

# Air Conditioning Technology - Critical Systems

CERTIFICATE OF ACHIEVEMENT (CA)

REQUIRED CREDITS: 44.5

DEGREE CODE: ACTCS-CT

## DESCRIPTION

This program prepares students to install, maintain, service, troubleshoot, and repair critical systems such as in data process centers and hospitals. The program enables students to learn how to maintain, troubleshoot, and repair HVAC equipment for equipment cooling and other related machinery. Instruction includes classroom, laboratory, and hands-on work in the laboratory or in the field to help students prepare to meet challenges commonly found in the workplace.

## STUDENT LEARNING OUTCOMES

- Incorporate workforce safety principals while performing basic tasks of a Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC/R) technician.
- Interpret electrical/mechanical schematics on HVAC/R equipment to diagnose mechanical or electrical problems in a residential or light commercial environment.
- Appraise EPA rules, regulations, and refrigerant handling techniques in the performance of HVAC/R duties.
- Diagnose and repair electrical or mechanical problems on commercial air conditioning equipment; critical systems; chillers.

**PLEASE NOTE** - The courses listed below may require a prerequisite or corequisite. Read course descriptions before registering for classes. All MATH and ENG courses numbered 01-99 must be completed before reaching 30 total college-level credits. No course under 100-level counts toward degree completion.

## GENERAL EDUCATION REQUIREMENTS (6 CREDITS)

### MATHEMATICS (3 credits)

Recommended: MATH 104B Applied Mathematics

### COMMUNICATIONS (3-5 credits)

Required: COM 115 Applied Communications

## SPECIAL PROGRAM REQUIREMENTS (38.5 CREDITS)

### CORE REQUIREMENTS (33.5 credits)

AC 102B	Introduction to HVAC Electrical Theory and Application	5
AC 103B	Introduction to HVAC Mechanical Theory and Application	5
AC 110B	Intermediate HVAC Electrical Theory and Application	5
AC 115B	Troubleshooting	5
AC 119B	Professionals in Customer Service	1.5
AC 201B	HVAC Automatic Controls	3
AC 212B	Equipment Cooling	5
MT 104B	Industrial Electricity	4

### Choose five credits from the following

AC 220B	Chiller Operations and Maintenance	5
AC 295B	Internship HVAC Career	1-5

### Choose one from the following (0-3 credits)

IS 100B	Core Computing Competency	0
IS 101	Introduction to Information Systems	3

Computation included in AC 103B

Human Relations included AC 102B

## FULL-TIME STUDENT DEGREE PLAN

*Add more semesters to modify this plan to fit part-time student needs.*

FIRST SEMESTER	Credits
MATH 104B Applied Mathematics	3
AC 102B Introduction to HVAC Electrical Theory and Application	5
AC 103B Introduction to HVAC Mechanical Theory and Application	5
<b>TOTAL CREDITS</b> .....	<b>13</b>

SECOND SEMESTER	Credits
AC 110B Intermediate HVAC Electrical Theory and Application	5
MT 104B Industrial Electricity	4
IS 100B or IS 101	0-3
<b>TOTAL CREDITS</b> .....	<b>9-12</b>

THIRD SEMESTER	Credits
COM 115 Applied Communication	3
AC 201B HVAC Automatic Controls	3
AC 212B Equipment Cooling	5
<b>TOTAL CREDITS</b> .....	<b>11</b>

FOURTH SEMESTER	Credits
AC 115B Troubleshooting <sup>1</sup>	5
AC 119B Professionals in Customer Service	1.5
AC 220B or 295B	5
<b>TOTAL CREDITS</b> .....	<b>11.5</b>

**DEGREE PLAN TOTAL CREDITS**..... **44.5-47.5**

<sup>1</sup>This course has prerequisites of AC 106B and AC 111B. Contact the department of Applied Technologies for permission to complete this class in this semester.

- NOTE**
- Course numbers with the “B” suffix may be non-transferable for a NSHE baccalaureate degree.
  - Course numbers with the “H” suffix are designated Honors-level courses and can be used to fulfill equivalent general education requirements. For more information visit [www.csn.edu/honors](http://www.csn.edu/honors).
  - In no case, may one course be used to meet more than one requirement except for the Values and Diversity general education requirement (only AA, AS, and AB degrees) which may be used to fulfill the corresponding general education or emphasis requirement.
  - Students may elect to graduate using the degree requirements in effect at the time of matriculation, or when they declared or changed major or the current catalog. If a program is official after a student has matriculated, the student may choose the degree requirements of the new program. In no case may a student use a catalog which is more than six years old at the time of graduation.

