

# BIOMANUFACTURING CERTIFICATE

Total Credits: 19

Catalog Edition: 2024-2025

## Program Description

(G): 246

This certificate curriculum is designed to prepare students for immediate employment in biomanufacturing. This certificate is suitable for students who have completed high school and desire fast entry into the biotechnology industry, for people who want to update or upgrade their skills, or for those who have obtained a bachelor's degree in the life sciences and want additional training. Students must obtain consent of the biotechnology program coordinator before enrolling in the certificate curriculum. To enter directly into the certificate curriculum, students must have met the prerequisites for the courses.

[biotechnology/biomanufacturing-certificate.html](https://www.montgomerycollege.edu/biotechnology/biomanufacturing-certificate.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/246.pdf>

## Program Outcomes

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

- Complete, independently and working in teams, basic laboratory tasks common to biomanufacturing such as documentation, pipetting, buffer preparation, dilutions, and gel electrophoresis.
- Define and explain the basic principles, concepts, and techniques of biomanufacturing.
- Demonstrate technical skills related to upstream and downstream bioprocessing such as aseptic technique, filtration, and protein chromatography.

## Program Advisors

### Germantown

- Dr. Lori Kelman, 240-567-6929, [Lori.Kelman@montgomerycollege.edu](mailto:Lori.Kelman@montgomerycollege.edu)
- Prof. Padmavathi Tangirala, 240-567-2194, [Padmavathi.Tangirala@montgomerycollege.edu](mailto:Padmavathi.Tangirala@montgomerycollege.edu)

For more information, please visit <https://www.montgomerycollege.edu/academics/programs/>

2024-2025

# Program Advising Guide

An Academic Reference Tool for Students

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## Program Requirements

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

### Program Requirements

BIOT 120 - Introduction to Cell Culture *2 semester hours*

BIOT 121 - Aseptic Technique and Cell Culture Skills *1 semester hour*

BIOL 150 - Principles of Biology I *4 semester hours* \*

BIOT 200 - Protein Biotechnology *3 semester hours*

BIOT 201 - Protein Biotechnology Skills *1 semester hour*

BIOT 250 - Principles of Biomanufacturing *3 semester hours*

BIOT 251 - Techniques of Biomanufacturing *1 semester hour*

CHEM 131 - Principles of Chemistry I *4 semester hours*

## **Total Credit Hours: 19**

\* MATH 117 or higher if needed for BIOL 150

## 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> 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: <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>

## 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>

## Notes: