

North Central Michigan College Transfer Guide

The Bachelor of Science in Biotechnology is designed to prepare students for a research-based career in the biological, medical, or agricultural sciences. The biotechnology program is heavily focused on the study of the interactions between biological molecules and how these interactions influence basic biological processes in bacteria, plants, and animals. The program, which is both challenging and rewarding, focuses on five aspects of the biomolecular sciences: molecular and cell biology, protein isolation and characterization, applied immunology, laboratory animal care and handling, and genomics and bioinformatics.

Approximately half of biotechnology graduates enter directly into the workforce and half enter directly into graduate or professional school. For those graduates that enter directly into the workforce, job opportunities exist in companies with research and development programs such as those involved in pharmaceutical, medical, or agricultural research. Graduates of the biotechnology program at Ferris are especially marketable because of the extensive hands-on lab experience included in upper-level laboratories that gives students real-world experience in a controlled laboratory setting.

General Admission Criteria

The first two years of the biotechnology program are preparatory and structured to provide a foundation for upper-level biotechnology courses. The core sequence of biotechnology coursework typically begins at the start of the student's junior year. This core sequence includes advanced courses that are designed to maximize a student's hands-on involvement in laboratory activities via small class sizes and a low student: faculty ratio. Admission to the core biotechnology sequence is based on performance in foundation courses. Official transcripts from all accredited colleges/universities must be submitted with the Ferris application.

Course Requirements

North Central Michigan College				Ferris State University		
Course	Ferris Equiv.	Ferris Course Title	Cr. Hrs.	Course	Ferris Course Title	Cr. Hrs.
ENG 111	ENGL 150	English 1	3	ENGL 311	Advanced Technical Writing	3
ENG 112	ENGL 250	English 2	3	or	or	
COM 111	COMM 121	Fundamentals of Public Speaking	3	ENGL 321	Advanced Composition	
or	or	or		or	or	
COM 170	COMM 105	Interpersonal Communication		ENGL 323	Proposal Writing	
MATH 150	MATH 220	Analytical Geometry-Calculus 1	4	MATH 251	Statistics for the Life Sciences	3
BIO 151	BIOL 121	General Biology 1	8	BIOL 375	Principles of Genetics	4
and	and	and		BIOL 386	Microbiology	5
BIO152	BIOL 122	General Biology 2		BIOL 470	Molecular Genetics	4
BIO 235	BIOL 205	Human Anatomy and Physiology	5	BIOL 471	Recombinant Lab	3
and				BIOL 472	Proteins	3
BIO 236				BIOL 473	Proteins Lab	3
CEM 121	CHEM 121	General Chemistry 1	5	BIOL 474	Advanced Cell	3
CEM 122	CHEM 122	General Chemistry 2	5	BIOL 475	Bioinformatics	3
CEM 212	CHEM 231	Quantitative Analysis	4	BIOL 476	Advanced Techniques	2
CEM 231	CHEM 321	Organic Chemistry 1	5	BIOL 491	Internship	3-6
CEM 232	CHEM 322	Organic Chemistry 2	5	CHEM 332	Biochemistry Lab 1	2
PHY 210	PHYS 211	Introductory Physics 1	4	CHEM 333	Biochemistry Lab 2	2
<i>NCMC</i>	<i>VARIES</i>	Cultural Enrichment Electives (one must be at FSU 200+ level)	9	CHEM 364	Biochemistry	4
<i>NCMC</i>	<i>VARIES</i>	Social Awareness Electives (one must be at FSU 200+ level) (must be from 2 different subject areas)	9	CHEM 474	Advanced Biochemistry	3

Credits Required for Degree 121

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.

Contact Information

**Big Rapids Campus
College of Arts & Sciences**

<http://www.ferris.edu/HTMLS/colleges/>

Jenice Winowiecki, Biology Advisor
(231) 591-2555 or wino2@ferris.edu

www.ferris.edu/transferservices

Delivery Locations

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

- Ferris State University, Big Rapids Campus, Big Rapids MI
- 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)

Transfer Student Orientation

All new students to Ferris State University are required to complete an orientation. Orientation for incoming freshmen is a one-day session that occurs on campus and includes class registration. Eligible transfer students have the option of completing an online orientation or attending an on campus session.

Advising Notes

It is recommended that potential students 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 any electives or general education classes shown above could 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 towards graduation.

Online Learning

Orientation is required for students who register for an online *course* or are completing an online *degree*. Students must demonstrate competency in FerrisConnect 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.

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.

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 the effective and/or revised date on the bottom of the guide.