

## CHEMISTRY AND BIOCHEMISTRY AREA OF CONCENTRATION, SCIENCE AS: 412D

Total Credits: 60

Catalog Edition: 2021-2022

### Program Description

The chemistry and biochemistry program is designed to provide the first two years of courses necessary to obtain a chemistry or biochemistry baccalaureate degree from a four-year college or university. In addition to general and organic chemistry knowledge, students will be trained in data collection and analysis, and scientific communication. Through the laboratory portion of the program, students will reinforce their understanding and application of the theory learned in class, develop laboratory skills and techniques, and formulate conclusions based on observations. Students are strongly encouraged to work with an advisor in course selection as transfer requirements between four-year institutions may differ.

### Program Outcomes

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

- Apply knowledge of general and organic chemistry to analyze data, draw conclusions, and solve problems.
- Apply safe practices to execute laboratory techniques and use appropriate equipment and instrumentation to carry out experimental procedures.
- Access scientific information using basic scientific references and literature and evaluate technical information critically.
- Communicate scientific concepts, experimental results, and properly cited reference material in an ethical, clear, and organized manner.
- Work effectively in groups, as leaders or team members, to solve problems and interact productively with a diverse group of peers.

### Program Advisors

#### Germantown

- Prof. Susan Bontems, 240-567-7740,  
[Susan.Bontems@montgomerycollege.edu](mailto:Susan.Bontems@montgomerycollege.edu)

#### Rockville

- Dr. Thomas Chen, 240-567-7633,  
[Thomas.Chen@montgomerycollege.edu](mailto:Thomas.Chen@montgomerycollege.edu)

#### Takoma Park/Silver Spring

- Dr. Cory Newman, 240-567-1413,  
[Cory.Newman@montgomerycollege.edu](mailto:Cory.Newman@montgomerycollege.edu)

For more information, please visit <https://www.montgomerycollege.edu/academics/programs/science/chemistry-and-biochemistry-as-degree.html> or GT STEP Advising <https://www.montgomerycollege.edu/gtstep>

<https://www.montgomerycollege.edu/academics/programs/science/chemistry-and-biochemistry-as-degree.html>

To view the Advising Worksheet, please visit <https://www.montgomerycollege.edu/documents/counseling-and-advising/advising-worksheets/current-catalog/412d.pdf>

2021-2022

# Program Advising Guide

An Academic Reference Tool for Students

412D

CHEMISTRY AND BIOCHEMISTRY AREA OF CONCENTRATION, SCIENCE AS: 412D  
ASSOCIATE OF SCIENCE: 412D

# CHEMISTRY AND BIOCHEMISTRY AREA OF CONCENTRATION, SCIENCE AS: 412D

## 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* \*

MATH 181 - Calculus I *4 semester hours* (MATF)

CHEM 131 - Principles of Chemistry I *4 semester hours* (NSLD)

Humanities Distribution *3 semester hours* (HUMD) ‡

### Third Semester

CHEM 203 - Organic Chemistry I *5 semester hours*

PHYS 161 - General Physics I: Mechanics and Heat *3 semester hours*

Behavioral and Social Sciences Distribution *3 semester hours* (BSSD) \*\*

Program Elective *1-4 semester hours* #

### Second Semester

ENGL 102 - Critical Reading, Writing, and Research *3 semester hours* (ENGF)

BIOL 150 - Principles of Biology I *4 semester hours* (NSLD/GEEL)

CHEM 132 - Principles of Chemistry II *4 semester hours* (NSLD)

MATH 182 - Calculus II *4 semester hours*

### Fourth Semester

CHEM 204 - Organic Chemistry II *5 semester hours*

PHYS 262 - General Physics II: Electricity and Magnetism *4 semester hours*

Arts Distribution *3 semester hours* (ARTD)

Behavioral and Social Sciences Distribution *3 semester hours* (BSSD)

Program Elective *1-4 semester hours* #

## Total Credit Hours: 60

\* ENGL 101/ENGL 101A, or ENGL 101/ENGL 011, if needed for ENGL 102/ENGL 103, or choose program elective.

\*\* Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

Choose one distribution course that also fulfills the Global and Cultural Perspectives requirement.

‡ It is recommended that COMM 108 be taken as the HUMD distribution elective.

# Courses can be taken from the following program electives: CHEM 272 \*\*\*, ENES 206, SCIR 297, MATH 280, MATH 282, or BIOT, BIOL, PHYS, CMSC elective. Check transfer institution requirements when selecting program electives.

\*\*\* CHEM 272 strongly recommended for transfer to UMD.

## 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.

Food Scientist and Technologist, Chemical Technician, Medical and Clinical Laboratory Technologist, Geological Sample Test Technician, Chemist, Materials Scientist, Biochemist and Biophysicist, Chemical Engineer, Biochemical Engineer, Chemistry Teacher, Postsecondary.

## 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: