APITRN

WCC General Education Requirements
Effective Fall 2018

Associate degree programs were updated to meet the revised WCC general education requirements below.

Course Distribution Requirements

Associate degree students must complete courses from each of six General Education content areas. The requirements vary, depending on which degree is being earned. The number of general education credit hours required for each degree is as follows.

	AA	AS	AAS
Writing/Composition	3-4 credits	3-4 credits	3-4 credits
2nd Writing/Composition or Communication	3-4 credits	3 credits	3 credits
Mathematics	3-4 credits	3-4 credits	3-4 credits
Natural Sciences [1]	7-8 credits	7-8 credits	3-4 credits
Social & Behavioral Science [2]	6 credits	6 credits	3 credits
Arts and Humanities [3]	6 credits	6 credits	3 credits
General Education Electives to reach 30 credits	0-2 credits	0-2 credits	N/A
Minimum	30 credits	30 credits	18 credits

[1] Two courses in Natural Science including one with laboratory experience (from two disciplines)
[2] From two disciplines
[3] From two disciplines

Program Information Report

School of Apprenticeship and Occupational Studies

Find a trade-related associate's degree program that builds on your professional abilities while giving you the knowledge and skills needed to move into organizational leadership.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

The next level, an Associate in Applied Science, is available for some programs.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate and General Education requirements.

Articulated Union Building Trade Apprenticeship Programs

These programs are restricted to members of approved union building trade apprenticeship programs, including United Association (UA).

Industrial Training (APITRN)

Associate in Applied Science Degree

Program Effective Term: Fall 2018

High Demand Occupation High Skill Occupation High Wage Occupation

Program is also available online

This program gives indentured journeymen of the United Association or Ironworkers, the opportunity to apply their work as certified apprentice instructors toward an associate in applied science degree in Industrial Training. Students will complete the general education courses, five summer instructor training sessions, and receive prior learning credits for experience in an area of specialization such as plumbing, pipefitting, HVAC, sprinkler fitting and ironworking.

Articulation:
Eastern Michigan University, several BS degrees

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/curriculum/articulation/levelone/colleges/.

Program Admission Requirements:
Open only to United Association and Ironworker instructors.

Major/Area Requirements		(22 credits)
	UA students must complete 12-15 additional credits from a combination of required teaching methods courses and technical update courses (UAT courses).	12
	Ironworker students must complete 15 credits from a combination of required teaching methods courses and technical update courses (IWT courses).	
	Complete electives (0-10 credits) to meet a minimum 60 credits.	10

General Education Requirements		(19 credits)
Writing	Elective(s)	4
UAT 210	Public Speaking*	1.5
UAT 213	Planning and Presenting Lessons*	1.5
Math	Elective(s)**	3
Nat. Sci.	Elective(s)**	3
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

**Students may choose any WCC courses that meet the speech requirement. Only applies to UA programs.*
***APP 113 Math for Pipe Trades and SCI 102 Applied Science are included in UA specializations.*

Minimum Option Credits Required for the Program: **22**
Complete a specialization in plumbing, pipefitting, HVAC, sprinkler fitting or ironworking. Students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet this requirement.

Industrial Training Options

Architectural and Ornamental Ironworker (AOIW)		(19 credits)
IWA 120	Introduction to Ironwork	3

Program Information Report

IWA 122	Ironworker - General Rigging	2
IWA 131	Introduction to Metal Building	2
IWA 161	Introduction to Architectural and Ornamental Ironwork	2
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1
IWA 265	Advanced Architectural and Ornamental Ironwork	6

HVAC Specialty (HVTC)		(26 credits)
UAE 140	Introduction to HVACR Service Technician Practices	3
UAE 142	Soldering and Brazing	3
UAE 144	Refrigeration	2
UAE 146	Air Conditioning	2
UAE 148	Electrical Controls	2
UAE 150	DC Electronics	2
UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
UAE 154	Advanced Air Conditioning and Refrigeration	3
UAE 156	Air and Water Balancing and Motor Alignment	3
UAE 158	Advanced HVACR Practices	3

Journeyman Ironworker (JMIW)		(26 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2
IWA 131	Introduction to Metal Building	2
IWA 141	Introduction to Reinforcing Ironwork	3
IWA 155	Rigging/Machinery Mover II	3
IWA 161	Introduction to Architectural and Ornamental Ironwork	2
IWA 172	Introduction to Structural Features	4
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1
IWA 272	Advanced Structural Features	3

Metal Building Erector (MTBE)		(19 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2
IWA 131	Introduction to Metal Building	2
IWA 161	Introduction to Architectural and Ornamental Ironwork	2
IWA 172	Introduction to Structural Features	4
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1
IWA 235	Advanced Metal Building	2

Pipefitter Specialty (PIPE)		(26 credits)
UAF 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAF 120	Introduction to Pipefitter Practices	3
UAF 122	Drawing Interpretation and Plan Reading	2
UAF 124	Oxy Fuel Cutting and Shielded Arc Welding	2
UAF 126	Hydronic Heating and Steam Systems	2
UAF 128	Refrigeration and Electrical Controls	2
UAF 130	Advanced SMAW Welding	3
UAF 132	Advanced Pipefitter Topics	3
UAF 134	Controls and Instrumentation	3
UAF 136	GTAW Welding	3

Plumber Specialty (PLUM)		(26 credits)
UAP 100	Introduction to Plumbing Practices	3
UAP 102	Introduction to Arc Welding, Soldering and Brazing	3
UAP 104	Drawing Interpretation and Plan Reading	2
UAP 106	Oxy Fuel Cutting and Shielded Arc Welding	2
UAP 108	Water Supply and Drainage	2
UAP 110	Customer Service Techniques	2
UAP 112	Plumbing Fixtures and Appliances	3
UAP 114	Plumbing Codes and Regulations	3
UAP 116	Medical Gas and Backflow Prevention Techniques	3
UAP 118	Advanced Plumbing Practices	3

Program Information Report

Reinforcing Ironworker (REIW)		(19 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2
IWA 141	Introduction to Reinforcing Ironwork	3
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1
IWA 241	Advanced Reinforcing Ironwork	7

Rigger/Machinery Mover (RGMM)		(19 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2
IWA 151	Rigging/Machinery Mover I	3
IWA 155	Rigging/Machinery Mover II	3
IWA 191	Reinforced Iron and Structures for Rigging	4
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1

Sprinkler Fitter Specialty (SPRF)		(26 credits)
UAR 160	Introduction to Sprinkler Fitter Practices	3
UAR 162	Basic Drawing and Introduction to Automatic Sprinklers	3
UAR 164	Reading Automatic Sprinkler Piping Drawings	2
UAR 166	Installation of Sprinkler Systems	2
UAR 168	Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters	2
UAR 170	Sprinkler Water Supply and The Automatic Sprinkler	2
UAR 172	Types of Fire Protection Systems and Alarms	3
UAR 174	Special Application Sprinkler Systems and Hydraulics	3
UAR 176	Human Relations	3
UAR 178	Technical Writing	3

Trade Related Elective Credits (TRI)		(19 credits)
	TRI Trade Related Elective Credits	19-26

Minimum Credits Required for the Program: **63**

Done 1/22/18

WASHTENAW COMMUNITY COLLEGE
GENERAL EDUCATION REVISION AAS PROGRAM CHANGE FORM 2018-2019

Program Code: APITRN	**Program Name:** Industrial Training
Division Code: ATP	**Department:** UA

This form is to be used only for General Education Revision Program Changes for Associate in Applied Science (AAS) programs. Any other program changes should be submitted separately using a standard Program Change Form.

Directions:

1. Review each general education area under **Requested Changes** below and respond as needed.
2. Attach the semester program layout showing the current program listing from the WCC catalog.
   a. Indicate any changes to be made on the semester layout.
   b. Draw a line through any courses that should be removed on the semester layout.
   c. Write in any courses that need to be added on the semester layout.
3. Submit this form and semester program layout to the Office of Curriculum and Assessment (SC 257).

Current General Education Requirements AAS	
Writing	3-4 credits
Speech	3 credits
Mathematics	3 - 4 credits
Natural Sciences	3 - 4 credits
Social & Behavioral Sciences	3 credits
Arts & Humanities	3 credits
Critical Thinking	0 credits
Computer & Information Literacy	3 credits
Total	21-24 credits

Revised General Education Requirements 2018-2019 AAS	
English Composition	3 - 4 credits
2nd Course in English Composition or one course in Communication	3 - 4 credits
Mathematics	3 - 4 credits
Natural Sciences	3 - 5 credits
Social & Behavioral Sciences	3 credits
Arts & Humanities from	3 credits
Total	18 credits

Please review each General Education Area in the chart below, and record the needed changes in the chart and on the attached semester program layout.

	REQUESTED CHANGES
	General Education Area
	English Composition – The requirement for one writing/English composition course remains the same. No changes will be made unless specifically requested below. (Use Writing Elective or ENG 111)
	Optional Change:
	2nd Course in English Composition or one course in Communication WCC previously required both a second composition/writing course and a communication course. Your options are: 1. Allow students to select any course that meets composition/writing or communication (*recommended*). 2. Require students to take a specific composition course (identify course below and on semester layout). 3. Require students to take a specific communication course (identify course below and on semester layout).
	Requested Change:

	Mathematics – The requirement for one mathematics course remains the same. However, the courses that meet the MTA requirement have changed slightly. See the course listing for details
	Optional Change:
	Natural Sciences - The requirement for one natural science course remains the same. No changes will be made unless specifically requested below.
	Optional Change:
	Social & Behavioral Sciences – The requirement for one social and behavioral science course remains the same. No changes will be made unless specifically requested below.
	Optional Change:
	Arts & Humanities – The requirement for one arts and humanities course remains the same. No changes will be made unless specifically requested below. (Note: A department can designate a COM course as a requirement here. The same course cannot be counted in two areas.)
	Optional Change:
	Computer and Information Literacy The requirement for computer and information literacy has been removed. Your options are: 1. Continue to require a specific computer course. If a specific course is required in your program, we will leave it there. If you previously used "Computer and Information Literacy Course," you will need to specify either a specific course or a list of courses from which to choose. 2. Remove the computer and information literacy course if the program will still meet the minimum of 60 credit hours. 3. Remove the computer and information literacy course and replace the course with elective or other credits as needed to meet the minimum of 60 credit hours.
	Required Change:

Reviewer	Print Name	Signature	Date
Initiator			
Department Chair			
Division Dean/ Administrator			
Vice President for Instruction	Kimberly Hurns		1/9/18

Office use only

Entered in: ☒ Banner 1/22/18 ☒ C&A Database 1/22/18 ☐ Log File

WASHTENAW COMMUNITY COLLEGE

PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: ~~ASINDT~~/APITRN

Program Name: Industrial Training

Effective Term: ~~201189~~ 201209

Division Code: Voc. Tech.

Department: United Association

Directions:

1. Attach the current program listing from the WCC catalog or Web site and indicate any changes to be made.
2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.
3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Review
- ☐ Remove course(s): _____
- ☒ Add course(s): Add Ironworker Instructor Classes for Major and apprenticeship credits
- ☐ Program title (title was _____)
- ☒ Description
- ☐ Type of award
- ☐ Advisors
- ☐ Articulation information
- ☒ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes
- ☐ Accreditation information
- ☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- ☐ Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes or discontinuation:

Ironworker Instructor Training students will be eligible for this degree. This program is similar to the UA Instructor Training Program in structure and content. Students will be required to take 5 professional level teaching courses and 5 training electives to complete their teaching certificate with the Ironworkers. Students can then complete their degree by taking their general education requirements and having served a 3 or 4 year apprenticeship with the Ironworkers. (See attachment for specific program changes.)

Financial/staffing/equipment/space implications:

None. Current staffing will handle these students.

List departments that have been consulted regarding their use of this program.

UA and Apprentice Studies

Signatures:

Reviewer	Print Name	Signature	Date
Initiator	Mike Griffith	Mike Griffith	2-7-12
Department Chair	Scott Klapper	Scott Klapper	2-7-12
Division Dean/Administrator	Mary Doud	Mary Doud	2-7-12
Vice President for Instruction	Stuart Blacklaw	Stuart Blacklaw	3/12/12
President			

Do not write in shaded area. Entered in: Banner_____ C&A Database 4/23 **Log File** 4/23/12 **Board Approval** _____

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to sjohn@wccnet.edu for posting on the website.

logged 2/8/12 sj ✓

for done

Program Information Report

School of Apprenticeship and Occupational Studies

Find a trade-related associate's degree program that builds on your unique set of skills while giving you the knowledge and skills needed to move into organizational leadership.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs. The next level, an Associate in Applied Science, is available for some programs.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate and General Education requirements.

United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada

These programs are restricted to members of the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada.

Industrial Training (APITRN)

Associate in Applied Science Degree

Program Effective Term: Fall 2012

This program gives indentured journeymen of the United Association or Ironworkers, the opportunity to apply their work as certified apprentice instructors toward an associate in applied science degree in Industrial Training. Students will complete the general education courses, five summer instructor training sessions, and receive non-traditional credits for experience in an area of specialization such as plumbing, pipefitting, HVAC, sprinkler fitting and ironworking.

Articulation:
Eastern Michigan University, several BS degrees;
National Labor College, Bachelor degree.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges.

Program Admission Requirements:
Open only to United Association and Ironworker instructors.

Writing	Elective(s)	4
UAT 210	Public Speaking*	1.5
UAT 213	Planning and Presenting Lessons*	1.5
Math	Elective(s)**	3
Nat. Sci.	Elective(s)**	3
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3
Computer Lit.	Elective(s)	3

**Students may choose any WCC courses that meet the speech requirement. Only applies to UA programs.*
***APP 133 Math for Pipe Trades and SCI 102 Applied Science are included in UA specializations.*

	UA students must complete 12-15 additional credits from a combination of required teaching methods courses and technical update courses (UAT courses). Ironworker students must complete 15 credits from a combination of required teaching methods courses and technical update courses (IWT courses).	12-15
	Complete electives (0-7 credits) to meet a minimum of 60 credits.	7

Minimum Option Credits Required for the Program: **19**
Complete a specialization in plumbing, pipefitting, HVAC, prinkler fitting or ironworking. Students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet this requirement.

Industrial Training Options

Architectural and Ornamental Ironworker (AOIW)		(19 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2

Program Information Report

IWA 131	Introduction to Metal Building	2
IWA 161	Introduction to Architectural and Ornamental Ironwork	2
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1
IWA 265	Advanced Architectural and Ornamental Ironwork	6

HVAC Specialty (HVTC)		(26 credits)
UAE 140	Introduction to HVACR Service Technician Practices	3
UAE 142	Soldering and Brazing	3
UAE 144	Refrigeration	2
UAE 146	Air Conditioning	2
UAE 148	Electrical Controls	2
UAE 150	DC Electronics	2
UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
UAE 154	Advanced Air Conditioning and Refrigeration	3
UAE 156	Air and Water Balancing and Motor Alignment	3
UAE 158	Advanced HVACR Practices	3

Journeyman Ironworker (JMIW)		(26 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2
IWA 131	Introduction to Metal Building	2
IWA 141	Introduction to Reinforcing Ironwork	3
IWA 155	Rigging/Machinery Mover II	3
IWA 161	Introduction to Architectural and Ornamental Ironwork	2
IWA 172	Introduction to Structural Features	4
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1
IWA 272	Advanced Structural Features	3

Metal Building Erector (MTBE)		(19 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2
IWA 131	Introduction to Metal Building	2
IWA 161	Introduction to Architectural and Ornamental Ironwork	2
IWA 172	Introduction to Structural Features	4
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1
IWA 235	Advanced Metal Building	2

Pipefitter Specialty (PIPE)		(26 credits)
UAF 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAF 120	Introduction to Pipefitter Practices	3
UAF 122	Drawing Interpretation and Plan Reading	2
UAF 124	Oxy Fuel Cutting and Shielded Arc Welding	2
UAF 126	Hydronic Heating and Steam Systems	2
UAF 128	Refrigeration and Electrical Controls	2
UAF 130	Advanced SMAW Welding	3
UAF 132	Advanced Pipefitter Topics	3
UAF 134	Controls and Instrumentation	3
UAF 136	GTAW Welding	3

Plumber Specialty (PLUM)		(26 credits)
UAP 100	Introduction to Plumbing Practices	3
UAP 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAP 104	Drawing Interpretation and Plan Reading	2
UAP 106	Oxy Fuel Cutting and Shielded Arc Welding	2
UAP 108	Water Supply and Drainage	2
UAP 110	Customer Service Techniques	2
UAP 112	Plumbing Fixtures and Appliances	3
UAP 114	Plumbing Codes and Regulations	3
UAP 116	Medical Gas and Backflow Prevention Techniques	3
UAP 118	Advanced Plumbing Practices	3

Program Information Report

Reinforcing Ironworker (REIW)		(19 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2
IWA 141	Introduction to Reinforcing Ironwork	3
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1
IWA 241	Advanced Reinforcing Ironwork	7

Rigger/Machinery Mover (RGMM)		(19 credits)
IWA 120	Introduction to Ironwork	3
IWA 122	Ironworker - General Rigging	2
IWA 151	Rigging/Machinery Mover I	3
IWA 155	Rigging/Machinery Mover II	3
IWA 191	Reinforced Iron and Structures for Rigging	4
IWA 201	Introduction to Welding	3
IWA 224	Labor and Trade History	1

Sprinkler Fitter Specialty (SPRF)		(26 credits)
UAR 160	Introduction to Sprinkler Fitter Practices	3
UAR 162	Basic Drawing and Introduction to Automatic Sprinklers	3
UAR 164	Reading Automatic Sprinkler Piping Drawings	2
UAR 166	Installation of Sprinkler Systems	2
UAR 168	Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters	2
UAR 170	Sprinkler Water Supply and The Automatic Sprinkler	2
UAR 172	Types of Fire Protection Systems and Alarms	3
UAR 174	Special Application Sprinkler Systems and Hydraulics	3
UAR 176	Human Relations	3
UAR 178	Technical Writing	3

Trade Related Elective Credits (TRI)		(19 credits)
	TRI Trade Related Elective Credits	19-26

Minimum Credits Required for the Program: **60**

PROGRAM CHANGE FORM

WASHTENAW COMMUNITY COLLEGE

Program Code:	Program Name:	Effective Term:
APITRN	Industrial Training (AAS)	200509

Directions:

1. Attach the current program listing from the WCC catalog and indicate any changes to be made.
2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.
3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

Requested Changes:

- ☐ Remove _____ course(s)
- ☒ Add ~~UAT~~ course(s) 161, 171, 201, 202, 203, 204, 205
- ☒ Total program credits: Current credits 63 After changes 60
- ☐ Program Title (title was _____)
- ☐ Description
- ☐ Type of award
- ☐ Advisors
- ☐ Articulation information
- ☐ Program admission requirements
- ☐ Continuing eligibility requirements
- ☐ Program outcomes

Other _____

Show all changes on the attached page from the catalog.

Rationale for proposed changes:

To update inccorect information and add specialization breakdowns.

Financial/staffing/equipment/space implications:

None

List departments that have been consulted regarding their use of this program.

UA Programs and Services

Signatures:

Reviewer	Print Name	Signature	Date
Program Change Initiator	Mike Griffith		3/23/05
Department Chair	Daniel Welch	D. Welch	3/23/05
Division Dean/Administrator			
Vice President of Instruction	Roger Paluy	Roger M. Paluy	4/28/05

Please submit completed form to the Office of Curriculum and Assessment.

Access Program File 4/28 Log 4/28 JMW Copied and Returned _____

United Association

Industrial Training (APITRN)
Associate in Applied Science Degree

'UNDER CONSTRUCTION'

Program Effective Term: Fall 2005

This program gives indentured apprentices and journeymen of the United Association of Plumbers and Pipefitters the opportunity to apply their work as certified apprentice instructors toward an associate's degree in Industrial Training. In addition to credits awarded for completion of five summer apprentice training sessions, students will complete the general education courses, and receive non-traditional credits for experience in an area of specialization such as plumbing, pipefitting, HVAC, or sprinkler fitting.

Program Admission Requirements:
Open only to United Association of Plumbers Apprentices/Journeymen

Continuing Eligibility Requirements:
Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (18 credits)

Writing	Elective(s)	3-4
Speech	Elective(s)	3
APP 113 *	Math and Science for Plumbers and Pipefitters	3
SCI 102 *	Applied Science	3
Soc. Sci.	Elective(s)	3
Arts/Human.	Elective(s)	3

**The math and science course are required as part of the specialization.*

Major/Area Requirements (15 credits)

	Students must complete 15 credits from the following: UAT 111, UAT 121, UAT 131, UAT 141, UAT 151, UAT 161, UAT 171, UAT 201, UAT 202, UAT 203, UAT 204, UAT 205	15

Minimum Concentration/Option Credits Required for the Program: 26

Complete a specialization in plumbing, pipefitting, HVAC, or sprinkler fitting. Students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the specialization requirement.

Minimum Credits Required for the Program 59

Industrial Training Options

HVAC Specialty (HVTC) (26 Credits)

UAE 140	Introduction to HVACR Service	3
UAE 142	Soldering and Brazing	3
UAE 144	Refrigeration	2
UAE 146	Air Conditioning	2
UAE 148	Electrical Controls	2
UAE 150	DC Electronics	2
UAE 152	Advanced Electrical Controls and Pneumatic Controls	3
UAE 154	Advanced Air Conditioning and Refrigeration	3
UAE 156	Air and Water Balancing and Motor Alignment	3
UAE 158	Advanced HVACR Practices	3

Pipefitter Specialty (PIPE) (26 Credits)

UAF 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAF 120	Introduction to Pipefitter Practices	3
UAF 122	Drawing Interpretation and Plan Reading	2
UAF 124	Oxy Fuel Cutting and Shielded Arc Welding	2
UAF 126	Hydronic Heating and Steam Systems	2
UAF 128	Refrigeration and Electrical Controls	2
UAF 130	Advanced SMAW Welding	3
UAF 132	Advanced Pipefitter Topics	3
UAF 134	Controls and Instrumentation	3
UAF 136	GTAW Welding	3

Plumber Specialty (PLUM) (26 Credits)

UAP 100	Introduction to Plumbing Practices	3
UAP 102	Introduction to Arc Welding, Soldering, and Brazing	3
UAP 104	Drawing Interpretation and Plan Reading	2
UAP 106	Oxy Fuel Cutting and Shielded Arc Welding	2
UAP 108	Water Supply and Drainage	2
UAP 110	Customer Service Techniques	2
UAP 112	Plumbing Fixtures and Appliances	3
UAP 114	Plumbing Codes and Regulations	3
UAP 116	Medical Gas and Backflow Prevention Techniques	3
UAP 118	Advanced Plumbing Practices	3

Sprinkler Fitter Specialty (SPRF) (26 Credits)

UAR 160	Introduction to Sprinkler Fitter Practices	3
UAR 162	Basic Drawing and Introduction to Automatic Sprinklers	3
UAR 164	Reading Automatic Sprinkler Piping Drawings	2
UAR 166	Installation of Sprinkler Systems	2
UAR 168	Architectural Working Drawings and Blueprint Reading for Sprinkler Fitters	2
UAR 170	Sprinkler Water Supply and The Automatic Sprinkler	2
UAR 172	Types of Fire Protection Systems and Alarms	3
UAR 174	Special Application Sprinkler Systems and Hydraulics	3
UAR 176	Human Relations	3
UAR 178	Technical Writing	3

Washtenaw Community College

Office of Curriculum & Articulation Services

PROGRAM CHANGE FORM

Program Code: **Program Name:** APCNSP AND APITRN **Effective Term:** 200309

Directions: 1.) Attach the current program listing from the WCC catalog and indicate any changes that you would like to make.

2.) Draw lines through anything that should be deleted and write in additions. Extensive narrative changes may be included on a separate sheet.

3.) Check the boxes below for each type of change being proposed. If you are making changes to courses or proposing new courses as part of this proposal, they must be approved separately using a Course-Syllabus Approval Form (CSAF). Courses that are being discontinued also should be submitted on CSAF forms.

1. Requested Changes:

- ☐ Remove _____ Course(s)
- ☐ Add _____ Course(s)
- ☐ Total Credits: Current Credits_____ After Changes _____
- ☐ Change Course Semester Sequencing
- ☐ Change Title (title was _____)
- ☐ Description
- ☑ Advisors
- ☐ Articulation Information
- ☐ Program Admission Requirements
- ☐ Continuing Eligibility Requirements
- ☐ Footnotes
- ☐ Other _____

Show all changes on the attached program sheet.

2. Rationale for Proposed Changes:

REMOVE ROGER BERTOIA AND PATRICIA CRIDER FROM THE LIST OF ADVISORS FOR APCNSP AND APITRN. ADD DAN WELCH AND MICHAEL GRIFFITH.

3. Financial/Staffing/Equipment/Space Implications:

4. Has the department consulted with all departments that may be impacted? Yes ☐ No ☐ NA ☐

Comments:

**REMINDER: Please include the current program sheet with all changes listed.

Signatures:

Reviewer	Print Name	Signature	Date
Program Change Initiator:	MICHAEL GRIFFITH	Michael Griffith	2-12-03
Department Chair:	Dan Welch	Dan Welch	2/13/03
Division Dean/Administrator:			
Executive Vice President, Instruction	Roger M. Pacay	Roger M. Pacay	2/17/03

Processed...

Please submit completed form to the Office of Curriculum and Articulation Services.

Access Program File 2/19/03 Log 2/19/03 Copied and Returned _____

Copies: Initiator, Department Chair, Dean, Curriculum Files

New Listing to: Counseling; Admissions, Student Records

Business

Construction Supervision (APCNSP)

'UNDER CONSTRUCTION'

Associate in Applied Science Degree

Program Effective Term: Fall 2003

This program gives indentured apprentices and journeypersons of the United Association of Plumbers and Pipefitters the opportunity to apply their work in a trade specialty toward an associate's degree in Construction Supervision. In addition to four courses in Construction Supervision, students will complete general education courses and receive non-traditional credit for their work experience in an area of specialization such as plumbing, pipefitting, HVAC, or sprinklerfitting.

Health and Applied Technologies Division
Technical Education Department

Advisors: Michael Griffith, Dan Welch

Program Admission Requirements:
Open only to United Association of Plumbers Apprentices/Journeymen

Continuing Eligibility Requirements:
Students must demonstrate basic computer literacy skills by successfully passing the Computer and Information Literacy Test. The test may be taken at any point during the program, but must be completed before graduating.

General Education Requirements (18 Credits)

Elective *	Complete one course from Group I of each of the six General Education Areas	18-20

Major/Area Requirements (45 Credits)

UAS 111	Introduction to Construction Supervision I	3
UAS 122	Construction Supervision II	3
UAS 211	Construction Supervision III	3
UAS 222	Project Management in the Construction Industry	3
UAS 226	Legal Aspects of Construction	3
Elective **	Complete a specialization in plumbing, pipefitting, HVAC, or sprinklerfitting	30

Minimum Credits Required for the Program: **63**

Footnotes:
**Credit for general education courses may be transferred from accredited colleges or universities in the United States*

***Students should apply for non-traditional credit evaluation of their apprenticeship experiences to meet the specialization requirement.*

Program Approval Document

Associate Degree
In

INDUSTRIAL TRAINING

Prepared by

Roger R. Bertoia

Washtenaw Community College
January 2000

WASHTENAW COMMUNITY COLLEGE
PROGRAM AUTHORIZATION FORM

1. **Program Title:** Industrial Training — **Program Code:** ITRN
2. **Division:** TECH — **3. Department:** U.A. — **CIP Code:**
4. **Type of Program:** ☐ **A.A.** ☒ A.S. ☐ A.A.S. ☐ A.T.S.
   ☐ Advanced Certificate ☐ Mastery Certificate ☐ Achievement Certificate ☐ Certificate of Completion
5. **Will this program be Perkins funded?** ☒ **yes** ☐ **no** — **6. Effective Year:** Jan 2000

7. Program Description (for Catalog, brochures, etc.:
This program is to provide indentured apprentices and journeypersons of the United Association recognition of their work as certified apprentice instructors and the opportunity to add additional general coursework and achieve associate degree status.

8. Advisors: Les Pierce and Patricia Stegall

9. Admissions Criteria:	**10. Criteria for Continuing Program Eligibility:**
Enrolled in the UA Apprentice Instructor Certification Program.	Continuing successful progress in the Certification program of the UA.

11. Attach a Program Approval Document [PAD], which includes the following:
A. Program Description
B. Program Goals
C. Needs Assessment
D. Enrollment Projections
E. Program Cost Analysis
F. Course Descriptions
G. Analysis of Affected Instructional Units
H. Articulations
I. Licensure/Accreditation

Approval Recommended:	**Print Name**	**Signature**	**Date**
Program Initiator:	Roger R. Bertoia		
Dept. Chair/Dir.:			
Dean/Admin.:	Roger R. Bertoia		
VP, Instr/Stud Ser:	Guy Altieri		
President:	Larry Whitworth		

Date of Board Approval: _____

Available on disk

COURSE REQUIREMENTS FOR PROGRAM

Course	Title Associate Degree-Industrial Training	Credit	Pre-requisites/Co-requisites
	General Courses		
	ENG 111 Composition I	4	
	COM 101 Fundamentals of Speaking	3	
	MTH 178 General Trigonometry	3	
	PSY 100 Introductory Psychology	3	
	CIS 100 Introduction to Computers	3	
	Social Science OR Humanities Elective	3-4	
		19-20 credits	
	Program Specialty Courses		
	*Completion of a specialization in Plumbing, Pipefitting, Heating-Ventilating-Air-Conditioning or Sprinklerfitting	30 credits	
	UAED 111 Intro to Apprentice Training I	3	
	UAED 121 ApprenticeTraining II	3	
	UAED 131 Apprentice Training III	3	
	UAED 141 Apprentice Training IV	3	
	UAED 151 Apprentice Training V	3	
		15 credits	
	TOTAL	64-65 credits	
	Minimum Credits Required:		

A. PROGRAM DESCRIPTION

This program is to provide indentured apprentices and journeypersons of the United Association recognition of their work as certified apprentice instructors and the opportunity to add additional general coursework and achieve degree status.

B. PROGRAM GOALS

To recognize journey status in participation in the United Association Instructor Training Program as the steps toward formal recognition of an Associate Degree in Industrial Training.

C. NEEDS ASSESSMENT

1. Employment Outlook
   The program will be available to 330,000 members (apprentices and journeymen) of the United Association.

D. ENROLLMENT PROJECTIONS

1. Estimated Number of Students per Year
   3,000 to 4,000 students

E. PROGRAM COST ANALYSIS

1. One records clerk

F. COURSE DESCRIPTIONS

See attached

G. ANALYSIS OF AFFECTED INSTRUCTIONAL UNITS AND CORE CURRICULUM

A new discipline code – UAED – to be created

H. ARTICULATIONS

I. LICENSURE/ACCREDITATION (IF APPLICABLE)

***Specialization – Plumbing Technology**

UAAP 111 – Related Trade Instruction I 6 credits

This course is designed to emphasize the knowledge necessary to succeed as a 1st year apprentice. The course will focus on instruction in the safe, efficient use and care of tools; identification and installation requirements for various types of pipe, fittings, valves, hangers, support and fasteners; jobsite safety; soldering and brazing; basic mathematical concepts as they apply to the pipe trades; oxy-acetylene torch operation; basic rigging techniques and the ability to understand technical and isometric drawings. (235 contact hours) (45 lecture – 190 lab)

UAAP 121 – Related Trade Instruction II 6 credits

This course is designed to emphasize the knowledge necessary to succeed as a 2nd year apprentice. The course will focus on an introduction to science as it relates to the piping industry, the ability to understand building plans and specifications; basic electricity as it applies to piping installation and instruction in shielded metal arc welding.
(245 contact hours) (55 lecture – 190 lab)

UAAP 131 – Related Plumbing Instruction I 6 credits

This course will provide the apprentice with the knowledge and skills necessary: to install a complete potable water system; to install a complete sanitary, stormwater, vacuum and graywater drainage system and the servicing and repairing of these systems. Advanced, related mathematics is focused on.
(245 contact hours) (55 lecture – 190 lab)

UAAP 141 – Related Plumbing Instruction II 6 credits

This course will provide the apprentice with instruction in the types of plumbing fixtures and their installation; installation of natural and LP gas systems; principles and requirements of local codes; advanced plan reading and a background in the field of service work, stressing special installations, human relations, salesmanship and planning.
(245 contact hours) (55 lecture – 190 lab)

UAAP 151 – Related Plumbing Instruction III 6 credits

This course will provide the apprentice with: skills in advanced drawing and coordination, sketching and sleeve drawings; instruction in the use of instruments for piping system layout; the understanding of medical gas systems and the instruction required to be certified as a brazer/installer; the understanding of backflow prevention, cross-connection control and the training to be a certified installer/tester, and inspections technician and the ability to design and install the three fixture plumbing test module. This course will provide specialized instruction in computer operation, CAD, high-purity piping and leadership. (245 contact hours) (55 Lecture – 190 Lab)

***Specialization – Pipefitting Technology**

UAAP 111 – Related Trade Instruction I 6 credits
This course is designed to emphasize the knowledge necessary to succeed as a 1st year apprentice. The course will focus on instruction in the safe, efficient use and care of tools; identification and installation requirements for various types of pipe, fittings, valves, hangers, support and fasteners; jobsite safety; soldering and brazing; basic mathematical concepts as they apply to the pipe trades; oxy-acetylene torch operation; basic rigging techniques and the ability to understand technical and isometric drawings. (235 contact hours) (45 lecture – 190 lab)

UAAP 121 – Related Trade Instruction II 6 credits
This course is designed to emphasize the knowledge necessary to succeed as a 2nd year apprentice. The course will focus on an introduction to science as it relates to the piping industry, the ability to understand building plans and specifications; basic electricity as it applies to piping installation and instruction in shielded metal arc welding.
(245 contact hours) (55 lecture – 190 lab)

UAAP 132 – Related Pipefitting Instruction I 6 credits
This course will provide the apprentice with: advanced instruction in electrical theory as it applies to the pipefitting industry; knowledge and skills necessary for the installation of steam systems for space heating and process piping, instruction in refrigeration theory and installation practices; instruction in hydronic systems for heating and cooling; understanding the safe handling of refrigerants and refrigerant recovery practices and the required training to pass EPA Certification Examinations.
(245 contact hours) (55 lecture – 190 lab)

UAAP 142 – Related Pipefitting Instruction II 6 credits
This course will provide the apprentice with: instruction in air conditioning theory and installation practices and the skills necessary to pass additional EPA Certification examinations; the understanding of valve repair and the skills necessary to be certified in valve repair; preparation for arc welding certification test; advanced plan reading and basic knowledge of pneumatic controls.
(245 contact hours) (55 lecture – 190 lab)

APP: 152 – Related Pipefitting Instruction III 6 credits
This course will provide the apprentice with: an introduction to advanced welding techniques (MIG, TIG and Orbital); instruction in electrical controls and diagrams; an introduction to instrumentation and process control; basic instruction in pipefitting; instruction in use of the instrumentation use for piping systems layout, introduction to the start, test and balance procedures and a basic knowledge of industrial and power piping systems.
(240 contact hours) (60 lecture – 180 lab)

***Specialization – Sprinklerfitting Technology**

UAAP 111 – Related Trade Instruction I 6 credits

This course is designed to emphasize the knowledge necessary to succeed as a 1st year apprentice. The course will focus on instruction in the safe, efficient use and care of tools; identification and installation requirements for various types of pipe, fittings, valves, hangers, support and fasteners; jobsite safety; soldering and brazing; basic mathematical concepts as they apply to the pipe trades; oxy-acetylene torch operation; basic rigging techniques and the ability to understand technical and isometric drawings. (235 contact hours) (45 lecture – 190 lab)

UAAP 121 – Related Trade Instruction II 6 credits

This course is designed to emphasize the knowledge necessary to succeed as a 2nd year apprentice. The course will focus on an introduction to science as it relates to the piping industry, the ability to understand building plans and specifications; basic electricity as it applies to piping installation and instruction in shielded metal arc welding.
(245 contact hours) (55 lecture – 190 lab)

UAAP 133 – Related Sprinklerfitting Instruction I 6 credits

This course will provide the apprentice with: an introduction to the installation of automatic sprinkler systems; instruction in reading automatic sprinkler piping drawing; the ability to do sprinkler systems calculations and a working knowledge of sprinkler head technology.
(242 contact hours) (60 lecture – 180 lab)

UAAP 143 – Related Sprinklerfitting Instruction II 6 credits

This course will provide the apprentice with: advanced blueprint reading skills; instruction in sprinkler system water supply using hydraulic calculations; instruction in backflow prevention devices and instruction in various types of fire protection systems and related alarm systems.
(260 contact hours) (60 lecture – 200 lab)

UAAP 153 – Related Sprinklerfitting Instruction III 6 credits

This course will provide the apprentice with: instruction in special application sprinkler systems; a working knowledge of the economics of the sprinkler industry; instruction in completing and reading technical reports and training in human relations techniques.
(162 hours) (60 lecture – 102 lab)

***Specialization – Heating/Ventilating/Air Conditioning-Residential**

UAAP 151 – Related HVACR Instruction I 6 credits

This course will provide the apprentice with: the fundamentals of mathematics and basic science related to the operation and servicing of mechanical equipment; instruction in soldering and brazing; basic electricity; safety; fundamentals of refrigeration and customer relations.
(246 contact hours) (60 lecture – 186 lab)

UAAP 152 – Related HVACR Instruction II 6 credits

This course will provide the apprentice with: in-depth instruction in refrigeration vapor compression; refrigerant pressure enthalpy diagrams and tables; fundamentals of systematic troubleshooting; safety; instruction in and preparation for EPA section 608 certification and customer relations.
(246 contact hours) (60 lecture – 186 lab)

UAAP 153 – Related HVACR Instruction III 6 credits

This course will provide the apprentice with: instruction in electrical controls for air conditioning and refrigerant systems; job safety; direct current electronics and customer relations.
(246 contact hours)(60 lecture – 186 lab)

UAAP 154 – Related HVACR Instruction IV 6 credits

This course will provide the apprentice with: instruction in capacitive reactance and inductive reactance; instruction motor theory related to single phase and polyphase starters; instruction in combustion controls; instruction in pneumatic control, centrifugal and absorption cooling; commercial refrigeration equipment and applications skills.
(246 contact hours) (60 lecture – 186 lab)

UAAP 155 – Related HVACR Instruction V 6 credits

This course will provide the apprentice with: instruction in measurement theory and tools for motor alignment; instruction in the theory and application of rigging fundamentals; instruction in the theory and application of air and water balancing equipment; instruction in building automation and telecommunication systems and instruction in the fundamentals of the use of steam in duct mounted humidification systems.
(246 contact hours) (60 lecture – 186 lab)

UAED Course Descriptions

UAED 111 – Apprentice Training 3 credits

This course will focus on the principles of learning, elements of trade teaching and the methods of teaching an applied technical skill.

UAED 121 – Apprentice Training II 3 credits

This course will focus on the developing instructional objectives, planning and presenting related information lessons and the methods of teaching a second applied technical skill.

UAED 131 – Apprentice Training III 3 credits

This course will focus on the developing of written tests, an elective professional skill and a third teaching demonstration in a technical skill area.

UAED 141 – Apprentice Training IV 3 credits

This course will focus on discussion and interaction techniques, an elective professional skill and the teaching methods in a fourth technical skill area.

UAED 151 – Apprentice Training V 3 credits

This course will focus on innovations and problems in trade teaching, an elective professional skill and methods of teaching in a fifth technical skill area.

UAED 161 – Technical Seminar 3 credits

This course will focus on the methods of teaching a technical skill area. Special approval is required to elect this course and it will replace UAED 111, 121, 131, 141, or 151 as a part of the five-year program.

UAED 171 – Professional Seminar 3 credits

This course will focus on instructional methodology and practices for the trade-related instructor. . Special approval is required to elect this course and it will replace UAED 111, 121, 131, 141, or 151 as a part of the five-year program.

General Courses
WCC Course Descriptions

ENG 111 – Composition I 4 credits

This course focuses on developing skills in critical reading, logical thinking, and written composition (from paragraphs to expository essays and documented papers). Reading materials serve as a basis for papers and classroom discussions. Students write both in-class and outside themes frequently. Methods of organization and development are emphasized. Curing the first week of class, students must demonstrate a writing proficiency at the college level.

COM 101 – Fundamentals of Speaking 3 credits

Instruction is provided in essential speaking and listening skills. Through the use of practical experience, students receive help in organization and delivery. The course attempts to relieve the stress the average person encounters when speaking in public. Students gain a heightened awareness of the relationship between speaker and audience.

MTH 178 – General Trigonometry 3 credits

This course provides a rigorous background in trigonometry necessary for students intending to study calculus. Topics include trigonometric functions, inverse trigonometric functions, trigonometric graphs and manipulations, identities, solutions of trigonometric equations, measurement of triangles and arc. This course transfers to many four-year institutions. A graphing calculator is required for this course. Consult the time schedule for current brand and model. (MTH 179 may be taken concurrently. It is recommended that MTH 179 be taken first if the two are not taken concurrently.)

PSY 100 – Introductory Psychology 3 credits

This class provides an introduction to the scientific study and interpretation of human behavior surveying such topics as psychological development, learning, thinking, motivation, emotion, perception, intelligence, aptitudes and personality. Basic principles and their practical application are discussed. This course also is taught as a television course using the program series "Understanding Human Behavior."

CIS 100 – Introduction to Computers 3 credits

This course for computer novices emphasizes how to use a microcomputer, and how to use software packages such as spreadsheet, word processing, and database. The course covers the basic vocabulary of computers, how computers are used in today's world, the basic cycle of computer operation, input and output devices, and how computers follow directions and store information. This course is also taught as a telecourse using the series "The New Literacy." It is recommended that students who do not know how to type take BOS 101A before or concurrently with this course.

Social Science OR Humanities Elective 3-4 credits