



Heating, Ventilation, Air Conditioning, Refrigeration HVACR, and Energy Management Engineering Technology

FERRIS STATE
UNIVERSITY

COLLEGE OF ENGINEERING
TECHNOLOGY



The basic principles of thermodynamics, fluid mechanics, and heat transfer are the foundation for the study of Heating, Ventilating, Air Conditioning and Refrigeration (HVACR). The application of these principles provides the technology used to heat homes, cool offices, and preserve food. From a larger perspective, society could not exist without the services provided by HVACR professionals. Students at Ferris State University develop an understanding of these principles and when they graduate they serve the needs of society. Their education enables them to provide human comfort, food preservation, and manufacturing processes.

According to the Energy Information Administration, approximately 1/3 of energy in the United States is consumed by HVACR equipment, thus the primary focus of the HVACR programs at Ferris State University is energy management. Students learn to optimize system performance through proper design, maintenance, operation and control. They understand the potential their work has on reducing the impact on the environment.

Ferris State University is one of only two institutions in the United States that offers a Bachelor of Science degree in HVACR. After earning an Associate in Applied Science degree in HVACR Technology students may choose to continue their education by pursuing the Bachelor of Science in HVACR Engineering Technology. This program includes a two-year, upper-division curriculum that builds on the Associate in Applied Science degree and it is available both on campus and online to students throughout the United States and throughout the World.

The HVACR degrees provide quality education and training that emphasizes practical knowledge and prepares students to analyze, synthesize, and solve problems. The programs are conducted in the 72,000 square foot Granger Center that contains laboratories equipped with over 150 HVACR systems that provide a real-world learning environment.

With energy efficiency as a central theme the standards and fundamentals developed by the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) provide the foundation for instruction as students learn to maximize human comfort and environmental control while achieving maximum system performance and efficiency. Students perform energy and HVACR system audits for west Michigan businesses and industries and participate in the annual American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) competition.

STRENGTHS

- One of only two Bachelor of Science degree programs in HVACR in the United States
- Paid internships reinforce the practical hands-on approach of the programs
- The Granger Center was designed and built with student learning in mind
 - The mechanical room is located behind glass in the student commons area
 - All systems and equipment are exposed and each system is painted a unique color
 - All systems are instrumented for students to observe and monitor operation
- The Energy laboratory includes a 20-ton chiller, 35 horse-power boiler, two air handling units, a cooling tower and direct digital controls
- The Controls laboratory is one of the most extensive and complete controls laboratories in the United States
- A dominating award record at the annual ASHRAE Student Design Competition including eleven first place designs
- The curriculum was developed in conjunction with industry leaders to ensure the best educational opportunities possible
- Outstanding job placement rates with job opportunities throughout the United States

PROGRAM OFFERINGS

1. BACHELOR OF SCIENCE IN HVACR AND ENERGY MANAGEMENT ENGINEERING TECHNOLOGY

This degree program emphasizes practical, applied engineering principles to prepare students for productive careers in HVACR engineering, design, controls, commissioning, energy analysis, and sales. Under the guidance of industry experienced professors students develop skills in:

- Load calculations to determine building heating and cooling needs
- Analyzing system options for each application and selecting the most appropriate systems
- Design principles and processes
- Controls to operate mechanical systems according to a specified sequence of operation
- Commissioning to ensure that mechanical systems are operating at peak efficiency according to their design
- Energy audits and analysis

2. BACHELOR OF SCIENCE IN HVACR AND ENERGY MANAGEMENT ENGINEERING TECHNOLOGY (ON CAMPUS AND ONLINE)

The oncampus degree program is for full-time students and the online program is designed for working adults. The online degree program provides an opportunity for students to earn the Bachelor of Science degree from other locations.

OPTIONS FOR GRADUATES

Upon completion of the Bachelor of Science degree in HVACR Engineering Technology, graduates enter the field as applications engineers, project engineers, systems controllers, estimators, field technicians, systems representatives, control systems trainers and plant engineers. Graduates have careers with architecture or engineering firms, mechanical contractors, controls contractors, utility companies, and manufacturers.

RECOGNITION

- Students participating in the annual ASHRAE Student Design Competitions have compiled the following record:
 - Ten first place awards
 - Eight second place awards
 - Three third place awards
 - The record includes three straight years with first place finishes in two categories
 - * No other school has ever been awarded first place two years in a row
 - * No other school has ever been awarded first place in two categories in the same year
- Graduates are hired nationally by industry leaders including Johnson Controls, Honeywell, Siemens, Trane, Carrier, and York

ENROLLMENT

To apply online visit the web site:
www.ferris.edu/admissions/application

CONTACT INFORMATION

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