BIOTECHNOLOGY AAS: 334
Total Credits: 60
Catalog Edition: 2022-2023

Program Description
(G): 334

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 the differing needs of students.

On completion of the biotechnology AAS, the student may
transfer to another institution and earn a baccalaureate 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 advisor 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.

• Identify, communicate, and solve common problems in the
biotechnology field.

Program Advisors
Germantown

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For more information, please visit https://
www.montgomerycollege.edu/academics/programs/
biochemistry/biotechnology-aas-degree.html or GT STEP
Advising https://www.montgomerycollege.edu/gtstep

To view the Advising Worksheet, please visit https://
www.montgomerycollege.edu/_documents/counseling-and-
advising/advising-worksheets/current-catalog/334.pdf
## 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

- ENGL 101 - Introduction to College Writing 3 semester hours *
- Mathematics Foundation 3 semester hours (MATF)
- 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 (GEEL)

### Second Semester

- English Foundation 3 semester hours (ENGF)
- BIOT 120 - Introduction to Cell Culture 2 semester hours
- BIOT 121 - Aseptic Technique and Cell Culture Skills 1 semester hour
- BIOT 200 - Protein Biotechnology 3 semester hours
- BIOT 201 - Protein Biotechnology Skills 1 semester hour
- BIOL 210 - Microbiology 4 semester hours

### Third Semester

- BIOL 222 - Principles of Genetics 4 semester hours
- BIOT 231 - Immunological Methods 1 semester hour
- BIOT 230 - Applied Immunology 3 semester hours
- CHEM 150 - Essentials of Organic and Biochemistry 4 semester hours ‡
- Arts or Humanities Distribution 3 semester hours (ARTD or HUMD)

### Fourth Semester

- BIOT 240 - Principles of Nucleic Acid Methods 3 semester hours
- BIOT 241 - Nucleic Acid Methods 1 semester hour
- Behavioral and Social Sciences Distribution 3 semester hours (BSSD)
- Program Electives 8 semester hours †

### Total Credit Hours: 60

* 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, BIOT 251, CMAP 120, CHEM 132, CHEM 204, PHYS 203, PHYS 233, SCIR 297, MATH Elective, BIOL Elective, COMM 108 or COMM 112, HUMD, BSSD, or ARTD.
Transfer Opportunities
Montgomery College has partnerships with multiple four-year institutions and the tools to help you transfer. To learn more, please visit [https://www.montgomerycollege.edu/transfer](https://www.montgomerycollege.edu/transfer) or [http://artsys.usmd.edu](http://artsys.usmd.edu).

Get Involved at MC!
Employers and Transfer Institutions are looking for experience outside the classroom.

MC Student Clubs and Organizations: [https://www.montgomerycollege.edu/life-at-mc/student-life/](https://www.montgomerycollege.edu/life-at-mc/student-life/)

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
Montgomery College offers a range of services to students and alumni to support the career planning process. To learn more, please visit [https://www.montgomerycollege.edu/career](https://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. For more information, please visit [https://montgomerycollege.emsicc.com](https://montgomerycollege.emsicc.com)

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