

**BIOTECHNOLOGY AAS: 334****Total Credits: 60****Catalog Edition: 2018-2019****Program Description**

The biotechnology program is designed to instruct and train students in the field of biotechnology. Entry-level workers in the field of biotechnology are involved in laboratory work such as DNA isolation or sequencing, cell culture, toxicology or vaccine sterility testing, antibody production and isolation, and the testing and development of diagnostic and therapeutic agents. Training is designed to prepare students for both academic achievement and successful employment in the biotechnology industry. The program offers both a degree and two certificates to meet students' different needs.

On completion of the biotechnology AAS, the student may transfer to another institution and earn a bachelor's degree in a biological science or may elect to enter the workforce. Course selection within the curriculum depends on which option the student selects.

The emphasis of the program is on applied laboratory skills relevant to the biotechnology industry. A solid foundation is obtained through introductory coursework in biotechnology, biology, chemistry, and mathematics. These background courses prepare students for more rigorous upper-level applied coursework in biotechnology, biology, and chemistry taken during the second year. High school biology, chemistry, and math (algebra II) are strongly recommended.

Because of the variation in requirements of four-year institutions, students are urged to consult an adviser about specific course selections.

**Program Outcomes**

Upon completion of this program a student will be able to:

- Independently complete basic laboratory tasks common to biotechnology such as documentation, pipetting, buffer preparation, dilutions, and gel electrophoresis.
- Define and explain the basic principles, concepts, and techniques of biotechnology.

**Program Advisors****Germantown**

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**For more information please visit:**

[www.montgomerycollege.edu/advising](http://www.montgomerycollege.edu/advising)

OR

GT STEP Advising

<http://cms.montgomerycollege.edu/EDU/Department4.aspx?id=67267>

# 2018-2019 Program Advising Guide

An Academic Reference Tool for Students

# BIOTECHNOLOGY AAS: 334

## Suggested Course Sequence

A suggested course sequence for full-time students follows. All students should review this advising guide and consult an advisor.

### First Semester

- BIOL 150 - Principles of Biology I  
*4 semester hours (NSLD)*
- BIOT 110 - Introduction to Biotechnology  
*2 semester hours*
- CHEM 131 - Principles of Chemistry I  
*4 semester hours*
- ENGL 101 - Introduction to College Writing  
*3 semester hours \**
- ENGL 101A – Introduction to College Writing  
*3 semester hours*
- Mathematics foundation  
*3 semester hours (MATF)*

### Second Semester

- BIOT 120 - Cell Culture and Cell Function  
*3 semester hours*
- BIOT 200 - Protein Biotechnology  
*4 semester hours*
- BIOL 210 - Microbiology  
*4 semester hours*
- English foundation  
*3 semester hours (ENGF)*
- Health foundation  
*1 semester hour (HLTF)*

### Third Semester

- BIOL 220 - General Genetics  
*4 semester hours*  
OR  
BIOL 222 - Principles of Genetics  
*4 semester hours*
- BIOT 230 - Basic Immunology and Immunological Methods  
*4 semester hours*
- CHEM 150 - Essentials of Organic and Biochemistry  
*4 semester hours ‡*
- Speech foundation  
*3 semester hours (SPCF)*

### Fourth Semester

- BIOT 240 - Nucleic Acid Methods  
*4 semester hours*
- Arts or humanities distribution  
*3 semester hours (ARTD or HUMD)*
- Behavioral and social sciences distribution  
*3 semester hours (BSSD)*
- Electives  
*4 semester hours*

**Total Credit Hours: 60**

## Advising Notes

- ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.
- ‡ CHEM 203 (5 semester hours) may be taken instead of CHEM 150.
- † Program electives: BIOT 250, CMAP 120, CHEM 132, CHEM 204, PHYS 233, SCIR 297, MATH elective, BIOL elective, HUMD, BSSD, or ARTD.

# BIOTECHNOLOGY AAS (G): 334

Total Credits: 60  
Catalog Editions 17-18 through 18-19

Name:

Date:

ID #:

<b>GENERAL EDUCATION: FOUNDATION COURSES</b>	<b>Course</b>	<b>Hours</b>	<b>Grade</b>
<b>English Foundation</b> (EN 102/ENGL 102 or EN 109/ENGL 103)		3	
<b>Math Foundation</b> (MATH 110, 115, 117, 120, 130, 150, 165, 170, or 181) <b>CONSULT COUNSELING FACULTY/FACULTY ADVISOR ABOUT CHOICE</b>			
<b>GENERAL EDUCATION: DISTRIBUTION COURSES</b>	<b>Course</b>	<b>Hours</b>	<b>Grade</b>
<b>Arts or Humanities Distribution</b> (ARTD or HUMD)			
<b>Behavioral &amp; Social Sciences Distribution</b> (BSSD)		3	
<b>General Education Elective</b> (GEEL)	CH 101/ <b>CHEM 131</b>	4	
<b>Natural Sciences Distribution with Lab</b> (NSLD)	BI 107/ <b>BIOL 150</b>	4	
<b>PROGRAM REQUIREMENTS</b>	<b>Course</b>	<b>Hours</b>	<b>Grade</b>
<b>ENGL 101 or ENGL 101A</b> (if needed for ENGL102/103 or Elective)*		3	
CH 120/ <b>CHEM 150</b> or CH 203/ <b>CHEM 203</b> ‡			
	BI 203/ <b>BIOL 210</b>	4	
	BI 209/ <b>BIOL 220</b> or BI 222/ <b>BIOL 222</b>	4	
	BT 101/ <b>BIOT 110</b>	2	
	BT 117/ <b>BIOT 120</b>	3	
	BT 200/ <b>BIOT 200</b>	4	
	BT 204/ <b>BIOT 230</b>	4	
	BT 213/ <b>BIOT 240</b>	4	
	<b>PROGRAM ELECTIVE**</b>		
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**Overall GPA of 2.0 is required to graduate**

\* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or Elective.

\*\* Program Electives: BT 235/**BIOT 250**, CA 120/**CMAP 120**, CH 102/**CHEM 132**, CH 204/**CHEM 204**, PHYS 233, SC 297/**SCIR 297**, MATH Elective, BIOL Elective, HUMD, BSSD, or ARTD.

‡ CHEM 203 (5 semester hours) may be taken instead of CHEM 150.

Total Credits:

[Biotechnology Website](#)

Last Modified: July 2018

The biotechnology program is designed to instruct and train students in the field of biotechnology. Entry-level workers in the field of biotechnology are involved in laboratory work such as DNA isolation or sequencing, cell culture, toxicology or vaccine sterility testing, antibody production and isolation, and the testing and development of diagnostic and therapeutic agents. Training is designed to prepare students for both academic achievement and successful employment in the biotechnology industry. The program offers both a degree and two certificates to meet students' different needs.

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**This UNOFFICIAL document is for planning purposes ONLY and completion does not guarantee graduation.**

This degree is a career program and may not readily transfer to four year colleges/universities (except in special cases.) Visit [transfer planning](#) for more information.

Advising Worksheet Contact:  
[Anthony Solano](#)

See an [advisor](#) to submit an [Application for Graduation](#) the semester BEFORE you intend to graduate.

## Transfer Opportunities

Montgomery College has partnerships with multiple four-year institutions and the tools to help you transfer. To learn more please visit: <http://cms.montgomerycollege.edu/transfer/> or <http://artsys.usmd.edu/>

## Get Involved at MC!

Employers and Transfer Institutions are looking for experience outside the classroom.

## MC Student Clubs and Organizations

<http://cms.montgomerycollege.edu/edu/plain.aspx?id=2439>

## Related Careers

Some require a Bachelor's degree.  
Biological Technician, Microbiologist, Molecular and Cellular Biologist, Medical and Clinical Laboratory Technologist, Biofuels/Biodiesel Technology and Product Development Manager, Bioinformatics Technician, Clinical Data Manager & Regulatory Affairs Specialist

## Career Services

<http://www.montgomerycollege.edu/career>

## Career Coach

A valuable online search tool that will give you the opportunity to explore hundreds of potential careers or job possibilities in Maryland and the Washington D.C. metropolitan area.

Get started today on your road to a new future and give it a try. Visit the website listed below:  
<https://montgomerycollege.emsicareercoach.com>

## Notes: