

Muskegon Community College (MCC)
Transfer Guide

The Bachelor of Science in Manufacturing Engineering Technology allows students to choose from two different concentrations, Process Development or Quality.

The Manufacturing Engineering Technology with Process Development Concentration offers students the opportunity to make their company's products better, safer and less expensive. Students work with state-of-the-art computers and equipment. Ferris students learn to identify and select materials based on production requirements and work closely with computer-aided design equipment (CAD/CAM). They conduct time studies, complete cost estimates, aid in solving manufacturing problems, formulate plant layout requirements, understand management control systems, justify and select quality equipment and automated systems, and design a total product manufacturing system. Specific entry-level positions include manufacturing engineer, process engineer, production engineer, tool engineer, industrial engineer, and quality engineer.

The Manufacturing Engineering Technology with Quality Concentration offers students the opportunity to improve the quality planning and performance for their company. Students learn to apply statistical tools such as SPC, sampling, gauge R&R studies, and Design of Experiments. They develop control plans, FMEA's, and learn to perform quality audits. Graduates of the program are prepared to assume technical and leadership positions in all areas of quality within a variety of industries. Graduates are prepared to advance into such positions as a quality engineer, quality manager, plant manager, and project engineer.

The Manufacturing Engineering Technology program is offered as a full-time program at the Big Rapids location and as a part-time program with evening classes at the Grand Rapids location. The Grand Rapids rotation begins each Fall semester.

General Admission Criteria

New Student Admission Requirements for incoming freshman refer to the Ferris Catalog www.ferris.edu/catalog.

Transfer Students

- Minimum 57 transferable credit hours (C or higher) from an accredited college or university.
- Combined college or university GPA of 2.50 (on a 4.00 scale) from all institutions attended.
- Successful completion of the following courses or transfer equivalent courses of a C grade or higher PRIOR to admission into the program (courses are included in the minimum 57 transferable semester credits hours requirement). Students pursuing the Quality Concentration do not need to complete MFGT 150 and PDET 122. Courses listed in parentheses are MCC equivalents.

COMM 121 (COM 201)	MECH 122 or ISYS 105 (AMT 129 or CIS 110)
ENGL 150 (ENG 101)	Natural Science Competency course (preferably Chemistry)
ENGL 211 (BCOM 102) or ENGL 250 (ENG 102)	Culture Competency Course
MATH 126 (MATH 111 & MATH 112) or MATH 130 (MATH 161)	Self and Society Competency Course
MATL 240 (MET 201)	Twelve (12) Technical Elective credits
MFGT 150 (MT 101)	
PDET 122 (CAD 250)	

*Denotes courses needed PRIOR to admission.

Communication Competency – If the Process Development Concentration (PDV) is chosen, MFGE 324, 393, and 421 are major and concentration courses that are also considered Communication Across the Curriculum (CATCs) courses and satisfy the upper-level Communication requirement. If the Quality Concentration (QTY) is chosen, the upper-level Communication requirement is met by ENGL 311.

FSU Course	FSU Course Title	FSU Cr. Hrs.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
*COMM 121	Fundamentals of Public Speaking	3	COM 201	Public Speaking	3
*ENGL 150	English 1	3	ENG 101	English Composition	3
*ENGL 211 or ENGL 250	Industrial and Career Writing or English 2	3	BCOM 102 or ENG 102	Adv Business-Technical Comm or English Composition	3
ENGL 311 or ENGL 321	Advanced Technical Writing or Advanced Composition (Consult Ferris advisor before taking ENGL 311 or ENGL 321)	3	No Equivalent	No Equivalent	0

Quantitative Literacy

FSU Course	FSU Course Title	FSU Cr. Hrs.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
*MATH 126 or MATH 130	Algebra & Analytical Trigonometry or Pre-Calculus	4	MATH 111 & MATH 112	Algebra / Coord Geometry & Trigonometric Functions	8
MATH 220	Analytical Geometry Calculus 1	4	MATH 161	Calculus 1	4

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

FSU Course	FSU Course Title	FSU Cr. Hrs.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
PHYS 211	Introduction to Physics 1	4	PHYS 201	College Physics 1 Lecture & Lab	5
*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.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
*Varies	Culture Electives	3	Varies	Varies	3
Varies	Culture Electives	6	Varies	Varies	6

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 and have at least 1 Self and Society Foundation course.

FSU Course	FSU Course Title	FSU Cr. Hrs.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
*Varies	Self and Society Electives	3	Varies	Varies	3
Varies	Self and Society Electives	6	Varies	Varies	6

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

College Requirements – 83 Credits Required

Major Requirements – 32 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
MFGE 311	Industrial Engineering	4	No Equivalent	No Equivalent	0
MFGE 321	Metrology	3	No Equivalent	No Equivalent	0
MFGE 322	Production Processes	3	No Equivalent	No Equivalent	0
MECH 340	Statics and Strengths of Materials	4	No Equivalent	No Equivalent	0
MFGE 341	Quality Science Statistics	3	No Equivalent	No Equivalent	0
MFGE 342	Statistical Process Engineering	3	No Equivalent	No Equivalent	0
MFGE 354	Lean Manufacturing	3	No Equivalent	No Equivalent	0
MFGE 393	Internship in Manufacturing Engineering	4	No Equivalent	No Equivalent	0
MFGE 423	Engineering Economics	2	No Equivalent	No Equivalent	0
MFGE 442	Design or Experiments	3	No Equivalent	No Equivalent	0

Concentration 18 – 20 Credits Required. Choose one. (Advisor Approval)

Process Development Concentration – 20 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
MFGE 312	CNC and CAM	4	No Equivalent	No Equivalent	0
MFGE 324	Principles of Process Planning 1	3	No Equivalent	No Equivalent	0
PLTS 325	Plastics Technology	2	No Equivalent	No Equivalent	0
MFGE 411	Principle of Process Planning 2	2	No Equivalent	No Equivalent	0
WELD 416	Production Welding Processes	2	No Equivalent	No Equivalent	0
MFGE 421	Automation and Systems Design	4	No Equivalent	No Equivalent	0
MFGE 422	Manufacturing Facilities Planning	3	No Equivalent	No Equivalent	0

Quality Concentration – 18 Credits Required (Only offered at Grand Rapids location)

FSU Course	FSU Course Title	FSU Cr. Hrs.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
ENGL 311	Advanced Technical Writing	3	No Equivalent	No Equivalent	0
MATL 341	Material Selection Metals	3	No Equivalent	No Equivalent	0
MFGE 443	Continuous Improvement	3	No Equivalent	No Equivalent	0
MFGE 444	Quality Auditing	3	No Equivalent	No Equivalent	0
MFGE 446	Design of Experiments 2	3	No Equivalent	No Equivalent	0
MFGE 447	Quality Planning	3	No Equivalent	No Equivalent	0

Electives – 31 to 33 Credits Required (Consult Ferris Advisor)

The credits required may vary depending on the courses taken. In order to graduate with a bachelor's degree, a student must have a minimum of 120 credits. The electives required for each student may vary depending on courses taken. Based on how a student meets the programmatic requirements, they may need more or less than 31 to 33 credits of elective courses to meet the required 120 credit minimum. *The total number of elective credits required depends on the chosen concentration in the Concentration section.*

FSU Course	FSU Course Title	FSU Cr. Hrs.	MCC Equiv.	MCC Course Title	MCC Cr. Hrs.
*MECH 122 or ISYS 105	Computer Apps 1 for Tech or Intro to Microsystems Software	3	AMT 129 or CIS 110	Introduction to Technology or Computer Concepts	3
*MATL 240	Intro to Material Science	4	MET 201	Metallurgy	3
*MFGT 150	Manufacturing Processes	2	MT 101	Basic Machining	4
*PDET 122	Parametric Modeling	3	CAD 250	Introduction to Solidworks	3
*Electives	Technical Electives	12	Varies	Varies (Consult Advisor)	12
Electives	General Electives	7-9	Varies	Varies (Consult Advisor)	7-9

Total Credits Required for Degree	120 - 124
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No more than 90 credits may be transferred from the community college to Ferris State University.

Program Delivery Locations and Contact Information:

Main Campus, Big Rapids

College of Engineering Technology

(231) 591-2511 | manufacturingdegrees@ferris.edu | www.ferris.edu/cet

Ferris Statewide – Muskegon*

(616) 451-4777 | FerrisMuskegon@ferris.edu | www.ferris.edu/statewide | [Financial Aid Consortium Eligible](#)

*Muskegon students take their Ferris classes at the Grand Rapids location

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 Scores; 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.