# FERRIS STATE UNIVERSITY

## MANUFACTURING ENGINEERING TECHNOLOGY TRANSFER GUIDE FOR MUSKEGON COMMUNITY COLLEGE

**Ferris Program:** Manufacturing Engineering Technology
**Degree Type:** Bachelor of Science
**Ferris College:** College of Engineering Technology
**Transfer School:** Muskegon Community College (MUSKCC)
**Consortium Eligible:** Yes
**Total Credits Required:** 121-125
**Catalog Year:** 2024-2025

## GENERAL EDUCATION REQUIREMENTS — *40 Credits Required*

Students are encouraged to work with an advisor to select appropriate general education courses. 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 and 1 course with the U.S. Diversity attribute.
Visit the Ferris State general education page for more information.

### 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.

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| COMM 121 | Fundamentals of Public Speaking | 3 | COM 201 |
| ENGL 150 | English 1 | 3 | ENG 101 |
| ENGL 211 or<br>ENGL 250 | Industrial and Career Writing or English 2 | 3 | BCOM 102 or<br>ENG 102 |
| ENGL 311 or<br>ENGL 321 or (MFGE 324 and MFGE 393 and MFGE 421) | Advanced Technical Writing or<br>Advanced Composition or Advanced Business Writing or (Principles of Process Planning 1 or Internship in Manufacturing Engineering or Automation and Systems Design) | 3 | No Equivalent |

### Quantitative Literacy Competency

Requirements for Quantitative Literary Competency can be met with the following:

- Official Pre-2016 Math SAT Score of 560 or Higher
- Official Post-2016 Math SAT Score of 580 or Higher
- Official Math ACT Score of 24 or Higher

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| MATH 220 | Analytical Geometry and Calculus 1 | 4 | MATH 161 |

### Natural Sciences Competency

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

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| PHYS 211 | Introductory Physics 1 | 4 | PHYS 201 |
| Varies | Natural Science Electives | 2 | Varies |

### Culture Competency

Three courses are required with a minimum of 9 credits: must be from two different disciplines and have at least one at FSU 200 level or higher course.

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| Varies | Culture Electives | 9 | Varies |

### Self and Society Competency

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

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| Varies | Self and Society Electives | 9 | Varies |

## COLLEGE REQUIREMENTS – *83 Credits Required*

### Major Courses

32 Credits Required.

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| MFGE 311 | Industrial Engineering | 4 | No Equivalent |
| MFGE 321 | Metrology | 3 | No Equivalent |
| MFGE 322 | Production Processes | 3 | No Equivalent |
| MECH 340 | Statics and Strengths of Materials | 4 | No Equivalent |
| MFGE 341 | Quality Science Statistics | 3 | No Equivalent |
| MFGE 342 | Statistical Process Engineering | 3 | No Equivalent |
| MFGE 354 | Lean Manufacturing | 3 | No Equivalent |

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| MFGE 393 | Internship in Manufacturing Engineering | 4 | No Equivalent |
| MFGE 423 | Engineering Economics | 2 | No Equivalent |
| MFGE 442 | Design of Experiments 1 | 3 | No Equivalent |

### Electives

31-33 Credits Required. 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.

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| MECH 122 or<br>ISYS 105 | Computer Applications 1 for Technology or Introduction to Microcomputer Systems and Software | 2 or 3 | AMT 129 or<br>CIS 110 |
| MATH 126 or MATH 130 | Algebra and Analytic Trigonometry or Advanced Algebra and Analytical Trigonometry | 4 | MATH 111 and MATH 112 or<br>MATH 141 |
| MATL 240 | Introduction to Material Science | 4 | MET 201 |
| MFGT 150 | Manufacturing Processes | 2 | MT 101 |
| PDET 122 | Parametric Modeling | 1 | CAD 250 |
| Varies | Technical Electives (Consult Advisor) | 12 | Varies |
| Varies | Electives (Consult Advisor) | 7-9 | Varies |

## CONCENTRATION – *18-20 Credits Required (Advisor Approval)*

Choose One Concentration

### Process Development Concentration (PDV)

20 Credits Required. Available at Both Big Rapids and Grand Rapids Campuses.

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| MFGE 312 | CNC and CAM | 4 | No Equivalent |
| MFGE 324 | Principles of Process Planning 1 | 3 | No Equivalent |

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| PLTS 325 | Plastics Technology | 2 | No Equivalent |
| MFGE 411 | Principles of Process Planning 2 | 2 | No Equivalent |
| WELD 416 | Production Welding Processes | 2 | No Equivalent |
| MFGE 421 | Automation and Systems Design | 4 | No Equivalent |
| MFGE 422 | Manufacturing Facilities Planning | 3 | No Equivalent |

### Quality Concentration (QTY)

18 Credits Required. Available at Grand Rapids Campus Only.

| Ferris Course | Ferris Course Title | Ferris Credit Hours | Transfer Course |
|---|---|---|---|
| ENGL 311 | Advanced Technical Writing | 3 | No Equivalent |
| MATL 341 | Material Selection Metals | 3 | No Equivalent |
| MFGE 443 | Continuous Improvement | 3 | No Equivalent |
| MFGE 444 | Quality Auditing | 3 | No Equivalent |
| MFGE 446 | Design of Experiments 2 | 3 | No Equivalent |
| MFGE 447 | Quality Planning | 3 | No Equivalent |

## PROGRAM CONTACT INFORMATION

College of Engineering Technology
Manufacturing Engineering Technology Programs
(231) 591-2511
ManufacturingDegrees@Ferris.edu

Ferris Statewide - Muskegon Community College
(616) 451-4777
FerrisMuskegon@Ferris.edu

## ADMISSION REQUIREMENTS

### New Student Admission Requirements

- The Manufacturing Engineering Technology, BS degree is only open to students who meet the Transfer Student Admission Requirements below.
- High school students interested in this program may apply to the Manufacturing Technology, AAS program.

### Transfer Student Admission Requirements

- Combined college or university GPA of 2.50 (on a 4.00 scale) from all institutions attended. Developmental courses will not be considered in computing the GPA requirement.

# Ferris State University

- Minimum 57 transferable semester credit hours (C or higher) from an accredited college or university, including technical courses, general and technical related courses.
- Successful completion of COMM 121, ENGL 150 and (ENGL 211 or ENGL 250), MATH 126 or MATH 130, MATL 240, MFGE 150, PDET 122, MECH 122 or ISYS 105, a Natural Science Competency course (preferably Chemistry), a Culture Competency course, a Self and Society Competency course, or transfer equivalent courses of C grade of higher.

## MORE INFORMATION

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 a statewide location).

To fulfill the residency requirement for a bachelor's degree a student must earn a minimum of 30 credits from Ferris State University.

### Steps to Apply

- Complete your free application.
- Submit official transcripts
  - Submit official transcripts from every school attended to Transfer@Ferris.edu
  - Or mail to:
    Ferris State University Admissions Office
    1201 S. State St., CSS 201
    Big Rapids, MI 49307
- Submit test scores (if required)
  - ACT Scores; go to the ACT website - Ferris State University School Code: 1994
  - SAT, CLEP and AP Sores; go to the College Board website - Ferris State University School Code: 1222

### Advising Notes

It is recommended that potential applicants meet with an advisor to review the degree, course schedule, transfer policies and have any questions answered prior to completing an application. Ferris accepts transfer courses in which the student earned a letter grade of "C" or better. Additional policies such as the Ferris Sunset and Residency Requirement should be discussed with a Ferris advisor. 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 coursework may reduce the chance of completing a course that will not apply toward the selected degree. Students must work with their Ferris advisor to declare a Minor or Concentration and for the selection of Directed Electives.

Once admitted, students are required to complete an orientation and should continue to meet with an advisor as they work toward graduation.

To schedule an appointment or for additional transfer resources and policies see our Transfer Resource page.

*Indicates an approved Ferris course substitution

### Reverse Transfer Agreement

Ferris has reverse transfer agreements with several Michigan Community Colleges. Under such agreement, Ferris will provide your official University transcript to a partner school you have attended, so that they may grant you an associate or bachelor's degree upon completion of sufficient and appropriate credit hours from both institutions. In turn, the degree-granting institution will provide Ferris with an updated transcript reflecting the newly earned credential.

## 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.

## Transfer Equivalencies Tools

The transfer equivalencies link is located in the Transfer Resources section at transfer.ferris.edu.

## Disclaimer

Transfer guides are not intended to be a contract with Ferris. The information in this guide is subject to change and is aligned with the catalog year listed above. Students should contact their community college and/or Ferris to keep informed of changes. Students' final responsibility for verifying all transfer information lies with the student. Please refer to the Ferris catalog for the most current curriculum.
Partners may contact the Office of Transfer and Secondary School Partnerships with questions or updates at TransferGuidesArticulations@Ferris.edu.