CHEMISTRY AND BIOCHEMISTRY AREA OF CONCENTRATION, SCIENCE AS

Total Credits: 60
Catalog Edition: 2024-2025

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
Schedule Appointment with a Program Advisor.

Germantown
- Dr. Thomas Chen, 240-567-7633, Thomas.Chen@montgomerycollege.edu
- Dr. James Lipchock, 240-567-7781, James.Lipchock@montgomerycollege.edu

Rockville
- Dr. Craig M Benson, 240-567-4352, craig.benson@montgomerycollege.edu

Takoma Park/Silver Spring
- Dr. Cory Newman, 240-567-1413, Cory.Newman@montgomerycollege.edu


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

Program Advising Guide
An Academic Reference Tool for Students

2024-2025

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Introduction to College Writing</td>
<td>3</td>
</tr>
<tr>
<td>MATH 181</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 131</td>
<td>Principles of Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>Humanities</td>
<td>Distribution</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 102</td>
<td>Critical Reading, Writing, and Research</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 150</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 132</td>
<td>Principles of Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 182</td>
<td>Calculus II</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Third Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 203</td>
<td>Organic Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 161</td>
<td>General Physics I: Mechanics and Heat</td>
<td>3</td>
</tr>
<tr>
<td>Behavioral</td>
<td>and Social Sciences Distribution</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 204</td>
<td>Organic Chemistry II</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 262</td>
<td>General Physics II: Electricity and Magnetism</td>
<td>4</td>
</tr>
<tr>
<td>Behavioral</td>
<td>and Social Sciences Distribution</td>
<td>3</td>
</tr>
</tbody>
</table>

#### 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.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

‡ 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: