

AIR CONDITIONING AND REFRIGERATION TECHNOLOGY - ASSOCIATE IN SCIENCE

San José City College offers two certificates and an Associate in Science (A.S.) in Air Conditioning/Refrigeration Technology. This program is designed to develop the appreciation, knowledge, and skills essential for employment in the air conditioning and refrigeration industry. Instruction includes both theory and practical work with refrigeration and air conditioning machinery, electrical equipment, and related mathematics. A grade of "C" or better is required in each course in the major and approved major electives for each certificate and degree.

Program Learning Outcomes

- Recognize the components that constitute Residential and Commercial Air Conditioning and Refrigeration systems. Perform Maintenance and Repair on complex Air Conditioning and Refrigeration systems.
- Competence in analyzing, maintaining, servicing and commissioning Air Conditioning and Refrigeration systems. Problem-solve and troubleshoot complex Air Conditioning and Refrigeration systems using analytical and methodical practices.
- Ability to interpret and process Wiring Diagrams and Pipe Diagrams. Demonstrate proficiency in writing service reports in both hard and soft copy.
- Competence and skill in maintaining energy efficient Air Conditioning and Refrigeration equipment. Recognize and be capable of implementing modern technologies so as to maintain proper and efficient functionality of Air Conditioning and Refrigeration systems
- Demonstrate the ability to work as an individual and in groups of all social and economic backgrounds. Demonstrate awareness of Global Warming, Green House Gases Effect and Ozone Depletion as related to use of common Refrigerants.
- Demonstrate honesty and integrity when dealing with customers and employers. Exercise professional courtesy in the workplace.
- Recognize proper attire and etiquettes expected of Professional Air Conditioning and Refrigeration Technicians and Engineers. Perform Mechanical and Electrical installations of Air Conditioning and Refrigeration systems that are both safe and aesthetically pleasing.

Major Requirements

Course	Title	Credits
AIRC 121	Air Conditioning Principles	4
AIRC 122	Refrigeration Principles	4
AIRC 131	Intermediate Air Conditioning	4.5
AIRC 132	Refrigeration Service	4.5
AIRC 133	EPA Section 608 Refrigerant Recovery Certification Program	2
AIRC 141	Hydronics and Air Distribution	3
AIRC 142	Air Conditioning Control Systems	4
FMT 100	Introduction to Facilities Maintenance	3.5
Select one of the following:		2-2.5

AIRC 145	Sheet Metal Principles	
FMT 105	Introduction to Industrial Electronics and Controls	
FMT 130	Management of People in Technical and Building Services Industries	
Approved Major Electives (as needed to reach 30)		
Total Units		30

A.S. Degree Requirements

Course	Title	Credits
Major Requirements		30
Approved Major Electives		5
General Education Requirements		24
Physical Activity		1
Total Units		60

Approved Major Electives

Course	Title	Credits
AIRC 138	Work Experience	1-8
CIS 041	Introduction to Computer Information Systems	3
CNSTR 102A	Residential Plumbing Systems	3
CNSTR 102B	Residential/Commercial Wiring	3
FMT 104	Electrical Concepts for Facilities Maintenance Technicians	2.5
FMT 120	Low and High Pressure Boilers	3
FMT 122	Introduction to Programmable Logic Controllers	4
FMT 123	Intermediate Programmable Logic Controllers	4