

Program Creation Process Sign-Off

Program Title: Associate in Science in General Plumbing and Pipefitting

Program Units: 90 Units

Division: Apprenticeship

Proposing Faculty name(s): Robbie Kunkel

Type of Program: _____ Transfer or X _____ Workforce

Type of Award:

Non-transcriptable certificate

Certificate of Achievement

AA/AS Degree

Documentation checklists:

Transfer documentation

Catalog Description

List of Courses

Articulation & transfer data

Identification of existing program(s) at
CSU/UCs

Completer Projections

Identification of any additional
resources needed to establish program
(i.e. faculty, equipment, etc.)

Workforce documentation

Catalog Description

List of Courses

Completer Projections

Labor Market information

Identification of any similar program(s)
in the area (NONE)

Identification of any additional
resources needed to establish program
(i.e. faculty, equipment, etc.) (NONE)

Transfer/Workforce Work Group:

Recommended

Not Recommended

Comments:

Work Group Signature: 

Date: 4-20-16

Supervising Vice President:

Recommended

Not Recommended

Comments:

Vice President Signature: 

Date: 4/25/16

Planning & Resource Committee:

Recommended

Not Recommended

Comments:

PaRC Signature:

Date:

Division Curriculum Committee:

Recommended

Not Recommended

Comments:

Division CC Signature:

Date:

Following the review by the listed committees, this form should be forwarded to the Office of Instruction.

10/22/14

FOOTHILL COLLEGE
Credit Program Narrative
Associate in Science in General Plumbing and Pipefitting

Item 1. Program Goals and Objectives

The goals and objectives of the Associate in Science degree in General Plumbing and Pipefitting align with the primary mission of California community colleges, as established in Ed. Code § 66010.4, which mandate that community colleges provide vocational instruction to students and to advance California's economic growth and global competitiveness through education and training that contribute to workforce development. The Associate in Science degree in General Plumbing and Pipefitting aligns with Foothill College's Institutional Outcomes and directly supports the Computation and the Creative, Critical, and Analytical Thinking rubrics.

The Associate in Science degree in General Plumbing and Pipefitting at Foothill College serves to align apprenticeship programs with college and university academic tracks as directed by the federal and state government. Foothill College, functioning as the Local Education Agency for the Division of Apprenticeship Standards for the state of California, is collaborating with the Joint Apprenticeship Committee for Plumbing and Pipe Fitting of Sacramento/Yolo Counties, Local #447, to offer this degree.

Foothill College is responding to local demand for Pipe Trades workers in Plumbing and Pipefitting by establishing an Associate in Science degree in General Plumbing and Pipefitting in partnership with the Joint Apprenticeship Committee of Sacramento/Yolo Counties, UA Local #447. Graduates are recognized as journeypersons within the Pipe Trades industry and will increase their marketability and employment opportunities. Graduates will be employable as: Foreman, General Foreman, Superintendent, Project Manager, Estimator, Detailer, Building Trades Inspector, Building Trades Instructor, and Union Business Agent/ Business Manager.

The program learning outcomes for the Associate in Science degree in General Plumbing and Pipefitting are:

- In compliance with applicable standards and codes, students will demonstrate ability to install and remove plumbing systems such as drain waste and ventilation systems, systems for various industrial fluids, public or private water systems and gas piping systems.
- In compliance with applicable standards and codes, students will demonstrate ability to maintain, extend, and/or alter plumbing systems including drain waste and ventilation systems, systems for various industrial fluids, public or private water systems and gas piping systems.

Students complete the associate degree through enrollment in the Plumbing and Pipefitting apprenticeship program at the Joint Apprenticeship Committee Training Center, UA Local #447 and through enrollment in the General Education requirements at Foothill College. To apply to the Joint Apprenticeship Committee Training Center of Sacramento/Yolo Counties, potential students must be at least 18 years of age, be able to perform the work of the trade, present verification of high school completion, either through a high school diploma or GED, demonstrate the ability to read, write, and speak English, and pass a basic mathematics test with a minimum score of 65%. Students that pass the mathematics exam will be given a list of signatory contractors they may contact for sponsorship into the apprenticeship program. The selection, employment and training of apprentices by the Joint Apprenticeship Committee Training Center of Sacramento and Yolo Counties is without discrimination according to race, color, national or ethnic origin, age, gender, religion, sexual orientation or marital status. Admission to apprenticeship classes is limited to apprentices registered with the California Division of Apprenticeships Standards. This limitation is authorized by the California Labor Code, Section § 3074.3.

Aside from Foothill College's ordinary enrollment fees, there are no additional costs to the student to complete the Associate in Science degree in General Plumbing and Pipefitting.

Item 2. Catalog Description

The Associate in Science degree in General Plumbing and Pipefitting program is conducted in partnership with the Joint Apprenticeship Committee Training Center of the UA Local #447 apprenticeship program of Sacramento and Yolo Counties. The apprenticeship program is five years in duration, requiring a minimum of 9,000 hours of on-the-job training and 1,080 hours of classroom instruction. After 5 years of classroom instruction and paid work experience, students are recognized as journeypersons within the Pipe Trades industry. A graduate will be prepared to work as a Foreman, General Foreman, Superintendent, Project Manager, Estimator, Detailer, Building Trades Inspector, Building Trades Instructor, and Union Business Agent/ Business Manager in the energy, biopharmaceutical, healthcare, aerospace, construction, housing, water treatment, and food and beverage processing industries. Labor Market Analysis indicates increased employment opportunities in the Pipe Trades through 2020. Students earning an associate degree increase their marketability and employment opportunities. Enrollment in apprenticeship courses is limited to apprentices registered with the California Division of Apprenticeships Standards, according to the California Labor Code, Section § 3074.3.

The apprenticeship program, which includes coursework, lab work and on-the-job training, involves learning about the assessment, installation, maintenance, and repair of different types of pipe systems, effective and safe tool use, material applications, related mathematics & science and storage. Students will learn how to read blueprints, apply layout and install, as well as estimate and repair both supply and waste water systems. The Associate in Science degree in General Plumbing and Pipefitting builds on the Certificate of Achievement in General Plumbing and Pipefitting by adding requirements for general education courses and electives offered at Foothill College.

Students are admitted into the apprenticeship program based on obtaining a passing (65%) score on a mathematics exam, which measures the student's ability in math and mechanical reasoning. Students who pass the mathematics entrance exam will be given a list of signatory contractors they may contact for sponsorship into the apprenticeship program.

Item 3. Program Requirements

Requirements	Course #	Name	Units	CSU-GE	IGETC	Sequence
Core Courses (45 Units)	APPR 150	Job Safety, OSHA, Mathematics, Heritage & Rigging I	4.5			Yr 1, Fall
	APPR 151	Oxy-Acc, Arc, & Plastic Welding, Soldering/Brazing Certification	4.5			Yr 1, Winter
	APPR 152	Basic Arc Welding, Basic Drawing	4.5			Yr 2, Fall
	APPR 153	Plumbing Fixtures, Rigging & Science	4.5			Yr 2, Winter
	APPR 154	Gas & Water Supply	4.5			Yr 3, Winter
	APPR 155	Uniform Plumbing Code & Medical Gas For Apprentices	4.5			Yr 3, Fall
	APPR 156	Drainage, Advanced Drawing	4.5			Yr 4, Fall
	APPR 157	Steamfitting & Pipefitting	4.5			Yr 4, Winter
	APPR 159	Advanced Arc Welding	4.5			Yr 5, Fall
	APPR 166	Job Supervision	4.5			Yr 5, Winter

Required Major Total	45 units
Completion of Foothill GE pattern	35 units
Transferable electives (as needed to reach 60 units)	10 units
TOTAL UNITS	90 units

Proposed Sequence: (to include general education courses)

Year 1, Fall = 10 units
 Year 1, Winter = 10 units
 Year 2, Fall = 10 units
 Year 2, Winter = 10 units
 Year 3, Fall = 10 units
 Year 3, Winter = 10 units
 Year 4, Fall = 10 units
 Year 4, Winter = 10 units
 Year 5, Fall = 5.0 units
 Year 5, Winter = 5.0 units
TOTAL UNITS: 90 units

Item 4. Master Planning

The Associate in Science degree in General Plumbing and Pipefitting aligns with the planned goals of the College and the District because the program serves the regional area in support of workforce development and economic growth. The Associate in Science degree in General Plumbing and Pipefitting is a new degree, specifically offered in partnership between Foothill College, as Local Education Agency, and the UA Local #447, and monitored by the Division of Apprenticeship Standards. This degree does not duplicate an already-existing program within the Foothill-De Anza district or the surrounding colleges. The courses and programs offered by the Joint Apprenticeship Committee Training Center of the Plumbers and Pipefitters UA Local #447 are unique in scope, specific to local needs, and differ substantially from other Joint Apprenticeship Training Centers serviced by Foothill College in its role as Local Education Agency for the Division of Apprenticeship Standards.

Competition to the Associate in Science degree in General Plumbing and Pipefitting program at Foothill College primarily occurs from an out-of-state college that offers on-line degrees. Apprentices and recently-graduated journeymen of the UA Local #447 are taking on-line courses at Washtenaw Community College at considerably higher tuition, \$202/credit hour, and incurring other expenses in order to earn an Associate in Applied Science degree in HVACR Sustainable Technologies or Industrial Journeyman. Offering an Associate in Science degree in General Plumbing and Pipefitting at Foothill College would well serve the college's primary stakeholders: the students, community partners, and the community at-large.

Local references in support of the Associate in Science degree in General Plumbing and Pipefitting include all Advisory Committee representatives from the UA Local #447 Joint Apprenticeship Committee Training Center who strongly support the partnership between the Pipe Trades Training Center and Foothill College due to their understanding of local economic workforce needs and their ongoing contact with apprenticeship students, which provides grounded understanding of their students' short-term and long-term educational goals.

Item 5. Enrollment and Completer Projections

Course #	Course Title	Year 1		Year 2	
		Annual Sections	Annual Enrollment	Annual Sections	Annual Enrollment
APPR 150	Joe Safety, OSHA, Mathematics, Heritage & Rigging I	1	17	2	38
APPR 151	Oxy-Acc, Arc, & Plastic Welding, Soldering/Brazing Certification	1	15	2	40
APPR 152	Basic Arc Welding, Basic Drawing	1	18	2	39

APPR 153	Plumbing Fixtures, Rigging & Science	1	20	2	38
APPR 154	Gas & Water Supply	1	17	2	39
APPR 155	Uniform Plumbing Code & Medical Gas for Apprentices	1	18	2	40
APPR 156	Drainage, Advanced Drawing	1	17	2	40
APPR 157	Steamfitting & Pipefitting	1	17	2	39
APPR 159	Advanced Arc Welding	1	16	2	38
APPR 166	Job Supervision	1	15	2	39

Item 6. Place of Program in Curriculum/Similar Programs

The Associate in Science degree in General Plumbing and Pipefitting does not adversely affect existing programs at Foothill College in terms of competition for students or courses, nor does it take material resources away from other existing programs at the College. The associate degree creates pathways for students from Pre-Apprenticeship and Apprenticeship through an associate's degree and potential transfer to a four-year institution. Thus, the students can easily move from the Certificate of Achievement in General Plumbing and Pipefitting to the Associate in Science degree in General Plumbing and Pipefitting. This streamlined approach facilitates the students' ability to readily complete their educational goals and to earn family-supporting wages.

Item 7. Similar Programs at Other Colleges in Service Area

There are no similar college programs in existence in the college service area of Foothill College; the partnership with the UA Local #447 Joint Apprenticeship Committee Training Center of Sacramento and Yolo Counties is unique in the college service area.

Appendix A:
Labor Market Analysis
for Plumbing and Pipefitting Employment
for Sacramento and Yolo Counties
from 2012 – 2022

Employment Development Department		2012-2022 Occupational Employment Projections												
Labor Market Information Division		Sacramento–Roseville–Arden–Arcade Metropolitan Statistical Area												
Published: December 2014		(El Dorado, Placer, Sacramento, and Yolo Counties Counties)												
SOC Code*	Occupational Title	Estimated Employment 2012**	Projected Employment 2022	Numeric Change 2012-2022 [1]	Percent Change 2012-2022 [2]	Annual Average Percent Change	Average Annual Job Openings		2014 First Quarter Wages [5]		Education and Training Levels [7]			
							New Jobs [2]	Replacement Needs [3]	Total Jobs [4]	Median Hourly	Median Annual	Entry Level Education	Work Experience	On-the-Job Training
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	2,990	4,260	1,280	42.8%	4.3%	128	32	160	\$35.30	\$73,416	7	≥5 years	None
47-2000	Construction Trades Workers	32,720	48,260	15,540	47.5%	4.7%	1,554	539	2,093	N/A	N/A			
47-2021	Brickmasons and Blockmasons	380	680	300	78.9%	7.9%	30	4	34	\$28.80	\$59,917	7	None	APP
47-2031	Carpenters	8,120	11,830	3,710	45.7%	4.6%	371	100	471	\$22.15	\$46,073	7	None	APP
47-2061	Construction Laborers	7,380	10,390	3,020	40.9%	4.1%	302	158	460	\$19.54	\$40,649	8	None	ST OJT
47-2073	Operating Engineers and Other Construction Equipment Operators	1,850	2,550	710	38.4%	3.8%	71	41	112	\$31.81	\$66,150	7	None	MT OJT
47-2111	Electricians	2,810	4,000	1,190	42.3%	4.2%	119	53	172	\$26.84	\$55,828	7	None	APP
47-2121	Glaziers	240	370	140	58.3%	5.8%	14	6	20	\$17.85	\$37,128	7	None	APP
47-2141	Painters, Construction and Maintenance	2,300	3,740	1,440	62.6%	6.3%	144	35	179	\$17.44	\$36,258	8	None	MT OJT
47-2151	Pipelayers	140	180	40	28.6%	2.9%	4	2	6	\$28.89	\$60,099	8	None	ST OJT
47-2152	Plumbers, Pipefitters, and Fitters	1,780	2,630	850	47.8%	4.8%	85	22	107	\$25.89	\$53,845	7	None	APP
47-2161	Plasterers and Stucco Masons	210	310	100	47.6%	4.8%	10	1	11	\$17.30	\$35,984	8	None	LT OJT
47-2181	Roofers	1,040	1,500	460	44.2%	4.4%	46	22	68	\$24.47	\$50,900	8	None	MT OJT
47-2211	Sheet Metal Workers	910	1,320	410	45.1%	4.5%	41	17	58	\$30.40	\$63,226	7	None	APP

Appendix B:
Minutes of Advisory Committee Meeting
Conferring Approval for Certificate and Degree Program
Partnership with Foothill College



JOINT APPRENTICESHIP COMMITTEE
FOR THE
PLUMBING AND PIPE FITTING INDUSTRY
SACRAMENTO - YOLO DISTRICT
8750 Younger Creek Drive
Sacramento, California 95828
Phone: 916.383.1102 Fax: 916.383.3830



MINUTES

January 11, 2016

Bob Taylor, called the meeting to order at 5:00 p.m.

Employer members present were Larry Cook, Mike Countryman, Jon Pierce and Rod Barbour.

Employee members present were Victor Gutierrez, Matt Rotz and Todd Schiavo.

Also present were Randy Boatman, William Haley, Bill Whitney, and Claire Donnenwirth

The minutes of the previous meeting were submitted and approved.

ACTION ITEMS:

- *The following apprentice, Vincent Hamilton, appeared before the JAC for receiving multiple unfavorable letters. A motion was made, seconded and carried to terminate Mr. Hamilton's apprenticeship.*
- *The following apprentice, Paul Scarlata-Clark, requested in writing to withdraw from the program. A motion was made, seconded and carried to grant Mr. Scarlata-Clark's request. His apprenticeship will be terminated February 29, 2016.*

NEW BUSINESS:

- *The committee was made aware of the JAC expenses for March 1, 2016 through April 28, 2016.*
- *The committee approved Foothill's plan to adopt Associates degrees for completing apprentices.*
- *A motion was made, seconded, and carried to approve the Affirmative Action list for the period from February 26, 2016 through April 29, 2016.*

- *The Committee was advised that the next Committee Meeting will be at the JAC Training Center on Friday, February 26, 2016, if needed.*

Copies of these minutes will be available for Committee Members at the next Committee meeting.

Chairman, Bob Taylor, adjourned the meeting at 5:45 p.m.



*Randy Boatman
Coordinator, J.A.C.*

RAB:map

JOINT APPRENTICESHIP COMMITTEE

(As of January 2016)

MANAGEMENT

Larry Cook Feb-90
Airco Mechanical
Phone: 916/381-4523
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Rick Chowdry Oct-12
Intech Mechanical
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Rod Barbour Jun-08
Lawson Mechanical Contractors
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John O'Connor Sep-97
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Bob Taylor Feb-09
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Matt Rotz Aug-00
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Victor Gutierrez Jun-04
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Todd Schiavo Apr-12
ACCO
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Harry Rotz Feb-76
L.U. #447
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Mike Countryman Apr-12
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COORDINATOR

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NAME OF SCHOOL & REPRESENTATIVE

Foothill College
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DIVISION OF APPRENTICESHIP STANDARDS (DAS) CONSULTANT

Eric Elberg
Phone: 916/263-2877
Email:

Appendix C:
Declaration of Student Interest
by JAC UA Local #447
Training Center Board of Directors



JOINT APPRENTICESHIP COMMITTEE
FOR THE
PLUMBING AND PIPE FITTING INDUSTRY
SACRAMENTO - YOLO DISTRICT
8750 Younger Creek Drive
Sacramento, California 95828
Phone: 916.383.1102 Fax: 916.383.3830



August 10, 2015

Chancellor's Office
California Community Colleges
1102 Q Street
Sacramento, CA 95811-6539

Dear Chancellor's Office,

Please be advised that an apprentice that earns an Associate of Science degree in the Pipe Trades Industry and can perform at a journey person level and achieves a high standing within Local 447, will have a greater opportunity to stay with his/her current employers and will be in demand to work at any of the over seventy employers signatory to UA Local 447. Thus a survey is not necessary.

When the apprenticeship students can earn a certificate and degree at Foothill we believe the response will be very high and that all students will pursue the Certificate of Achievement and many others will pursue the Associate's degree in their area of expertise. Earning a certificate of achievement and an associate's degree is highly regarded at the PTTC and leads to increased earnings and career advancement for journeyman.

Based on the long-standing interest of the journeyman students to pursue earning college certificates and degrees, our Joint Apprenticeship Committee (i.e. Board of Directors) unanimously voted to recommend/endorse Foothill College's offering these certificates and degrees.

Sincerely,

Randy Boatman
Coordinator, Local 447 JATC

Robert Taylor
JATC Committee Chairman