FERRIS STATE UNIVERSITY

HVACR Engineering Technology & Energy Management

Bachelor of Science

Milwaukee Area Technical College

Transfer Guide

The Bachelor of Science in Heating, Ventilation, Air Conditioning, and Refrigeration (HVACR) Engineering Technology and Energy Management is project focused and allows students the opportunity to gain valuable real-world experience calculating building HVACR loads, designing and programming building automation systems, managing commercial/industrial/institutional HVACR projects, balancing air and water systems, selecting primary and secondary equipment, and performing energy audits.

The program is available full-time at the main campus in Big Rapids, MI or part-time fully-online (with a week-long summer residency for labs).

General Admission Criteria

- Contact a Ferris Advisor at 231-591-3773 to discuss the differences between the main campus and online program requirements.
- * Denotes courses that must be completed (with a C or higher) prior to entry into the program

Transfer Students-Big Rapids

- Students must have completed the Associate of Applied Science (AAS) in HVACR Technology (HVACR) program at Ferris State University or an equivalent associate program at another institution.
- Combined college or university GPA of 2.50 (on a 4.00 scale) from all institutions attended.
- Successful completion of COMM 121, ENGL 150, (ENGL 211 or ENGL 250), (MATH 115 or MATH 116), a Natural Science with Lab and a Self and Society course, or transfer equivalent course of C or higher.

Transfer Students-Online

- Students must have completed the Associate of Applied Science (AAS) in HVACR or Related degree with HVAC work experience upon program approval.
- Combined college or university GPA of 2.50 (on a 4.00 scale) from all institutions attended.
- Successful completion of ENGL 150, (MATH 115 or MATH 116) and a Natural Science with Lab, or transfer equivalent course of C or higher.
- Recommended completion of (ENGL 211 or ENGL 250), or transfer equivalent course of C or higher.

Communication Competency

FSU Course	FSU Course Title	FSU Cr. Hrs.	CC Equiv.	Milwaukee Course Title	CC Cr. Hrs.
*COMM 121	Fundamentals of Public Speaking	3	SPEECH 201	Fundamentals of Speech	3
*ENGL 150	English 1	3	ENG 195 **or** ENG 201	Written Communication **or** English I	3 3
*ENGL 211 or ENGL 250	Industrial and Career Writing or English 2	3	ENG 197, ENG 208, **or** ENG 202	Technical Reporting Technical Communication **or** English II	3 3 3
ENGL 311	Advanced Technical Writing	3	No Equivalent	No Equivalent	0

Quantitative Literacy – See below or Official Pre-2016 Math SAT Score of 590 or Higher, Official Post-2016 Math SAT Score of 620 or Higher, or Official MATH ACT Score of 26 or Higher**.**

FSU Course	FSU Course Title	FSU Cr. Hrs.	CC Equiv.	Milwaukee Course Title	CC Cr. Hrs.
*MATH 115	Intermediate Algebra	3	MATH 200*	Intermediate Algebra	4
MATH 120	Trigonometry	3	MATH 202	Trigonometry	3
MATH 130	Advanced Algebra-Analytical Trig	4	MATH 197* **or** MATH 201 **and** MATH 202 **or** MATH 230* **or** MATH 260*	College Algebra & Trigonometry **or** College Algebra **and** Trigonometry **or** College Alg & Trigonometry **or** Basic Statistics	5 4 3 5 6

OR

FSU Course	FSU Course Title	FSU Cr. Hrs.	CC Equiv.	Milwaukee Course Title	CC Cr. Hrs.
*MATH 116	Intermediate Algebra-Num Trig	4	MATH 113 **and** MATH 114* **or** MATH 115*	College Technical Math 1A **and** College Technical Math 1B **or** Technical Math I	5
MATH 126	Algebra-Analytical Trigonometry	4	MATH 116	College Technical Math I	

Students are required to reach the Ferris MATH 126 or MATH 130 level. The path to Ferris MATH 126 is MATH 116 and MATH 126. The path to Ferris MATH 130 is MATH 115, MATH 120, and MATH 130.

Natural Sciences Competency – Two courses are required with a minimum of 6 credits: must have at least one lab course.

FSU Course	FSU Course Title	FSU Cr. Hrs.	CC Equiv.	Milwaukee Course Title	CC Cr. Hrs.
*Varies	Natural Sciences with Lab	4	Varies	Varies	4
Varies	Natural Sciences Elective	3	Varies	Varies	3

Culture Competency – Three courses are required with a minimum of 9 credits: must be from 2 different disciplines, have at least 1 at FSU 200 level or higher course.

FSU Course	FSU Course Title	FSU Cr. Hrs.	CC Equiv.	Milwaukee Course Title	CC Cr. Hrs.
Varies	Culture Electives – 100 level	3	Varies	Varies	3
Varies	Culture Electives – 100 level	3	Varies	Varies	3
Varies	Culture Electives – 200 level	3	Varies	Varies	3

Self and Society Competency – Three courses are required with a minimum of 9 credits: must be from 2 different disciplines, have at least 1 at FSU 200 level or higher course.

FSU Course	FSU Course Title	FSU Cr. Hrs.	CC Equiv.	Milwaukee Course Title	CC Cr. Hrs.
ECON 201	Principles of Microeconomics	3	ECON 201	Principles of Microeconomics	3
*Varies	Self & Society Elective – 100 level	3	Varies	Varies	3
Varies	Self & Society Elective – 100 level	3	Varies	Varies	3

Students are encouraged to work with an advisor to select appropriate general education courses or may visit www.ferris.edu/gened.

Diversity Competency – 2 Courses Required
If not met by courses taken for Culture, Self and Society, or MTA, a student must meet the following:

- 1 course with the Global Diversity attribute
- 1 course with the U.S. Diversity attribute

Major Requirements – 84 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	CC Equiv.	Milwaukee Course Title	CC Cr. Hrs.
*Varies	AAS in HVACR Technology or Equivalent	42	Varies	AAS Coursework	42
HVAC 285	HVAC System Design using BIM	2	No Equivalent	No Equivalent	0
HVAC 312	Control Theory - Application	4	No Equivalent	No Equivalent	0
HVAC 321	HVAC Air System Select Design	4	No Equivalent	No Equivalent	0
HVAC 325	HVAC Hydronic System Select Design	4	No Equivalent	No Equivalent	0
HVAC 342	Load Analysis - Energy Modeling	4	No Equivalent	No Equivalent	0
HVAC 350	Contracting Issues in HVACR	4	No Equivalent	No Equivalent	0
HVAC 393	Summer Internship	4	No Equivalent	No Equivalent	0
HVAC 415	Direct Digital Control	4	No Equivalent	No Equivalent	0
HVAC 451	Energy Audit and Analysis	4	No Equivalent	No Equivalent	0
HVAC 462	HVAC Primary Equip Selection	4	No Equivalent	No Equivalent	0
HVAC 499	Commercial HVAC System Design	4	No Equivalent	No Equivalent	0
Total Credits Required for Degree					**124**

No more than 90 credits may be transferred from Milwaukee Area Technical College to Ferris State University.

Program Delivery Locations and Contact Information:

Main Campus, Big Rapids
College of Engineering Technology
(231) 591-3773 | hvacrprogram@ferris.edu | www.ferris.edu/CET/built-env/hvacr/
Ferris Statewide - Online
(231) 591-2340 | online@ferris.edu | www.ferris.edu/online | Financial Aid Consortium Eligible

Select courses may be delivered online and/or in a mixed delivery format (i.e. a mix of online and face-to-face instruction at the Ferris Main Campus or at an off-campus location).

Steps to Apply

- Complete a free application at www.ferris.edu/apply.
  - Submit Official transcripts from every school attended to transfer@ferris.edu or
  - Ferris State University Admissions Office, 1201 S. State St, CSS 201, Big Rapids, MI 49307
- Submit Test Scores (if required)
  - ACT Scores; go to www.act.org. Ferris State University School Code: 1994
  - SAT, CLEP and AP Sores; go to www.collegeboard.org. Ferris State University School Code: 1222

Advising Notes
It is recommended that potential applicants meet with an advisor to review the degree, course schedule, and have any questions answered prior to completing an application. Students who are completing the MTA may have different general education course requirements for the particular degree selected. Meeting with a Ferris advisor prior to the selection of general education or elective course work may reduce the chance of completing a course that will not apply toward the selected degree. Once admitted, students must continue to meet with an advisor as they work toward graduation.

Transfer Student Orientation
All new students to Ferris State University are required to complete an orientation.

Reverse Transfer Agreement
The Community College and Ferris have entered into a partnership in order to work collaboratively and creatively to increase student completion of associate and bachelor degrees. The partners work together to provide a seamless transfer experience and increase student retention and completion at both the community college and Ferris.

Michigan Transfer Agreement (MTA)
Ferris participates in the Michigan Transfer Agreement (MTA). This agreement will facilitate the transfer of general education requirements from one Michigan institution to another. Students may complete the MTA as part of a degree program or as a stand-alone package. The MTA consists of a minimum of 30 general education credit hours as identified by the college or university.

Students transferring to Ferris with the Michigan Transfer Agreement (MTA) and entering a degree program will have met a 30-hour block of lower-level general education courses. However, this does not exempt students from completing program specific prerequisites or higher-level general education course requirements. Students should contact their advisor regarding classes that meet the MTA.

Students must work with their Ferris advisor to declare a Minor or Concentration and for selection of Directed Electives.

Disclaimer
This is a guide for students who plan to transfer to Ferris State University. This guide is not intended to be a contract with Ferris. The information on this guide is subject to change. **Students should contact their community college or Ferris to keep informed of changes.** Final responsibility for verifying all transfer information lies with the student. Please refer to effective and/or revised date on the bottom of this guide and the Ferris Catalog at www.ferris.edu/catalog.

Partners may contact the Transfer Services Center with questions or updates at transferguidesarticulations@ferris.edu.