



## **Biotechnology A.A.S.**

Curriculum Code: 0212

Effective: Fall 2020 – Summer 2025

### **Description**

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 make every effort to arrange for internships in university or industrial research laboratories for students who wish 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. 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.

### **Additional Information**

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**

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.

### **General Education – Applied Degrees, Recommended Choices**

(For the full list of options, see [General Education](#))

- English Composition – *Select one*  
ENGL 121, Composition I, 4 credits / 4 billing hours
- English Composition (second course)/Communications or Applied Communications – *Select one*  
COMM 120, Dynamics of Communication, 3 credits / 3 billing hours  
COMM 130, Fundamentals Public Speaking, 3 credits / 3 billing hours  
ENGL 122, Composition II, 4 credits / 4 billing hours
- Humanities and Fine Arts or Social Sciences or Applied Social Sciences – *Select one*  
ECON 120, Power, Authority and Exchange, 4 credits / 4 billing hours  
GEOG 200, World Regional Geography, 4 credits / 4 billing hours  
HUMS 213, World Civilizations to 1600, 4 credits / 4 billing hours  
SOCL 120, Introduction to Sociology, 4 credits / 4 billing hours

- Mathematics or Applied Mathematics  
Program of Study Required Courses will meet this requirement
- Natural Sciences Lab or Applied Science and Technology Lab  
Program of Study Required Courses will meet this requirement

### Program of Study Required Courses

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
ISCI 245	S.T.E.M. Workplace Practices	4 / 6
MATH 121	Precalculus I	4 / 4
STAT 215	Intro to Probability and Stats	4 / 4

### Program of Study Required Courses, Limited Choice – *Select a minimum of 2 credits*

Course Code	Course Title	Credit / Billing Hours
BIOL 128	Organismal Biology	4 / 6
BIOL 260	Botany	4 / 6
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

### Total Credit Hours

60-63 credits / 78-82 billing hours

## Recommended Course Sequence

Semester I (Fall)	Semester II (Spring)
English Composition CHEM 151 CHEM 161 MATH 121	English Composition (second course)/ Communications or Applied Communications BIOL 127 CHEM 152 CHEM 162 ISCI 245

Semester III (Summer)	Semester IV (Fall)
Humanities and Fine Arts or Social Science or Applied Social Science STAT 215	BIOL 203 BIOL 204 BIOL 275 CHEM 251 CHEM 262

Semester V (Spring)
BIOL 270 BIOL 276 Limited Choice