CHEMISTRY BA-Biochemistry Concentration
PENDING DEPARTMENT APPROVAL

Fall 2019 – Spring 2020

CONTACT INFORMATION
- Honors College Advisor: Tahmina Rahman (trahman5@gmu.edu)
- Department Chair: Gerald Weatherspoon
- Associate Chair: Megan Erb (msikowit@gmu.edu)
- Department Undergraduate Coordinator: Suzanne Slayden (sslayden@gmu.edu)

Once students begin attending Mason and declare a major they should see both their Honors College and their major department advisor for advising. Students must confirm their major requirements with their department advisor, with the University catalog http://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-ba/#requirementstext, and with Patriot Web’s Degree Evaluation.

NOTE FROM CHEMISTRY DEPARTMENT: CHEM 211/213 and 212/214 are prerequisites (C or better grade) for all chemistry courses at the 300- and 400-level. Also, almost all other chemistry courses have additional prerequisites (C or better grade). Students must complete the chemistry program requirements with a minimum GPA of 2.30 and present no more than two courses with a grade of 'D' (1.00) in CHEM coursework at graduation.

Many courses are only offered one semester; keep that in mind as you plan your schedule. Fall only classes are marked (F) and Spring only are marked (S), but these are subject to change.

HONORS REQUIREMENTS (see advising section of Honors College website for further details https://honorscollege.gmu.edu/academics/academic-advising )

- Honors College students must complete all courses in the Honors curriculum. Any substitutions for these courses should be approved by your Honors College advisor.

- Students earning a BA must complete two additional humanities and social science general education courses. This requirement may be satisfied by taking HNRS 130 and HNRS 260 or HNRS 261, which also satisfy Honors College curriculum requirements.

ADVISING SHEET
- Honors College Requirement
- Department Requirement

<table>
<thead>
<tr>
<th>1st Year – 1st Semester (Fall)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>o HNRS 110: Principles of Research &amp; Inquiry</td>
<td>4</td>
</tr>
<tr>
<td>o HNRS 122: Reading the Arts</td>
<td>3</td>
</tr>
<tr>
<td>♦ MATH 113: Analytic Geometry and Calculus I (placement exam is required)</td>
<td>4</td>
</tr>
<tr>
<td>♦ CHEM 211/211H: General Chemistry I and CHEM 213: General Chemistry Lab I</td>
<td>4</td>
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Semester Total 15

<table>
<thead>
<tr>
<th>1st Year – 2nd Semester (Spring)</th>
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<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
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<tr>
<td>HNRS 130</td>
<td>Identity, Community, and Difference</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Analytic Geometry and Calculus II (prerequisite: C or better in MATH 113) or MATH 116: Honors Analytic Geometry and Calculus II</td>
</tr>
<tr>
<td>CHEM 212/212H</td>
<td>General Chemistry II&lt;sup&gt;1&lt;/sup&gt; and CHEM 214: General Chemistry II Lab</td>
</tr>
<tr>
<td>BIOL 213/213H</td>
<td>Cell Structure and Function&lt;sup&gt;1&lt;/sup&gt; Prerequisite for honors section only (BIOL 213H): AP Biology or equivalent IB/HL or dual enrollment course in high school&lt;sup&gt;2&lt;/sup&gt;</td>
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</tbody>
</table>

**Semester Total**: 15

**2nd Year – 1st Semester (Fall)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HNRS 131</td>
<td>Contemporary Social Issues</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 313</td>
<td>Organic Chemistry I and CHEM 315: Organic Chemistry I Lab</td>
<td>5</td>
</tr>
<tr>
<td>PHYS 243</td>
<td>College Physics I and PHYS 244: College Physics I Lab</td>
<td>4</td>
</tr>
<tr>
<td>STAT 250</td>
<td>Introductory Statistics I</td>
<td>3</td>
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**Semester Total**: 15

**2nd Year – 2nd Semester (Spring)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HNRS 260 (Society &amp; Community Engagement) Or HNRS 261 (Community Connection Practicum)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 314</td>
<td>Organic Chemistry II and CHEM 318: Organic Chemistry II Lab</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 321</td>
<td>Elementary Quantitative Analysis (Prerequisite: MATH 113. Co-requisite: MATH 114, can be taken in the summer as well)</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 245</td>
<td>College Physics II and PHYS 246: College Physics II Lab</td>
<td>4</td>
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</tbody>
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**Semester Total**: 16

**3rd Year – 1st Semester (Fall)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HNRS 240</td>
<td>Reading the Past</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 463</td>
<td>General Biochemistry I (Prerequisites: BIOL 213, CHEM 313)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 331</td>
<td>Physical Chemistry I&lt;sup&gt;4,6&lt;/sup&gt; (F) (Pre-requisite: MATH 114. Pre- or co-requisite: PHYS 243)</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language (Intermediate-level proficiency required)</td>
<td></td>
<td>6</td>
</tr>
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</table>

**Semester Total**: 16

**3rd Year – 2nd Semester (Spring)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HNRS 360 (Multi-Disciplinary Topics Or HNRS 361 (Multi-Disciplinary Practicum)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 464</td>
<td>General Biochemistry II&lt;sup&gt;4&lt;/sup&gt; (S) (Prerequisites: CHEM 314, CHEM 463)</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 465</td>
<td>Biochemistry Lab (Prerequisite: CHEM 315. Pre- or Co-requisite: CHEM 463)</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 336&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Physical Chemistry Lab I (Prerequisites: CHEM 321, MATH 114. Pre- or co-requisites: CHEM 331, PHYS 243)</td>
<td>2</td>
</tr>
<tr>
<td>Foreign Language (if needed)</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective&lt;sup&gt;6,7&lt;/sup&gt;</td>
<td></td>
<td>2</td>
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**Semester Total**: 15
4th Year – 1st Semester (Fall)

- CHEM 446: Bio-inorganic Chemistry (F) (Prerequisite: CHEM 331, CHEM 336, CHEM 463) 3
- Foreign Language 3
- Electives5, 300 level or above as needed 6
- Elective 3

Semester Total 15

4th Year – 2nd Semester (Spring)

- Electives5, 300 level or above as needed 5
- Electives 9

Semester Total 14

Total Hours 120

NOTES

1. While Honors sections are not required to complete the Honors curriculum, students are highly encouraged to take the Honors sections to obtain a more in-depth understanding of the course.
2. Students who did not pass the AP Biology exam with a score of 4 or higher, or the IB Biology HL exam with a score of 5 or higher, or a dual enrollment course in high school are encouraged to take BIOL 103: Introductory Biology I before taking BIOL 213H.
3. MATH 113 fulfills the quantitative reasoning requirement for Honors. MATH 113 requires a placement exam. See the Math department for exam days and times.
4. CHEM 331 and CHEM 446, which are required for those following the biochemistry track, are offered during Fall semesters only. CHEM 464, which is required for those following the biochemistry track, is offered during Spring semesters only. Plan your schedules accordingly.
5. Students seeking a bachelor’s degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.
6. Students interested in getting a head start on research can take CHEM 331 and CHEM 336 with CHEM 314/318 and begin research. To look for research opportunities consider visiting the OSCAR website (https://oscar.gmu.edu/students/) and search for Research Experiences for Undergraduates on the National Science Foundation website (https://www.nsf.gov/crssprgm/reu/reu_search.jsp).
7. Students interested in pursuing graduate school, professional school, or PhD programs, should consider applying for the BS/Accelerated MS in Chemistry. For more information about the program, click here: https://cos.gmu.edu/chemistry/wp-content/uploads/sites/7/2016/11/aboutthebsms.pdf