big Rapids, MI	Leica Geosystems Norcross, GA	TigerStop, LLC America Vancouver, WA
Applied Software Atlanta, GA	Fluke Engineering Everett, WA	Liburdi Dimetrics Davidson, NC	Topcon Livermore, CA
Aquasol Tonawanda, NY	Geberit North America Des Plaines, IL	Lincoln Electric Company Cleveland, OH	Triangle Engineering, Inc. Hanover, MA
Autodesk® San Rafael, CA	GEM Energy Walbridge, OH	McElroy Manufacturing Inc. Tulsa, OK	Trimble Sunnyvale, CA
Baltimore Aircoil Company Baltimore, MD	Georg Fischer Irvine, CA	Mechanical Contractors of America Rockville, MD	Tri-Tool Inc. Rancho Cordova, CA
Bemis Manufacturing Company Sheboygan Falls, WI	Gerber Chicago, IL	Miller Electric Manufacturing Company Appleton, WI	Union Sportsmen's Alliance Nashville, TN
Bradford White Water Heaters Ambler, PA	GTP Services Larkspur, CO	Milwaukee Tool Brookfield, WI	Urban Green Council New York, NY
C2 Consulting, Inc. Salt Lake City, UT	Green Mechanical Council Washington, D.C.	Mitsubishi Canada Mississauga, ON, Canada	Viega, LLC Broomfield, Colorado
CADLearning Bedford, NH	Harris Products Group Mason, OH	Mitsubishi USA Toledo, OH	U.S. Department of Energy National Training Center Albuquerque, NM
The Center for Construction Research and Training (CPWR) Silver Spring, MD	Hartford Steam Boiler Inspection and Insurance Company Hartford, CT	National Fire Sprinkler Association Patterson, NY	Victaulic Company Easton, PA
Copper Development Association, Inc. Harrisburg, PA	HVAC Excellence Mount Prospect, IL	NFS International Ann Arbor, MI	The Viking Corporation Hastings, MI
Coyne First Aid, Inc. Sellersville, PA	Hydratec, Inc. Windham, NH	NITC Los Angeles, CA	Weiler Corporation Cresco, PA
Daikin City Houston, TX	Hypertherm Hanover, NH	O'Donoghue & O'Donoghue LLP Washington, D.C.	Weil-McLain Burr Ridge, IL
Daikin North America Minneapolis, MN	HYTORC Mahwah, NJ	Olympus Waltham, MA	Western International Bellville, TX
Destination Ann Arbor Ann Arbor, MI	IAPMO Ontario, CA	Pentair Aurora Pump Aurora, IL	Xylem Inc. Morton Grove, IL
DeWalt Towson, MD	West Virginia University Institute for Labor Studies and Research Morgantown, WV	Quality Support Services, Inc. Mesa, AZ	
E.H. Wachs/Orbitalum Lincolnshire, IL	IrisVR New York, NY	Reliable Automatic Sprinkler Co. Elmsford, NY	
	John E. Green Company Highland Park, MI	Salter & Company Washington, D.C.	

ITP STAFF AND OFFICE LOCATIONS

DIRECTOR OF EDUCATION AND TRAINING Morris J. Lawrence Building, Room ML 130
(734) 677-5398

James Pavesic, *Director of Education and Training*
Raymond Boyd, *Assistant Director of Education and Training*
Suzanne Ellis, *Administrative Assistant*
Cindy Williams, *Administrative Assistant*

REGISTRAR'S OFFICE Morris J. Lawrence Building, Room ML 123
(734) 677-5390

Cathy Merkel, *Registrar*
Tyler Masengale, *Assistant Registrar*
Agatha Wolyn, *Curriculum Coordinator*

ITF OFFICE Morris J. Lawrence Building, Room ML 128
(734) 677-5394

Jocelyn Crowder, *Fund Administrator*
Carrie King, *Certification Manager*
Lauren Friedman, *Instructional Technology Coordinator*
Helen Holmboe, *Office Professional*

IPT-JTC BOOKSTORE Morris J. Lawrence Building, Room ML 103
(734) 677-5392

Dianne Lash, *General Manager/Webstore Administrator*
Darlene Lee, *Office Professional*
Peggy Jarrett, *Office Professional*

UA INFORMATION TECHNOLOGY Morris J. Lawrence Building, Room ML 123
(734) 677-5270

WCC-UA PROGRAM ADMINISTRATION Great Lakes Regional Training Center

Marilyn Donham, *Dean, Skilled Trades Training*
Anthony Esposito, *Technical Director of UA Programs and Services*
Kim Billings, *Logistics Director of UA Programs and Services*
Melissa Haverty, *Apprenticeships and Skilled Trades Training Programs Coordinator*
Nicole Jeup, *Service Member and Veteran Advisor*
Arista Metler, *Director of UA Distance Learning*
Kandi Jurek, *UA Program Manager – Student Services (WCC Associate Degree)*

STUDENT SERVICES/INFORMATION DESK Morris J. Lawrence Building, Lobby
(734) 477-8989

Patrick Downey, *Manager of Conference Services*

INTERNATIONAL APPRENTICE CONTEST COMMITTEE

Michael Galfano, *Training Specialist*
Patrick Faley, *Chairman*
 Clancy Kelly – Pipefitting
 Kelly Robinson – Welding
 Mark Mitchell – Plumbing
 Paul Baker – Plumbing
 Joe Mathews – Sprinkler Fitting
 Rick Wilson – HVACR

Destination Ann Arbor • Hospitality Hotline • 734-794-0649

To better serve you, Destination Ann Arbor provides a telephone hotline. A representative from Destination Ann Arbor is available to handle your dining, accommodation, and transportation concerns.

Simply call 734-794-0649 and leave your name, call back number, and time of call. A representative will contact you back to assist.

RECOMMENDED EMERGENCY CARE

Ann Arbor Urgent Care
1000 E. Stadium Blvd., Ste. 1
Ann Arbor, MI 48104
734-769-3333
Email: info@a2urgentcare.com
<http://www.a2urgentcare.com/>
Open 9am-10pm every day

South Huron Urgent Care Center
1649 S. Huron St.
Ypsilanti, MI 48197
734-480-0990
Email: info@shuonline.com
<https://shucypsilanti.com/>
Open 8am-8pm (M-F; 8am-6pm Sat-Sun)

St. Joseph Mercy Hospital
5301 E. Huron River Dr.
Ann Arbor, MI 48105
734-712-3456

Walgreen Pharmacy
3255 Washtenaw Ave.
Ann Arbor, MI 48104
Cross Streets: Northwest corner of Huron Parkway & Washtenaw
734-975-2902
Mon - Fri 9am - 9pm
Sat 9am - 6pm
Sun 10am - 6pm
Drive-thru service available*
*Pharmacy closed 1:30p - 2p for meal break

Dental Emergency
Robert Stevenson, DDS
828 W. Huron St.
Ann Arbor, MI 48103
<http://rjstevensondds.com/ann-arbor-emergency-dentists.php>
734-201-1610

Public Safety at WCC

Parking Structure - 4800 East Huron River Drive, Ann Arbor, Michigan

Telephone: 734-973-3411

The public safety office at WCC is located on the second floor of the Campus Parking Structure. Each emergency phone can dial 3411 to be connected to public safety personnel. After calling Public Safety, you must report the emergency to the ITF Office at 734-677-5398. If anyone off-campus needs to contact you for an emergency, please advise them to call 734-973-3411.

SERVICES PROVIDED

- Safety and Law Enforcement
- Security Escort
- Lost and Found
- Motorist Assists
- Medical Emergency First Response
- Key Issuance

MEDICAL EMERGENCY

If you encounter a medical emergency on campus:

- Call Public Safety immediately.
- Stay with the person.
- Do not move the person unless absolutely necessary.
- If he/she has stopped breathing do not attempt CPR unless you have been trained.
- Look for jewelry with an inscription indicating a medical condition.
- Never give anything to drink to an unconscious or semi-conscious person.
- Try to avoid getting blood or other bodily fluids on you.

AUTOMATED ELECTRICAL DEFIBRILLATOR (AED) LOCATIONS

ML Front Lobby Desk
OE102 Hallway
SC 2nd Floor Medical Room Hallway
TI122 Front Reception Area
GM 1st Floor Circulation Counter / 2nd Floor Computer Commons Counter
PO126 Entrance
LA 2nd Floor Hallway (across from 230)
BE182 Reception Area
GL 2nd Floor (across from offices)

FIRE

- Manually activate the fire alarm system.
- Immediately exit the building, closing doors behind you. (Do not use elevators)
- Call 911 or from campus phone call 3411.

FIRE EXTINGUISHERS

Reference Room Locator for specific locations.

TORNADO

- Stay away from doors and windows.
- Take a flashlight with you if one is available.
- Go to the ground floor of the building.
- Do not go outside until the all clear is given.

An interactive guide to all resources available for training.



e-RESOURCE TRAINING GUIDE



TO GET YOUR COPY TODAY VISIT WWW.UAOLR.ORG

UA MOBILE APP



INTERACTIVE CURRICULUM APP



Apple



Android



Scan the QR Code above for the UA's Mobile App and the Interactive Curriculum App Today!

The UA Mobile App can be downloaded by visiting your App Store or Google Play Store and searching for "United Association."

The Interactive Curriculum App can be downloaded by visiting your App Store or Google Play Store and searching for "Interactive Curriculum."

Click on the training button within the **UA MOBILE APP** to connect to these valuable resources:

- **Instructor Training Program**
 - Class Schedule
 - Student Course Schedule
 - Assistance
 - Campus Maps
 - Live Video
 - Brochure
 - Event Photos
 - Instructor Evaluations
- **Training Program Resources**
 - UAOLR
 - Regional Training Catalog
 - e-Resource Training Catalog
 - UA Bookstore
- **Recruitment**
 - Industry Career Videos
 - Parents/Counselors
 - Women of the UA
 - Veterans VIP Site
 - UA Apprenticeship Brochure
- UA Training News

The **INTERACTIVE CURRICULUM APP** is designed to provide teaching resources to UA instructors and UA students utilizing Augmented Reality (AR). The app takes pages of the textbooks and overlays augmented reality over live-view world using the camera on your phone or tablet. The AR appears as a 3D image.

Current UA Textbooks Utilizing Augmented Reality:

- Basic Electricity
- Drawing Interpretation and Plan Reading
- HVAC and Refrigeration Systems
- Hydronic Heating and Cooling
- Plumbing Services
- Pumps
- Soldering and Brazing
- Use and Care of Tools

Visit UAOLR.org to register and gain access to all instructional resources.

UA MOBILE APP

INTERACTIVE CURRICULUM APP



JOIN US!

**Saturday
August 13, 2022
12:30 p.m. to 2:30 p.m.
Business Education Bldg.
Room BE 160**

UA Women Instructors:

Join us for an informal meet and greet on registration day. This event will be an opportunity for you to meet and network with other women instructors from across the country.

Please come to connect and share your ITP week experience with other UA sisters!

Lunch will be provided. Please RSVP to Laura Ceja at lceja@uanet.org or call 310-403-3484 with any questions.

UA Women Instructors "Meet and Greet"





ROCK AROUND THE BLOCK

MONDAY, AUGUST 15, 2022 | 6 -10PM | MAIN STREET, DOWNTOWN ANN ARBOR



LIVE ENTERTAINMENT BY THE MILWAUKEE TOOL SHED BAND | DINING IN THE STREETS
10TH ANNUAL VA 5K RACE AND PUB CRAWL TO BENEFIT THE SEMPER FI FUND

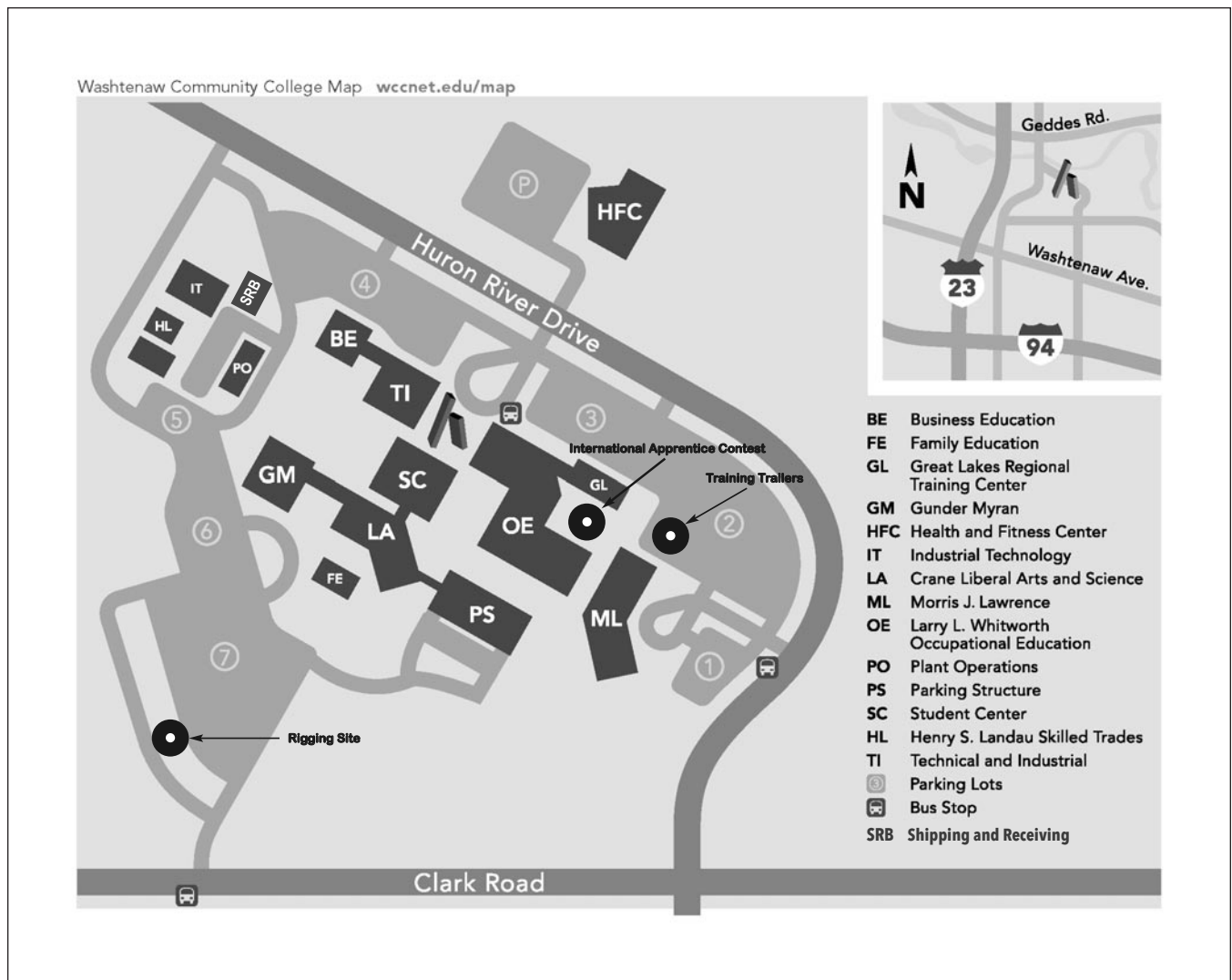


CAMPUS FOOD MAP



FOOD LOCATIONS AND MENU COMING SOON!

WCC CAMPUS MAP



**Washtenaw Community College
4800 East Huron River Drive
Ann Arbor, Michigan 48105**

**Washtenaw Community College
is a Smoke Free campus.
No smoking on campus grounds.**

The date for the 2023 Instructor Training Program is August 12-18, 2023.

