The Biological emphasis has more biology electives and less math. Satisfies many of the prerequisites for students planning to attend health related post-bachelor’s schools, such as medical, dental, pharmaceutical, or wanting to pursue graduate school in medical or biological chemistry.

### 1st Year Fall
- **MATH 1210**<sup>1</sup>
  - **Calc I**
  - 4 cr.
  - F, S, U
  - QR

### 1st Year Spring
- **MATH 1220**<sup>1</sup>
  - **Calc II**
  - 4 cr.
  - F, S, U
  - QR

### 2nd Year Fall
- **PHYS 2210**<sup>2</sup>
  - **Physics I**
  - 4 cr.
  - F, S, U
  - SF

### 2nd Year Spring
- **PHYS 2220**<sup>2</sup>
  - **Physics II**
  - 4 cr.
  - F, S, U
  - SF

### 3rd Year Fall
- **CHEM 1210**<sup>3</sup>
  - **Gen Chem I**
  - 4 cr.
  - F, S, U
  - SF

### 3rd Year Spring
- **CHEM 1220**<sup>3</sup>
  - **Gen Chem II**
  - 4 cr.
  - F, S, U
  - SF

### 4th Year Fall
- **CHEM 2310**<sup>4</sup>
  - **Org Chem I**
  - 4 cr.
  - F, S, U

### 4th Year Spring
- **CHEM 2320**<sup>4</sup>
  - **Org Chem II**
  - 4 cr.
  - F, S, U

### 5th Year Fall
- **CHEM 3060**
  - **Quantum**
  - 4 cr.
  - F, S
  - QI

### 5th Year Spring
- **CHEM 3510**
  - **Biochem I**
  - 3 cr.
  - F, S, U

### 6th Year Fall
- **CHEM 3520**
  - **Biochem II**
  - 3 cr.
  - S

### 6th Year Spring
- **CHEM 5700**
  - **Adv Phys Lab**
  - 2 cr.
  - 2nd half S

### 7th Year Fall
- **CHEM 5710**
  - **Adv Bio Lab**
  - 2 cr.
  - 1st half S

### 7th Year Spring
- **CHEM 5720**
  - **Adv Inorg Lab**
  - 2 cr.
  - 2nd half S

### 8th Year Fall
- **CHEM 3200**
  - **Radiochemistry**
  - 3 cr.
  - S

### 8th Year Spring
- **CHEM 5700**
  - **Adv Ana Lab**
  - 2 cr.
  - 1st half S

### 9th Year Spring
- **CHEM 3090**
  - **Physical Chemistry for Life Sciences**
  - Offered in the Fall

---

1) Can take whichever calculus sequence is appropriate, including AP Calculus (MATH 1250 & 1260) or Engineering Calculus (MATH 1310 &1320) Must finish the sequence that was started
2) Honors versions are PHYS 3210 + 3220. This sequence starts in Spring.
3) Honors versions of General Chemistry are CHEM 1211 + 1221. Sequence starts in the Fall. Must apply to be in the class.
4) Honors versions of Organic Chemistry are CHEM 2311 + 2321. Sequence starts in the Fall. Must apply to be in the class.
5) ( = Only 2 upper division labs required.
6) Can also take CHEM 3515 (Biochemistry Lab) or 3525 (Molecular Biology of DNA Lab) in place of CHEM 5750, but more difficult to get into.
7) Total of 5 credit hours of biology elective needed. CHEM 4800 (research) or CHEM 4999 (Honors Thesis) can count for up to 2 credit hours.
8) Can also take CHEM 3090 (Physical Chemistry for Life Sciences) offered in the Fall.
The Biological emphasis has more biology electives and less math. Satisfies many of the prerequisites for students planning to attend health related post-bachelor’s schools, such as medical, dental, pharmaceutical, or wanting to pursue graduate school in medical or biological chemistry.

### Biological Emphasis

<table>
<thead>
<tr>
<th>Done?</th>
<th>Depart.</th>
<th>Number</th>
<th>Course Name</th>
<th>Credit Hours</th>
<th>Gen Ed/ Bach Req</th>
<th>Prerequisites</th>
<th>Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MATH</td>
<td>1210</td>
<td>Calculus I</td>
<td>4</td>
<td>QR</td>
<td>MATH 1060 or 1080</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>MATH</td>
<td>1220</td>
<td>Calculus II</td>
<td>4</td>
<td>QR</td>
<td>MATH 1210</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>MATH</td>
<td>2210</td>
<td>Calculus III</td>
<td>4</td>
<td>QR</td>
<td>MATH 1220</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>PHYS</td>
<td>2210</td>
<td>Physics for Sci &amp; Eng I</td>
<td>4</td>
<td>SF</td>
<td>MATH 1210</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>PHYS</td>
<td>2215</td>
<td>Physics Lab for Sci &amp; Eng I</td>
<td>1</td>
<td></td>
<td>MATH 1210</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS</td>
<td>2220</td>
<td>Physics for Sci &amp; Eng II</td>
<td>4</td>
<td>SF</td>
<td>MATH 1220 + PHYS 2210</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>PHYS</td>
<td>2225</td>
<td>Physics Lab for Sci &amp; Eng II</td>
<td>1</td>
<td></td>
<td>MATH 1220 + PHYS 2210</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>2000/4000</td>
<td>Undergrad Seminar</td>
<td>1</td>
<td></td>
<td>x x x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>1210 + 1215</td>
<td>General Chemistry I + Lab</td>
<td>4 + 1</td>
<td>SF</td>
<td>MATH 1050</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>1220 + 1225</td>
<td>General Chemistry II + Lab</td>
<td>4 + 1</td>
<td>SF</td>
<td>CHEM 1210 + 1215</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>2310 + 2315</td>
<td>Organic Chemistry I + Lab</td>
<td>4 + 2</td>
<td></td>
<td>CHEM 1220 + 1225</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>2320 + 2325</td>
<td>Organic Chemistry II + Lab</td>
<td>4 + 2</td>
<td></td>
<td>CHEM 2310 + 2315</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>3000</td>
<td>Quantitative Analysis</td>
<td>4</td>
<td>QL, CW</td>
<td>CHEM 1220 + 1250</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>3060</td>
<td>Quantum Chemistry &amp; Spect</td>
<td>4</td>
<td>QI</td>
<td>CHEM 1220 + PHYS 2220</td>
<td>x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>3070</td>
<td>Thermodynamics &amp; Kinetics</td>
<td>4</td>
<td>QI</td>
<td>CHEM 1220 + PHYS 2220</td>
<td>(x) x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>3100</td>
<td>Inorganic Chemistry</td>
<td>5</td>
<td></td>
<td>CHEM 1220 + CHEM 2320 + 3060</td>
<td>x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>3510</td>
<td>Biological Chemistry I</td>
<td>3</td>
<td></td>
<td>BIOL 2020</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>3510</td>
<td>Biological Chemistry II</td>
<td>3</td>
<td></td>
<td>CHEM 3510</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>3570</td>
<td>Biological Chemistry Lab</td>
<td>2</td>
<td></td>
<td>CHEM 3510</td>
<td>1st</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>5700</td>
<td>Analytical Chemistry Lab</td>
<td>2</td>
<td>CW</td>
<td>CHEM 3000</td>
<td>1st</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>5710</td>
<td>Organic Chemistry Lab</td>
<td>2</td>
<td></td>
<td>CHEM 2320</td>
<td>1st</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>5720</td>
<td>Physical Chemistry Lab</td>
<td>2</td>
<td></td>
<td>CHEM 3060, 3070</td>
<td>2nd</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>5730</td>
<td>Inorganic Chemistry Lab</td>
<td>2</td>
<td></td>
<td>CHEM 3100</td>
<td>2nd</td>
</tr>
<tr>
<td></td>
<td>CHEM</td>
<td>3200</td>
<td>Radiochemistry</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ADVANCED LABS - Choose 2

- CHEM 5700 Analytical Chemistry Lab
- CHEM 5710 Organic Chemistry Lab
- CHEM 5720 Physical Chemistry Lab
- CHEM 5730 Inorganic Chemistry Lab
- CHEM 3200 Radiochemistry

### BIOLOGY ELECTIVES:

- BIOL 2020 Cell Biology
- BIOL 2030 Genetics
- BIOL 2030
- BIOL 2030

- CHEM 5750 Biological Chemistry Lab

\(\wedge\): Can take whichever calculus sequence is appropriate, including AP Calculus (MATH 1250 & 1260) or Engineering Calculus (MATH 1310 &1320). Must finish the sequence that was started.

\(\wedge\): Honors versions are PHYS 3210 + 3220. This sequence starts in Spring.

\(\wedge\): Honors versions of General Chemistry are CHEM 1211 + 1221. Sequence starts in the Fall. Must apply to be in the class.

\(\wedge\): Honors versions of Organic Chemistry are CHEM 2311 + 2321. Sequence starts in the Fall. Must apply to be in the class.

\(\wedge\): Can also take CHEM 3090 (Physical Chemistry for Life Sciences) offered in the Fall.

\(\wedge\): Can also take CHEM 3515 (Biochemistry Lab) or 3525 (Molecular Biology of DNA Lab) in place of CHEM 5750, to count for 3 advanced lab credits.

\(\wedge\): CHEM 4800 (research) + A5-K43 or CHEM 4999 (Honors Thesis) can count for up to 2 credit hours of biology elective.