

# Refrigeration, Air Conditioning & Heating

## PROGRAM DESCRIPTION



Refrigeration, Air Conditioning and Heating Technology provides students with opportunities to become proficient in the installation, maintenance, and repair of commercial refrigeration, air conditioning, and heating equipment. Special emphasis is placed on trouble-shooting and problem solving. Energy efficiency and green concepts are reinforced throughout the curriculum.

Graduates of this program find employment in a variety of commercial and industrial settings, with refrigeration, air conditioning, and heating contractors, and in sales positions. These licenses or certifications are available to graduates of the program: Limited Electrician in Refrigeration License, EPA Refrigerant Certification, Oil Burner Journeyman License, Propane/Natural Gas License.

## KEY LEARNING OBJECTIVES

Graduates will be certified in the following:

- EPA Refrigerant Certification, "Universal Technician" category
- CETP Gas Certification that leads to a State of Maine Gas Technician License

Graduates will meet:

- Full educational requirements and partial field experience requirements for State of Maine licensing as journeyman oil burner technicians.
- Partial educational and field experience requirements for State of Maine licensing as limited refrigeration electricians.

Graduates with the Associate in Applied Science Degree in Refrigeration, Air Conditioning and Heating will function at an entry-level position as a technician for installing, repairing, and servicing refrigeration, air conditioning, and heating equipment in the following areas:

- Apply the fundamentals related to the installation of refrigeration, air conditioning and heating equipment.
- Follow State and National codes involving refrigeration, air conditioning and heating equipment.
- Safely work with tools and test instruments to service refrigeration, air conditioning and heating equipment.
- Demonstrate the skills to troubleshoot refrigeration, air conditioning and heating equipment.
- Apply the skills for pipe fitting techniques related to soldering, brazing and pipe threading.

## PREREQUISITES

**AAS Degree**-high school level Algebra I required. Algebra II, Geometry and Physics or Chemistry with Lab desired.

**Certificate**-high school level Algebra I required.

*STILL IN HIGH SCHOOL? Concurrent enrollment agreements with many high schools and technical education centers are available. Information can be found on <http://www.emcc.edu/academics/programs/dual-enrollment/>.*



### Programs of Study

Automotive  
Building Construction  
Business Management-Career Option  
Business Management-Transfer Option  
Business Management-Small Business  
Career Studies  
Computer Systems Technology  
Criminal Justice  
Culinary Arts  
Diesel, Truck & Heavy Equipment  
Digital Graphic Design  
Early Childhood Education  
Education-Career & Technical Ed  
Education-Elementary Ed  
Education-Secondary Ed  
Electrical and Automation  
Electricians Technology  
Emergency Medical Services  
Fine Woodworking & Cabinet Making  
Fire Science  
Human Services  
Liberal Studies  
Medical Assistant  
Medical Office-Coding Option  
Medical Office-Health Care Secretary  
Medical Radiography  
Nursing  
Outdoor Recreation & Tourism  
Plumbing  
Refrigeration, Air Conditioning & Heating  
Restaurant & Food Service Management  
Surgical Technology  
Trade & Technical Occupations  
Welding

### Admissions Office—EMCC

354 Hogan Road

Bangor, ME 04401

Phone: 207-974-4680

Toll-Free: 800-286-9357 (in Maine)

FAX: 207-974-4683

Email: [admissions@emcc.edu](mailto:admissions@emcc.edu)

[www.emcc.edu](http://www.emcc.edu)

## REFRIGERATION, AIR CONDITIONING & HEATING Associate in Applied Science Degree

### FIRST SEMESTER

RAH 103	Refrigeration & Air Conditioning Lab I	2
RAH 113	Refrigeration Components & Physical Principles	2.5
RAH 123	Refrigeration Systems & Flow Controls	2.5
RAH 133	RAH Electricity I	3
ENG 101	College Composition	3
MAT 113	Technical Mathematics I	3

### CREDITS

### SECOND SEMESTER

RAH 104	Refrigeration & Air Conditioning Lab II	2
RAH 138	RAH Electricity II & Motors	3
RAH 144	Commercial Refrigeration Systems I	2.5
RAH 147	Commercial Refrigeration Systems II	2.5
RAH 171	HVAC Print Reading	2
MAT 114	Technical Mathematics II	3
SPE 101	Oral Communication	3

### CREDITS

### THIRD SEMESTER

RAH 203	Refrigeration & Air Conditioning Lab III	2
RAH 234	RAH Controls I	3
RAH 264	Heat Pump Systems	2
RAH 272	Gas Heating Systems	3
ENG 215	Business and Technical Writing	3
PHY 108	Survey of Applied Physics	4

### CREDITS

### FOURTH SEMESTER

RAH 204	Refrigeration & Air Conditioning Lab IV	2
RAH 237	RAH Controls II & Transformers	3
RAH 283	HVAC Systems I	2.5
RAH 287	HVAC Systems II	2.5
PSY 211	Human Relations	3

### CREDITS

**TOTAL AAS DEGREE CREDITS** **64**



## REFRIGERATION Certificate

### FIRST SEMESTER

RAH 103	Refrigeration & Air Conditioning Lab I	2
RAH 113	Refrigeration Components & Physical Principles	2.5
RAH 123	Refrigeration Systems & Flow Controls	2.5
RAH 133	RAH Electricity I	3
ENG 101	College Composition	3
MAT 113	Technical Mathematics I	3

### CREDITS

### SECOND SEMESTER

RAH 104	Refrigeration & Air Conditioning Lab II	2
RAH 138	RAH Electricity II & Motors	3
RAH 144	Commercial Refrigeration Systems I	2.5
RAH 147	Commercial Refrigeration Systems II	2.5
RAH 171	HVAC Sketching and Print Reading	2
MAT 114	Technical Mathematics II	3
SPE 101	Oral Communication	3

### CREDITS

**TOTAL CERTIFICATE CREDITS** **34**

## DID YOU KNOW?

EMCC provides campus housing  
for over 260 students.



EMCC's Student Success Center  
offers tutoring services free of  
charge to our students.

 EMCC's Athletic Department  
sponsors many on-  
campus intramural  
sports and  
recreational events.

EMCC students enjoy small class  
sizes, supportive faculty,  
transferable courses and  
leadership/engagement  
opportunities all for under \$4,000  
per year

(most programs, based on 30 credit  
hours, in-state rate)

Campus tours are available.

Call 207-974-4857 or schedule an  
appointment through our website.

For more information or to apply  
online, visit us on the web at

[www.emcc.edu](http://www.emcc.edu)

Follow us on social media for the  
latest EMCC news!



[www.facebook.com/emccbanger](http://www.facebook.com/emccbanger)



@EMCCAdmissions

*EMCC is an equal opportunity/affirmative  
action institution and employer. For more info,  
please call 207-974-4633.*