

The HVEM degree addresses designing, retrofitting, testing, and balancing on a problem-solving level and prepares the HVEM engineering technologist to fill a wide technological gap between the service technicians and engineers. Challenging careers abound on a national level with firms who look for trained HVEM engineering technicians for a variety of positions: application and/or project engineering, systems control, estimating, engineering, field technician, systems reps, marketing, control systems training, and HVEM in-plant engineering.

Communication Competency Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	OCC Equiv.	OCC Course Title	OCC Cr. Hrs.
ENGL 150	English 1	3	ENG 1510	Composition 1	3
ENGL 250	English 2	3	ENG 1520	Composition 2	3
COMM 121	Fundamentals of Public Speaking	3	COM 1600	Fundamentals of Speech	3
ENGL 311	Advanced Technical Writing	3	No Equivalent	No Equivalent	No Equivalent

Quantitative Literacy Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	OCC Equiv.	OCC Course Title	OCC Cr. Hrs.
MATH 115	Intermediate Algebra	3	MAT 1150	Intermediate Algebra	4
MATH 120	Trigonometry	3	MAT 1560	Trigonometry	3
MATH 130	Adv. Algebra-Analytical Trig.	4	MAT 1630	College Algebra& Trigonometry	4

OR

FSU Course	FSU Course Title	FSU Cr. Hrs.	OCC Equiv.	OCC Course Title	OCC Cr. Hrs.
MATH 126	Algebra & Analytical Trig.	4	No Equivalent	No Equivalent	No Equivalent

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

Natural Sciences Competency Requirements - Select courses from the following subject areas: Astronomy, Biology, Chemistry, Geology, Physical Science - 1 course must have a lab

FSU Course	FSU Course Title	FSU Cr. Hrs.	OCC Equiv.	OCC Course Title	OCC Cr. Hrs.
Varies	FSU General Education - Natural Sciences Electives	6	Varies	Varies	Varies

Self and Society Competency Requirements – Minimum 9 credits from 2 different disciplines with 1 course at 200 level or higher

FSU Course	FSU Course Title	FSU Cr. Hrs.	OCC Equiv.	OCC Course Title	OCC Cr. Hrs.
Varies	FSU General Education – Self and Society Competency	6	Varies	Varies	Varies
ECON 201	Principles of Microeconomics	3	ECO 2620	Economics 2	3

Culture Competency Requirements - Minimum 9 credits from 2 different disciplines with 1 course at 200 level or higher – Consult advisor for assistance

FSU Course	FSU Course Title	FSU Cr. Hrs.	OCC Equiv.	OCC Course Title	OCC Cr. Hrs.
Varies	FSU General Education - Culture Electives	9	Varies	Varies	Varies

[Ferris State University General Education Courses](#)

Students are encouraged to work with an advisor to select appropriate general education courses

General Admission Criteria

To be admitted to this degree, students must have completed the Associate of Applied Science Degree in an HVACR Engineering or related technical area or equivalent with a minimum GPA of 2.5 (on a 4.0 scale), and completion or competency in the following Ferris courses or their direct equivalents: ENGL 150, ENGL 250 or ENGL 211, MATH 115 or MATH 116, and four credit hours in a science course (lab or non-lab). Official transcripts from all accredited colleges/universities must be submitted with the Ferris application. Financial aid is available and may include concurrent enrollment at both institutions.

Major Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	OCC Equiv.	OCC Course Title	OCC Cr. Hrs.
HVAC 285	HVAC System Design using BIM	2	No Equivalent	No Equivalent	No Equivalent
HVAC 312	Control Theory & Application	4	No Equivalent	No Equivalent	No Equivalent
HVAC 321	HVAC Air Side System Select Design	4	No Equivalent	No Equivalent	No Equivalent
HVAC 325	HVAC Hydronic System Select Design	4	No Equivalent	No Equivalent	No Equivalent
HVAC 342	Load Calculation and Energy Code	4	No Equivalent	No Equivalent	No Equivalent
HVAC 350	Contracting Issues in HVACR	4	No Equivalent	No Equivalent	No Equivalent
HVAC 393	Summer Internship	4	No Equivalent	No Equivalent	No Equivalent
HVAC 415	Direct Digital Control	4	No Equivalent	No Equivalent	No Equivalent
HVAC 451	Energy Audit and Analysis	4	No Equivalent	No Equivalent	No Equivalent
HVAC 462	HVAC Primary HVAC Equipment Selection	4	No Equivalent	No Equivalent	No Equivalent
HVAC 499	Commercial HVAC System Design	4	No Equivalent	No Equivalent	No Equivalent
HVAC	Associate's Degree - approved	42	No Equivalent	No Equivalent	No Equivalent

Total Credits Required for Degree	124
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Program Contact Information:

Main Campus, Big Rapids

College of Engineering Technology

(231) 591-2890 | (231) 591-2608 | [Ferris HVACR Website](#)

Ferris Online

(800) 562-9130 | (231) 591-2340 | [Ferris Online Email](#)

[Transfer Partnerships Website](#)

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.

Online Learning

Select courses 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). The "Online Readiness Tutorial" is required for students who register for an online *course* or are completing an online *degree*. Students must demonstrate competency in Blackboard skills. This may be done by taking a tutorial and quiz, or, for students who have already taken and passed online courses, they can submit a waiver request. Students should check with the department that offers the class to determine its particular needs and/or the Ferris advisor regarding registration for online course work.

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.