

The need for people with a computer science background is very high and continues to grow. Virtually every organization relies heavily on computers. Computer scientists write programs, develop algorithms and design software. The field of computational mathematics combines knowledge of computer science with that of mathematics and is in great demand throughout the world.

**Communication Competency Requirements**

FSU Course	FSU Course Title	FSU Cr. Hrs.	GOCC Equiv.	GOCC Course Title	GOCC Cr. Hrs.
COMM 105 or COMM 121	Interpersonal Communication or Fundamentals of Public Speaking	3	COM 110 or COM 140 or COM 150	Interpersonal Communication or Fundamentals of Public Speaking	3
ENGL 150	English 1	3	COM 121	English 1	3
ENGL 250	English 2	3	COM 122	English 2	3
ENGL 311 or ENGL 321 or ENGL 323 or ENGL 325	Advanced Technical Writing or Advanced Composition or Proposal Writing or Advanced Business Writing	3	No Equivalent	No Equivalent	No Equivalent

**Natural Sciences Competency Requirements** – 2 courses required with a minimum of 6 credits: must have at least 1 lab course.

FSU Course	FSU Course Title	FSU Cr. Hrs.	GOCC Equiv.	GOCC Course Title	GOCC Cr. Hrs.
Varies	Natural Sciences Electives	6	Varies	Varies	6

**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.	GOCC Equiv.	GOCC Course Title	GOCC Cr. Hrs.
Varies	FSU General Education – Self and Society Competency Electives	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.	GOCC Equiv.	GOCC Course Title	GOCC Cr. Hrs.
Varies	FSU General Education - Culture Electives	9	Varies	Varies	9

[Ferris State University General Education Program](#) Students are encouraged to work with an advisor to select appropriate general education courses

**Applied Mathematics Core Requirements** – 32 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	GOCC Equiv.	GOCC Course Title	GOCC Cr. Hrs.
CPSC 130	Programming and Problem Solving	4	No Equivalent	No Equivalent	No Equivalent
CPSC 200	Object Oriented Programing	4	No Equivalent	No Equivalent	No Equivalent
MATH 220	Analytical Geometry & Calculus 1	4	NSM 161	Analytical Geometry-Calculus 1	4
MATH 230	Analytical Geometry & Calculus 2	4	NSM 162	Analytical Geometry-Calculus 2	4
MATH 251	Statistics for the Life Sciences	3	NSM 201	Statistics for the Life Sciences	3
MATH 320	Analytical Geometry & Calculus 3	4	NSM 261	Analytical Geometry-Calculus 3	4
MATH 322	Linear Algebra	3	NSM 262	Linear Algebra	3
MATH 330	Differential Equations	3	No Equivalent	No Equivalent	No Equivalent
MATH 340	Numerical Analysis	3	No Equivalent	No Equivalent	No Equivalent

**Major Requirements – Computer Science Emphasis** – 17 – 19 Credits Required

FSU Course	FSU Course Title	FSU Cr. Hrs.	GOCC Equiv.	GOCC Course Title	GOCC Cr. Hrs.
CPSC 300	Data Structures and Algorithms	4	No Equivalent	No Equivalent	No Equivalent
CPSC 340	Computer Organization	4	No Equivalent	No Equivalent	No Equivalent
MATH 328	Discrete Structures	3	No Equivalent	No Equivalent	No Equivalent
CPSC 320 or CPSC 330 or CPSC 442	Computer Simulation or Parallel Programming or Programming Language Concepts	3 4 3	No Equivalent	No Equivalent	No Equivalent

Major Requirements – Computer Science Emphasis continued on page 2

## Major Requirements – Computer Science Emphasis continued

FSU Course	FSU Course Title	FSU Cr. Hrs.	GOCC Equiv.	GOCC Course Title	GOCC Cr. Hrs.
CPSC 326	Computer Graphics	3	No Equivalent	No Equivalent	No Equivalent
ECNS 323	Real Time Operating Systems	4	No Equivalent	No Equivalent	No Equivalent
MATH 360	Operations Research	3	No Equivalent	No Equivalent	No Equivalent
MATH 440	Mathematics Modeling	3	No Equivalent	No Equivalent	No Equivalent

**Electives – To Meet the Minimum 120 Credits Required** Recommended electives include: CPSC 320, CPSC 330, and CPSC 442

<b>Total Credits Required for Degree</b>	<b>120</b>
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### Program Contact Information:

#### Main Campus, Big Rapids

#### College of Arts & Sciences

(231) 591-3660 | (231) 591-2565 | [Mathematics Website](#)

[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

- High school GPA of 2.5 (on a 4.0 scale)
- 17 ACT or 900 SAT

#### Transfer Students

- 2.0 overall GPA (on a 4.0 scale)
- 12 credits, including an English course and a Mathematics course

### 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.

### Graduation Requirements

#### In addition to meeting all the programmatic requirements, students must:

1. Meet University General Education requirements.
2. Earn a minimum of 120 credits.
3. Maintain a 2.00 or higher cumulative FSU GPA.
4. Earn 30 credits from FSU (Residency).
5. Earn 40 credits of 300 level or higher courses.
6. Maintain a 2.5 cumulative GPA for all MATH and CPSC course work in the major.

### 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.