Mechanical Engineering Technology

Bachelor of Science Degree

Southwestern Michigan College (SMC)

Transfer Guide

The Mechanical Engineering Technology program prepares students for a broad range of occupations and challenges. Beginning with foundation courses in math, applied science, CAD, manufacturing processes and communication, students move on to the applied engineering courses that give them a solid technical background for their careers. Students develop strong analytic and problem-solving skills. Their understanding of the principles taught in the classroom is enhanced with many hands-on labs and real-world applications provided by faculty with extensive industrial experience.

The Bachelor of Science in Mechanical Engineering Technology is accreditated by the Engineering Technology Accreditation Commission of ABET Accreditation (ETAC-ABET), http://www.abet.org.

Communication Competency Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	SMC Equiv.	SMC Course Title	SMC Cr. Hrs.
COMM 121	Fundaments of Public Speaking	3	SPEE 102	Fundamentals of Public Speaking	3
ENGL 150	English 1	3	ENGL 103	English 1	3
ENGL 250	English 2	3	ENGL 104	English 2	3
ENGL 311	Advanced Technical Writing	3	No Equivalent	No Equivalent	No Equivalent

Quantitative Literacy Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	SMC Equiv.	SMC Course Title	SMC Cr. Hrs.
MATH 116	Intermediate Algebra-Numerical Trigonometry	4	MATH 131*	Intermediate Algebra	4

Natural Sciences Competency Requirements - 1 course with lab

FSU Course	FSU Course Title	FSU Cr. Hrs.	SMC Equiv.	SMC Course Title	SMC Cr. Hrs.
PHYS 211	Introductory Physics 1	4	PHYS 101	Introductory Physics 1	4
PHYS 212	Introductory Physics 2	4	PHYS 102	Introductory Physics 2	4

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

FSU Course	FSU Course Title	FSU Cr. Hrs.	SMC Equiv.	SMC Course Title	SMC Cr. Hrs.
Varies	FSU General Education – Self and Society Competency	9	Varies	Varies	9

Culture Competency Requirements - Minimum 9 credits from 2 different disciplines with 1 at 200 level or higher

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

Additional General Education Requirements

FSU Course	FSU Course Title	FSU Cr. Hrs.	SMC Equiv.	SMC Course Title	SMC Cr. Hrs.
MATH 126	Algebra-Analytical Trigonometry	4	MATH 136*	Adv Algebra and Analytical Trig	4
MATH 220	Analytical Geometry - Calculus 1	4	MATH 141	Analytical Geometry and Calculus 1	4
MATH 230	Analytical Geometry - Calculus 2	4	MATH 142	Analytical Geometry and Calculus 2	4
CHEM 114	Intro to Gen Chemistry	4	CHE 101	Introduction to Chemistry	4

Ferris State University General Education Program

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

* MATH There may be several options in math that lead up to calculus. The equivalents shown above are not exact matches. Consultation with a counselor at the community college is recommended.

Major Requirements – 48 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	SMC Equiv.	SMC Course Title	SMC Cr. Hrs.
MECH 111	MET Seminar	1	No Equivalent	No Equivalent	No Equivalent
MECH 122	Computer Apps 1 for Technology	2	ISYS 110	Computer Apps 1 for Technology	2
MECH 211	Fluid Mechanics	4	No Equivalent	No Equivalent	No Equivalent
MECH 212	Kinematics of Mechanisms	2	No Equivalent	No Equivalent	No Equivalent
MECH 222	Machine Design	4	No Equivalent	No Equivalent	No Equivalent
MECH 223	Thermodynamics	3	No Equivalent	No Equivalent	No Equivalent
MECH 311	Finite Element Analysis /Solid Modeling	2	No Equivalent	No Equivalent	No Equivalent

Major Requirements continued

FSU Course	FSU Course Title	FSU Cr. Hrs.	SMC Equiv.	SMC Course Title	SMC Cr. Hrs.
MECH 322	Computer Apps 2 for Technology	2	No Equivalent	No Equivalent	No Equivalent
MECH 330	Heat Transfer	3	No Equivalent	No Equivalent	No Equivalent
MECH 332	Mechanical Measurements/Mechatronics	3	No Equivalent	No Equivalent	No Equivalent
MECH 340	Statics and Strengths of Mat'ls	4	No Equivalent	No Equivalent	No Equivalent
MECH 341	Statics and Strengths of Matl's Lab	1	No Equivalent	No Equivalent	No Equivalent
MECH 360	Dynamics	3	No Equivalent	No Equivalent	No Equivalent
MECH 393	Industrial Internship	4	No Equivalent	No Equivalent	No Equivalent
MECH 421	MET Senior Lab	4	No Equivalent	No Equivalent	No Equivalent
MECH 440	Noise and Vibration	3	No Equivalent	No Equivalent	No Equivalent
MECH 499	Senior Project	3	No Equivalent	No Equivalent	No Equivalent

Technical Related – 26 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	SMC Equiv.	SMC Course Title	SMC Cr. Hrs.
EEET 201	Electrical Fundamentals	3	No Equivalent	No Equivalent	No Equivalent
ETEC 140	Engineering Graphics	3	INTE 140 and CADD 101	Blueprint Reading and Introduction to Cad / Auto Cad	3
MFGT 150	Manufacturing Process	2	MACH 121	Manufacturing Processes	2
MATL 240	Intro to Material Science	4	No Equivalent	No Equivalent	No Equivalent
MATL 341	Material Selection – Metals	3	No Equivalent	No Equivalent	No Equivalent
MFGE 341	Quality Science Statistics	3	MATH 150	Quality Science Statistics	3
MFGE 423	Engineering Economics	2	No Equivalent	No Equivalent	No Equivalent
Varies	Approved Technical Electives*	6	No Equivalent	No Equivalent	No Equivalent

*Any combination of six or more credits of advisor approved technical electives may be applied to degree.

Total Credits Required for Degree	**132 - 133**

Program Contact Information:

Main Campus, Big Rapids
College of Engineering Technology
(231) 591-2755 | FSU Mechanical Engineering Webpage | Mechanical Engineering Email
Transfer Partnerships Website

Delivery Locations
This degree and the Ferris courses are offered at the following locations:

- Ferris State University, Main Campus, Big Rapids
- 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).

General Admission Criteria
New Students

- Completion of the AAS degree for Mechanical Engineering Technology with a 2.5 GPA in Math, 2.7 in major, and MATH 216/220 competency.

Transfer Students

- Contact the Mechanical Engineering Technology office to discuss options.
- Combined college or university GPA of 2.35 (on a 4.0 scale) from all institutions attended (GPA is based on completion of 12 credit hours or more). It is highly recommended that transfer credits include the FSU equivalency of ENGL 150, MATH 115, and the FSU equivalency of a social awareness or cultural enrichment course OR general education requirements. Developmental courses are not considered in computing the GPA requirement.
- Transfer equivalency for FSU ENGL 150 or placement during the first semester at FSU that would require an ACT English score of 16 or higher; Compass score 70 – 100.
- Transfer equivalency for FSU MATH 115 or placement during the first semester at FSU that would require an ACT Math score of 19 or higher; Compass Algebra score 46 - 74 and HS Algebra with 2.0.

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.