



Biotechnology A.A.S.

Career Community: Science and Mathematics

Curriculum Code: 0212

Effective: Fall 2025 – Summer 2030

Purpose of the Major

The Biotechnology degree is a laboratory-intensive curriculum which emphasizes the wide-ranging applications of DNA technology including the preparation of gene libraries, Polymerase Chain Reaction forensic DNA methods and bioinformatics. Graduates will be able to work in many areas of biotechnology, such as human genetic disease research, improvement of disease-resistance in plants, enhanced crop production, pharmaceutical research, biological cleanup of environmental pollution, forensic science, or genome sequencing projects. Near the end of the degree, the Science Department will work with interested students to arrange for internships in university or industrial research laboratories to gain further experience. If you plan to transfer to a four-year school, please see an academic advisor before enrolling. Not all courses in this program transfer to all colleges as equivalent courses. Students planning to transfer should see an academic advisor before enrolling in any course. This program is designed for students interested in molecular biology, biochemistry, genetics, biotechnology, and forensic technologies. Completing this program prepares students to sit for the industry recognized credentials from BCSI (Bioscience Core Skills Institute evaluation) and BACE (Biotechnology Aptitude and Competency Exam).

Milestone

In addition to the required General Education courses in Math and English, completion of BIOL 127, BIOL 203, BIOL 204, CHEM 151, and CHEM 161 with a 2.0 or higher is a key component for success in completing this program. Knowledge obtained in these courses is the foundation for learning in other required courses. Students are encouraged to contact their faculty if they need additional assistance with learning the concepts presented in these courses.

Additional Information

A student must earn a minimum grade of 2.0 in all courses.

BIOL 260, BIOL 275, and CHEM 262 are only offered during Fall semester. BIOL 276 and ISCI 245 are only offered during Spring semester.

Contact Information

For further information, including career options, course substitutions and waivers, etc., contact the Science Department in the Arts and Sciences Building, Room 3203, telephone number 517-483-1092, or the Academic Advising Department, Gannon Building - StarZone, telephone number 517-483-1904.

Major Required Courses - *Some courses meet General Education requirements for Michigan Transfer Agreement (MTA). A minimum grade of 2.0 is required for General Education courses.*

Course Code	Course Title	Credit / Billing Hours
ACAD 100	First-Year Experience	1 / 1

Course Code	Course Title	Credit / Billing Hours
BIOL 127	Cell Biology	4 / 6
BIOL 203	Microbiology	3 / 3
BIOL 204	Microbiology Laboratory	1 / 3
BIOL 270	Human Genetics	3 / 3
BIOL 275	Molecular Biology I	4 / 6
BIOL 276	Molecular Biology II	4 / 6
CHEM 151	General Chemistry Lecture I	4 / 4
CHEM 152	General Chemistry Lecture II	3 / 3
CHEM 161	General Chemistry Lab I	1 / 3
CHEM 162	General Chemistry Lab II	1 / 3
CHEM 251	Organic Chemistry Lecture I	4 / 4
CHEM 262	Quantitative Analysis	3 / 6
COMM 120 or COMM 130 or COMM 200 or COMM 240 or COMM 260 or ENGL 122 or ENGL 132	Dynamics of Communication Fundamentals Public Speaking Small Group Communication Interpersonal Communication Nonverbal Communication Composition II Honors Composition II	3 / 3 3 / 3 3 / 3 3 / 3 3 / 3 4 / 4 4 / 4
ENGL 121 or ENGL 131	Composition I Honors Composition I	4 / 4 4 / 4
ISCI 245	S.T.E.M. Workplace Practices	4 / 6
MATH 126	Precalculus	5 / 5
STAT 215	Intro to Probability and Stats	4 / 4

Notes:

ACAD 100 may be waived when students meet one of the following College-approved waiver criteria:

- Completion of 12 college-level credits with minimum grades of 2.0 shown on the LCC transcript (including transfer, if applicable), or
- Employment in the field of, or a field related to, the degree being sought, or
- For Health Careers students, successful completion of CHSE 100.

Students wishing to waive ACAD 100 should contact their advisor.

Major Required Courses, Limited Choices – Humanities and Fine Arts or Social Sciences or Applied Social Sciences - *Select one from [LCC General Education - Applied Degrees, Humanities and Fine Arts or Social Sciences or Applied Social Sciences](#). A minimum grade of 2.0 is required for General Education courses.*

Major Required Courses, Limited Choice – *Select one*

Course Code	Course Title	Credit / Billing Hours
BIOL 128	Organismal Biology	4 / 6

Course Code	Course Title	Credit / Billing Hours
BIOL 260	Botany	4 / 6
CHEM 125	Basic Chemistry	4 / 4
CHEM 252	Organic Chemistry Lecture II	4 / 4
CHEM 272	Organic Chemistry Laboratory	2 / 6
CITF 110	Intro Computer Info Systems	3 / 3
CJUS 210	Intro to Forensic Science	3 / 3
PHYS 221	Introductory Physics I	4 / 6
SCIN 287	Science Technology Internship	2-4 / 2-4

Note: If choosing CHEM 125, take it before CHEM 151.

General Education – Applied Degrees, Recommended Courses

- English Composition or Applied English
Major Required Courses meet this requirement.
- English Composition (second course)/Communication or Applied Communication
Major Required Courses meet this requirement.
- Humanities and Fine Arts or Social Sciences or Applied Social Sciences
Major Required Limited Choice Courses meet this requirement.
- Mathematics or Applied Mathematics
Major Required Courses meet this requirement.
- Natural Sciences Lab or Applied Science and Technology Lab
Major Required Courses meet this requirement.

Additional Credits

After completing the course and credit requirements as noted on this pathway, students who fall short of the 60-credit minimum required for an Associate Degree may select any course(s) needed to reach 60 credits, except those courses noted in number 7 in the [Institutional Requirements for Associate Degrees](#). Students are encouraged to use Degree Works and meet with an Advisor to ensure all requirements are met and for course recommendations.

Minimum Total Credit Hours

60 credits / 78 billing hours

Recommended Course Sequence

Semester I (Fall)
ACAD 100
ENGL 121 or ENGL 131
CHEM 151 – Milestone course
CHEM 161 – Milestone course
MATH 126
Limited Choice if taking CHEM 125*

*If taking CHEM 125, take CHEM 151/161 during Spring, then take CHEM 152/162 during Summer.

Semester II (Spring)
COMM 120 or COMM 130 or COMM 200 or COMM 240 or COMM 260 or ENGL 122 or ENGL 132
BIOL 127 – Milestone course
CHEM 152
CHEM 162
ISCI 245

Semester III (Summer)
STAT 215
Limited Choice – Humanities and Fine Arts or Social Sciences or Applied Social Sciences

Semester IV (Fall)
BIOL 203 – Milestone course
BIOL 204 – Milestone course
BIOL 275
CHEM 251
CHEM 262

Semester V (Spring)
BIOL 270
BIOL 276
Limited Choice

LCC makes every effort to limit revisions to the pathways during their effective timeframe. However, the College reserves the right to update certificate and degree titles, and make course changes as needed, without prior notice. The College also reserves the right to discontinue programs when warranted.