

## GOALS AND OBJECTIVES

The **Air Conditioning & Refrigeration** program is designed to be a bridge between Engineering and Service Technology. It will provide students with technical hands-on skills to support engineering applications. Graduates of the program will be at the leading edge of the application of new engineering solutions to the industry.

## CERTIFICATE

### Air Conditioning & Refrigeration (41.5 - 42 units)

See the *Cypress College Catalog* for additional certificates.

To earn the certificate, complete the required courses as listed with a minimum grade of "C." At least 50% of all coursework must be completed at Cypress College.

## DEGREE

### Associate in Science Degree

#### in Air Conditioning & Refrigeration (60 units)

To earn an Associate Degree, students must complete:

- (1) All 41.5 - 42 units of Air Conditioning & Refrigeration course requirements for the Certificate in Air Conditioning & Refrigeration with a minimum grade of "C";
- (2) Cypress College Native General Education requirements; California State University General Education Breadth requirements (CSU GE Breadth) or IGETC General Education requirements, including the cultural diversity and reading requirements and any elective courses to complete a minimum of 60 units; and,
- (3) Have a minimum GPA of 2.0. At least 50% of all major course work must be completed at Cypress College. Courses that fulfill requirements for an Associate Degree at Cypress College might not be the same as those required for completing the major at a transfer institution offering a Baccalaureate Degree.

## CERTIFICATE

### Air Conditioning & Refrigeration Certificate = 40.5 - 42 units

Program Code: 1C31173

**Required courses are listed in suggested sequence:**

	<b>Units</b>
___AC/R 100 C Principles of Thermodynamics and Heat Transfer	3
___AC/R 110 C Air Conditioning I	3
___AC/R 120 C Piping Practice, Tools and Safety	2
___AC/R 137 C Blueprints and Dimension Analysis	2
___AC/R 105 C Electricity for Air Conditioning and Refrigeration I	3
___AC/R 115 C Gas Heat Transfer Systems	3
___AC/R 036 C Refrigerants, Charging and Recovery	1
___AC/R 055 C Technician Customer Relations	2
___AC/R 106 C Electricity for Air Conditioning and Refrigeration II	3
___AC/R 145 C Load Calculations for Heating and Cooling	2
___AC/R 210 C Commercial Refrigeration	3
___AC/R 220 C A/C Controls and Energy Management	2
___AC/R 230 C Heat Pumps	2
___AC/R 205 C Commercial Air Conditioning	3
___AC/R 215 C Codes and Estimating for HVACR	3
___AC/R 235 C Air Conditioning Capstone	2
___AC/R 035 C Building Commissioning	2
___AC/R 050 C HVAC/R Special Projects	0.5 - 1
<b>Total Units Required</b>	<b>41.5 - 42</b>


## DEGREE

### A.S. Degree Air Conditioning and Refrigeration = 60 units

Program Code: 1S03774

To earn an Associate in Science Degree, **combine Certificate in Air Conditioning & Refrigeration with Cypress College Native General Education requirements**; California State University General Education Breadth requirements (CSU GE Breadth) **or** IGETC General Education requirements outlined in the Cypress College Catalog (minimum 25 units plus cultural diversity and reading proficiency requirements).

For information on specific university requirements, please consult with your counselor, or visit the Transfer Center.

 **Key Tips:** You may opt to "double major" by applying some of these courses to other AC/R Degree/Certificate Programs. Remember to apply for certificates/degrees/graduation at the beginning of your last semester.

## Student Educational Planner

### Associate in Science Degree Air Conditioning & Refrigeration

● Core

● General Education

1st TERM	2nd TERM	3rd TERM
<b>AC/R 100 C (3 Units)</b> Principles of Thermodynamics and Heat Transfer	<b>AC/R 105 C (3 Units)</b> Electricity for Air Conditioning and Refrigeration I	<b>AC/R 106 C (3 Units)</b> Electricity for Air Conditioning and Refrigeration II
<b>AC/R 110 C (3 Units)</b> Air Conditioning I	<b>AC/R 115 C (2 Units)</b> Gas Heating and Carbon Monoxide	<b>AC/R 210 C (3 Units)</b> Commercial Refrigeration
<b>AC/R 120 C (2 Units)</b> Piping Practice, Tools and Safety	<b>AC/R 036 C (1 Unit)</b> Refrigerants, Charging and Recovery	<b>AC/R 220 C (1 Unit)</b> A/C Controls and Energy Management
<b>AC/R 137 C C (2 Units)</b> Blueprints and Dimension Analysis	<b>AC/R 055 C (2 Units)</b> Technician Customer Relations	<b>AC/R 230 C (2 Units)</b> Heat Pumps
<b>ENGL 100 C (4 Units)</b> College Writing	<b>Cypress College GE: A2 Analytical Thinking (3 Units)</b> (Check Cypress College Catalog)	<b>Cypress College GE: D Social Sciences (3 Units)</b> (Check Cypress College Catalog)
<b>MATH 120 C (4 Units)</b> Introduction to Probability and Statistics	<b>Cypress College GE: B1 Life Science &amp; Physical Sciences (3 Units)</b> (Check Cypress College Catalog)	<b>ETHS 101 C (3 Units)</b> American Ethnic Studies

4th TERM	5th TERM	6th TERM
<b>AC/R 145 C (2 Units)</b> Load Calculations for Heating and Cooling		
<b>AC/R 205 C (3 Units)</b> Commercial Air Conditioning		
<b>AC/R 215 C (3 Units)</b> Codes and Estimating for HVACR		
<b>AC/R 035 C (2 Units)</b> Building Commissioning		
<b>AC/R 050 C (1 Unit)</b> HVAC/R Special Projects		
<b>AC/R 235 C (2 Units)</b> Air Conditioning Capstone		
<b>Cypress College GE: E Physical Activity and Health (1 Unit)</b> (Check Cypress College Catalog)		

For more information, go to the Transfer Center at [cypresscollege.edu/services/transfer-center/](http://cypresscollege.edu/services/transfer-center/)

**Please note: This student education plan (SEP) is offered as a suggestion only.** Students may modify it by taking more or fewer classes as needed. Students wishing to exceed 19 units per semester will need to meet with a counselor. Students wishing to complete an AS Degree and/or transfer should meet with a counselor to modify their course plan to include general education courses.

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