APPRENTICESHIP - AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

Program Description

The Associate in Science in Air Conditioning & Refrigeration Technology degree program is conducted in partnership with the Pipe Trades Training Center apprenticeship program. The apprenticeship program is five years in duration, requiring a minimum of 9,000 hours of on-the-job training. After 5 years of classroom instruction and paid work experience, students are recognized as journeypersons within the Pipe Trades industry and work to insure indoor air quality by servicing and repairing all types of refrigeration equipment in all sizes of buildings, complex air conditioning, heating and refrigeration units used in hospitals, skyscrapers, manufacturing facilities and research development laboratories. 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, electronic control systems, refrigeration and air conditioning systems, effective and safe tool use, material applications, electrical competency, related mathematics and science and storage. The Associate in Science in Air Conditioning & Refrigeration Technology degree builds on the Certificate of Achievement in Air Conditioning & Refrigeration Technology by adding requirements for general education courses and electives.

Students are admitted to the Pipe Trades Training Center apprenticeship program based on obtaining a passing (75%) score on the Pipe Trades Entrance Exam, which measures the student's ability in math and mechanical reasoning. Students who pass the entrance exam are selected from an applicant waiting list, the order of which is established by the date the entrance exam was taken and the test score.

Learn more about the program on the Apprenticeship website.

Program Learning Outcomes

- In compliance with applicable standards and codes, students will demonstrate ability to install and remove refrigeration, heating, air conditioning, and ventilation systems, including the appropriate electrical/electronic control systems.
- In compliance with applicable standards and codes, students will demonstrate ability to maintain, repair, extend, and/or alter refrigeration, heating, air conditioning, and ventilation systems, including electronic control systems.

Career Opportunities

Graduates will be employable as: Service Manager, Facilities Manager, Project Manager, Estimator, HVACR Instructor, HVACR Sustainable Technologies Technician, and/or a Union Business Agent/Business Manager in almost any industry.

Award Type(s)

- AS = Associate in Science Degree
- CA = Certificate of Achievement

Units Required

- Major: 48
- Certificate(s): 48

Associate Degree Requirements

Code	Title	Units
English Proficiency		
Select one of the following:		
ENGL 1A	COMPOSITION & READING	5
ENGL 1AH	HONORS COMPOSITION & READING	5
ENGL 1S & ENGL 1T	INTEGRATED COMPOSITION & READING and INTEGRATED COMPOSITION & READING	8
or equivalent		
Mathematics Proficiency		
Select one of the following:		
MATH 105	INTERMEDIATE ALGEBRA	5
MATH 180	QUANTITATIVE REASONING	5
or any MATH course approved for Foothill GE Area V, Communication & Analytical Thinking		

A minimum of 90 units is required[1] to include:

- Completion of one of the following general education patterns: Foothill General Education, CSU General Education Breadth Requirements or the Intersegmental General Education Transfer Curriculum (IGETC)
- Core courses (48 units)

[1] Additional elective course work may be necessary to meet the 90-unit minimum requirement for the associate degree.

Note: All courses pertaining to the major must be taken for a letter grade. In addition, a grade of "C" or better is required for all core courses used for the degree or certificate.

Core and Support Courses

Code	Title	Units
Core Courses		
APPT 129	SPECIAL TOPICS	3.5
APPT 130	REVIEW & TURNOUT	3.5
APPT 151	RF 101 BASIC REFRIGERATION SERVICE SKILLS	5
APPT 152	RF 102 BASIC ELECTRICITY & REFRIGERATION	4.5
APPT 153	RF 201 MECHANICAL SYSTEMS	4.5
APPT 154	RF 202 ELECTRIC CONTROLS FUNDAMENTALS	4.5
APPT 155	RF 301 ADVANCED ELECTRIC CONTROLS	4.5
APPT 156	RF 302 HVAC PNEUMATIC & ELECTRONIC CONTROL SYSTEMS	4.5
APPT 157	RF 401 INDUSTRIAL REFRIGERATION & AIR-CONDITIONING SERVICE	4.5
APPT 158	RF 402 ADVANCED REFRIGERATION & CHILLERS	4.5

APPT 159	RF 501 START, TEST & BALANCE; HVAC SYSTEMS	4.5
Total Units		**48**

Certificate Requirements

Certificate of Achievement in Air Conditioning and Refrigeration Technology

- Units: 48

The certificate of achievement is awarded upon completion of the core courses. General education courses are not required.

Currently offered at: San Jose.