BIOTECHNOLOGY AAS: 334

Total Credits: 60
Catalog Edition: 2015-16

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 Advising

Germantown

- **Dr. Lori Kelman, 240-567-6929**
  lori.kelman@montgomerycollege.edu
- **Dr. Collins Jones, 240-567-1910**
  collins.jones@montgomerycollege.edu

For more information please visit:
www.montgomerycollege.edu/advising
or
GT STEP Advising
(http://cms.montgomerycollege.edu/EDU/Department4.aspx?id=67267)

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 **

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 hour

Total Credit Hours: 60

Advising Notes

** ENGL 101/ENGL 101A , if needed for ENGL 102/ENGL 103, or general elective.*

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

BIOT courses are primarily taught at the Germantown campus.

BIOTECHNOLOGY A.A.S. (G): 334

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Name: _____ **Date:** _____ **ID #:** _____

GENERAL EDUCATION: FOUNDATION COURSES	Course	Hours	Grade
English Foundation (EN 102/ENGL 102 or EN 109/ENGL 103)		3	
Math Foundation (MA 110/MATH 110 or higher)		3 or 4	
Speech Foundation (SP 108/COMM 108 or SP 112/COMM 112)		3	
Health Foundation HLHF (Choose HLTH 100 - HLTH 230)		1, 2, or 3	

GENERAL EDUCATION: DISTRIBUTION COURSES	Course	Hours	Grade
Arts or Humanities Distribution (ARTD or HUMD)		3	
Behavioral & Social Sciences Distribution (BSSD)		3	
Natural Sciences Distribution with Lab (NSLD)	BI 107/**BIOL 150**	4	

PROGRAM REQUIREMENTS	Course	Hours	Grade
EN 101/ENGL 101 (if needed for ENGL102/103 or general elective if not)		3	
	BI 203/**BIOL 210**	4	
BI 209/**BIOL 220** or BI 222/**BIOL 222**		4	
	BT 101/**BIOT 110**	2	
	BT 117/**BIOT 120**	3	
	BT 200/**BIOT 200**	4	
	BT 204/**BIOT 230**	4	
	BT 213/**BIOT 240**	4	
	CH 101/**CHEM 131**	4	
CH 120/**CHEM 150** or CH 203/**CHEM 203** †		4 or 5	
ELECTIVES		4	

Overall GPA of 2.0 is required to graduate

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

Total Credits: _____

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Biotechnology Website

Last Modified: February 2016

Advising Worksheet Contact: Anthony Solano

See an advisor to submit an Application for Graduation the semester BEFORE you intend to graduate.

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.

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/EDU/Plain.aspx?id=62341* or *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: