

# AIR CONDITIONING AND REFRIGERATION (AS DEGREE S0909)

## Technology and Health Division

### Degree S0909

The Air Conditioning and Refrigeration (AIRC) Degree Program prepares students for entry level employment or for advancement of existing skills/knowledge without requiring any prior knowledge or experience. In addition to exposing students to core topics such as mechanical and electrical fundamentals, the Program includes coursework in heat loads, advanced electrical and mechanical, welding, math, codes and standards, and air properties. Hands-on labs throughout the program expose students to a cross-section of systems and equipment used in the industry.

The Program is designed to prepare the student for employment in the broad field of air conditioning, heating, and refrigeration and leads to occupations in design, manufacturing, operation, sales, distribution, installation, maintenance, repairs, and controls. There are no prerequisites and/or enrollment limitations.

This degree requires the completion of General Education (<https://catalog.mtsac.edu/programs/degrees-certificates/#gerequirementstext>) coursework plus the following:

## Required Courses

Course Prefix	Course Name	Units
AIRC 10	Technical Mathematics in Air Conditioning and Refrigeration	2
AIRC 11	Welding for Air Conditioning and Refrigeration	2
AIRC 12	Air Conditioning Codes and Standards	3
AIRC 20	Refrigeration Fundamentals	4
AIRC 25	Electrical Fundamentals for Air Conditioning and Refrigeration	5
AIRC 26	Gas Heating Fundamentals	2
AIRC 30	Heat Load Calculations and Design	4
AIRC 31	Commercial Electrical for Air Conditioning and Refrigeration	4
AIRC 32A	Air Properties and Measurement	1.5
AIRC 34	Commercial Systems	4
<b>Total Units</b>		<b>31.5</b>

Air Conditioning and Refrigeration Website (<http://www.mtsac.edu/airconditioning/>)

The Air Conditioning and Refrigeration program is accredited by the Partnership for Air-Conditioning, Heating, Refrigeration Accreditation (PAHRA).

### Contact:

Partnership for Air-Conditioning, Heating, Refrigeration Accreditation (PAHRA)

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### Program Learning Outcomes

Upon successful completion of this program, a student will be able to:

- Properly handle refrigerants based on Section 608 of the clean air act.
- Evaluate, troubleshoot, and modify the electrical, mechanical and air side operation of an air conditioning or refrigeration system.
- Perform a residential heat load calculation, select the equipment, and size the ductwork based on ACCA's Manual J8 and Manual D.
- Select equipment and components for commercial refrigeration systems.

Review Student Learning Outcomes (SLOs) (<http://www.mtsac.edu/instruction/outcomes/sloinfo.html>) for this program.