

Grand Rapids Community College (GRCC)  
Articulation Agreement and 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. Ferris has tailored the program for the part-time student by offering courses at night at the Advanced Technology Center in Grand Rapids. 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](http://www.ferris.edu/catalog)

**Transfer Student Admissions**

- Combined college or university GPA of 2.50 (on a 4.00 scale) from all institutions attended.
- 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 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 GRCC equivalents.
  - COMM 121 (COM 131)
  - Natural Science Competency course (preferably Chemistry)
  - ENGL 150 (EN 101) and ENGL 211 or ENGL 250 (EN 102)
  - Culture Competency course
  - MATH 126 (MA 110 & 108) or MATH 130 (MA 131)
  - Self and Society Competency course
  - MATL 240 (TE 114)
  - Twelve (12) technical elective credits from GRCC subject areas in DR, MN, EL, or EG; with up to six (6) technical elective credits from GRCC subject areas in CIS, HVA, or TR (other subject areas may be used with the approval of Ferris Advisor)
  - MFGT 150 (MN 119)
  - PDET 122 (DR 150 or DR 258 or DR 260)
  - MECH 122 (CIS 103) or ISYS 105 (CIS 103 or BA 145)

\*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.	GRCC Equiv.	GRCC Course Title	GRCC Cr. Hrs.
*COMM 121	Fundamentals of Public Speaking	3	COM 131	Fundamentals-Public Speaking	3
*ENGL 150	English 1	3	EN 101	English Composition 1	3
*ENGL 211 or ENGL 250	Industrial and Career Writing or English 2	3	No Equivalent or EN 102	No Equivalent or English Composition 2	3
ENGL 311 or ENGL 321	Advanced Technical Writing or Advanced Composition ( <i>Consult Ferris Advisor before taking ENGL 311 or ENGL 321</i> )	3	EN 249 or No Equivalent	Technical Writing or No Equivalent	3

## Quantitative Literacy

FSU Course	FSU Course Title	FSU Cr. Hrs.	GRCC Equiv.	GRCC Course Title	GRCC Cr. Hrs.
*MATH 126 or MATH 130	Algebra & Analytical Trigonometry or Pre-Calculus	4	MA 110 & 108 or MA 131	College Algebra & Trigonometry or Pre-Calculus	5 - 7
MATH 220	Analytical Geometry Calculus 1	4	MA 133	Calculus with Analytical Geometry 1	5

**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.	GRCC Equiv.	GRCC Course Title	GRCC Cr. Hrs.
PHYS 211	Introduction to Physics 1	4	PH 125	General Physics 1	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.	GRCC Equiv.	GRCC Course Title	GRCC 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 at least one Self and Society Foundation course.

FSU Course	FSU Course Title	FSU Cr. Hrs.	GRCC Equiv.	GRCC Course Title	GRCC 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](http://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.	GRCC Equiv.	GRCC Course Title	GRCC 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 (Advisor Approval) – 18 to 20 Credits Required. Choose one concentration.**

### Process Development Concentration (PDV) – 20 Credits Required

(Available at both Big Rapids Campus and Grand Rapids location)

FSU Course	FSU Course Title	FSU Cr. Hrs.	GRCC Equiv.	GRCC Course Title	GRCC 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	MN 220	Basic Plastics Processing	4
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 (QTY) – 18 Credits Required

(Only offered at Grand Rapids location)

FSU Course	FSU Course Title	FSU Cr. Hrs.	GRCC Equiv.	GRCC Course Title	GRCC Cr. Hrs.
ENGL 311	Advanced Technical Writing	3	EN 249	Technical Writing	3
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

**Ferris State University and Grand Rapids Community College – Manufacturing Engineering Technology – Articulation Agreement and Transfer Guide**  
Effective June 1, 2022 – June 1, 2025

Ferris State University is an equal opportunity institution. For information on the University's Policy on Non-Discrimination, visit [ferris.edu/non-discrimination](http://ferris.edu/non-discrimination).

### Electives – 31 to 33 Credits Required (Consult 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.	GRCC Equiv.	GRCC Course Title	GRCC Cr. Hrs.
*MECH 122 or ISYS 105	Computer Apps 1 for Tech or Intro to Micro Systems-Software	2 or 3	CIS 103 or BA 145	Introduction to Windows and Microsoft Office or Computer Applications in Business I	3
*MATL 240	Intro to Material Science	4	TE 114	Material Science	4
*MFGT 150	Manufacturing Processes	2	MN 119	Introductory Machine Operations	5
*PDET 122	Parametric Modeling	3	DR 150 or DR 258 or DR 260	Introduction to Solidworks or Introduction to Pro Engineer or Introduction to Catia	3
*Electives	Technical Electives (Consult Advisor)	12	Varies	Twelve (12) technical credits from the following subject areas: DR, MN, EL, or EG. Up to six (6) technical credits may be from the following subject areas: CIS, HVA, TR. Other subject areas may be used with the approval of Ferris.	12
Electives	Elective (Consult Advisor)	7-9	Varies	Varies	7-9
<b>Total Credits Required for Degree</b>					<b>120 - 124</b>

**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](mailto:manufacturingdegrees@ferris.edu) | [www.ferris.edu/cet](http://www.ferris.edu/cet)

#### Ferris Statewide – Grand Rapids

(616) 451-477 | [fsugr@ferris.edu](mailto:fsugr@ferris.edu) | [www.ferris.edu/statewide](http://www.ferris.edu/statewide) | [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](http://www.ferris.edu/apply).
  - Submit Official transcripts from every school attended to [transfer@ferris.edu](mailto: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](http://www.act.org). Ferris State University School Code: 1994
  - SAT, CLEP and AP Scores; go to [www.collegeboard.org](http://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](http://www.ferris.edu/catalog).

Partners may contact the Transfer Services Center with questions or updates at [transferguidesarticulations@ferris.edu](mailto:transferguidesarticulations@ferris.edu).

### Original Signed Articulation Agreement

The original, signed document is kept on file in the Office of Transfer and Secondary School Partnerships. To obtain a copy of the original, signed document, contact the Office of Transfer and Secondary School Partnerships at [transferguidesarticulations@ferris.edu](mailto:transferguidesarticulations@ferris.edu).

This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement. A signed copy of this Agreement delivered by facsimile, e-mail, or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Agreement.

### Indemnification

To the extent permitted by law, Ferris State University and Grand Rapids Community College agree to indemnify and hold one another harmless from any and all claims initiated by student participants, their parents, survivors, or agents, arising from any negligent acts or omission on the part of either institution or any of their employees.

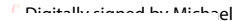
### Articulation Agreement

#### Effective Dates: June 1, 2022 - June 1, 2025

This Agreement shall commence as of June 1, 2022 and shall be for an initial term of three years. Minor updates to the agreement may be made during this time. This agreement may be renewed at the end of three years. Either party may terminate this agreement by providing the other party with written notice of the intent to terminate the agreement. The agreement shall terminate not less than one hundred eighty (180) days from the date of the termination notice, unless otherwise agreed in writing by both parties.

### Signatures

Ferris State University  
1201 S. State Street  
Big Rapids, MI 49307  
Phone: (231) 591-2000

 Digitally signed by Michael

Grand Rapids Community College  
143 Bostwick Ave. NE  
Grand Rapids, MI 49503  
Phone: (616) 234-4000

---

Michael Staley  
Dean  
College of Engineering Technology

---

Julie Parks  
Interim Dean  
School of Workforce Development

---

Mark Rusco  
Program Coordinator/Associate Professor  
Manufacturing Engineering Technology

---

Nate Spahn  
Department Head  
Manufacturing

\*Please Note: The signed version of the document is kept on file in the GRCC Instructional Support Office. The final signature was performed on 06/06/2022. For more information, please contact the Director of Transfer & Articulation Services at 616-234-3183.