



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

Curriculum Code: 0212

Effective: Fall 2019 – Summer 2024

### **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

### **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 Core Courses, Recommended Choices**

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

- Communication – *Select one*  
COMM 120, Dynamics of Communication, 3 credits / 3 billing hours  
COMM 130, Fund of Public Speaking, 3 credits / 3 billing hours
  
- Global Perspective and Diversity – *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
  
- Math – *Select one*  
MATH 121, Precalculus I, 4 credits / 4 billing hours
  
- Science  
Program of Study Required Courses will meet this requirement.

- Writing – *Select one*  
ENGL 121, Composition I, 4 credits / 4 billing hours  
ENGL 122, Composition II, 4 credits / 4 billing hours

### 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
STAT 215	Intro to Probability and Stats	4 / 4

### Program of Study Required Courses, Limited Choice – *Select a minimum of 3 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
PHYS 221	Introductory Physics I	4 / 6
SCIN 287	Science Technology Internship	2-4 / 2-4

### Total Credit Hours

61-64 credits / 78-87 billing hours

### Recommended Course Sequence

Semester I (Fall)	Semester II (Spring)
Math Core	Communication Core
Writing Core	BIOL 127
CHEM 151	CHEM 152
CHEM 161	CHEM 162
	ISCI 245

Semester III (Summer)	Semester IV (Fall)
Global Perspectives and Diversity Core STAT 215	BIOL 203 BIOL 204 BIOL 275 (Fall only) CHEM 251 CHEM 262 (Fall only)

Semester V (Spring)
BIOL 270 BIOL 276 (Spring only) Limited Choice Limited Choice