**BIOCHEMISTRY, B.S.**

The Biochemistry Major (B.S.) is designed to prepare students for graduate education in the biochemical sciences, for medical, dental, or pharmaceutical professions, or for employment in biotechnology, pharmaceutical, and chemical industries. Students who complete the Bachelor of Science in Biochemistry will meet all or most of the academic requirements for admission to medical, dental, veterinary, or pharmacy schools.

The curriculum involves a solid foundation of Chemistry and Biology courses, along with core and advanced elective courses in Biochemistry. Undergraduate research is encouraged, and students may collaborate with participating faculty from a variety of departments (Chemistry, Biology, Nutrition, Physics, and Kinesiology).

This program follows the biochemistry curriculum recommendations of the American Society of Biochemists and Molecular Biologists.

**Overall Requirements**

- 120 credit hours, to include at least 36 credits at or above the 300 course level
- Only major requirement and related area requirement courses at or below the 300-level in which grades of C- or better are earned will be counted toward the major. Students must earn a C- or better in prerequisite major requirement and related area requirement courses before advancing to subsequent courses. Students must have an overall GPA of at least 2.0 in CHE courses at UNC Greensboro.

**Degree Program Requirements**

### University Requirements
(https://catalog.uncg.edu/academic-regulations-policies/undergraduate-policies/university-requirements/)

### General Education Core Requirements (GEC)
(https://catalog.uncg.edu/academic-regulations-policies/undergraduate-policies/general-education-program/#generaleducationcorerequirementstext)

### College of Arts and Sciences Additional Requirements
(LEC) (https://catalog.uncg.edu/arts-sciences/#additionalundergraduaterequirementstext)

**Major Requirements**

### Required

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 111</td>
<td>General Chemistry I ‡</td>
<td>3</td>
</tr>
<tr>
<td>CHE 112</td>
<td>General Chemistry I Laboratory ‡</td>
<td>1</td>
</tr>
<tr>
<td>CHE 114</td>
<td>General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHE 115</td>
<td>General Chemistry II Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHE 331</td>
<td>Quantitative Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CHE 333</td>
<td>Quantitative Analysis Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHE 342</td>
<td>Inorganic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHE 351</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHE 352</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHE 353</td>
<td>Organic Laboratory Techniques</td>
<td></td>
</tr>
<tr>
<td>CHE 355</td>
<td>Intermediate Organic Chemistry Lab</td>
<td></td>
</tr>
</tbody>
</table>

**Related Area Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 191</td>
<td>Calculus I †</td>
<td>4</td>
</tr>
<tr>
<td>MAT 292</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>BIO 111</td>
<td>Principles of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 111L</td>
<td>and Principles of Biology I Laboratory †</td>
<td>1</td>
</tr>
<tr>
<td>BIO 112</td>
<td>Principles of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 112L</td>
<td>and Principles of Biology II Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIO 392</td>
<td>Genetics</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 211</td>
<td>General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; PHY 212</td>
<td>General Physics II †</td>
<td>4</td>
</tr>
<tr>
<td>PHY 291</td>
<td>General Physics I with Calculus</td>
<td></td>
</tr>
</tbody>
</table>
| & PHY 292 | General Physics II with Calculus † | 1

**Advanced Biochemistry Elective or Independent Study**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 402</td>
<td>Chemistry Seminar</td>
<td>3</td>
</tr>
<tr>
<td>CHE 406</td>
<td>Introductory Physical Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHE 407</td>
<td>Introductory Physical Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHE 456</td>
<td>Biochemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHE 457</td>
<td>Biochemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHE 458</td>
<td>Biochemistry Lab</td>
<td>3</td>
</tr>
<tr>
<td>CHE 401</td>
<td>Chemistry Seminar Introduction *</td>
<td>1</td>
</tr>
</tbody>
</table>

**Advanced Biological Science Elective**

Select one or more courses from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 277</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 277L</td>
<td>and Human Physiology Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIO 424</td>
<td>Plant Physiology and Biotechnology</td>
<td></td>
</tr>
<tr>
<td>BIO 443</td>
<td>Biophysics</td>
<td>3</td>
</tr>
<tr>
<td>BIO 464</td>
<td>Developmental Biology</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 464L</td>
<td>and Developmental Biology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIO 478</td>
<td>Hormones in Action</td>
<td>3</td>
</tr>
<tr>
<td>BIO 479</td>
<td>Neurobiology</td>
<td>3</td>
</tr>
<tr>
<td>&amp; 479L</td>
<td>and Neurobiology Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIO 481</td>
<td>General Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>&amp; 481L</td>
<td>and General Microbiology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BIO 482</td>
<td>Molecular Biological Approaches in Research</td>
<td>3</td>
</tr>
<tr>
<td>BIO 485</td>
<td>Virology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 494</td>
<td>Introduction to Biotechnology</td>
<td></td>
</tr>
<tr>
<td>BIO 495</td>
<td>Advanced Genetics</td>
<td>3</td>
</tr>
</tbody>
</table>

*For Independent Study, students must register for a maximum of 12 credits and register for a minimum of 9 credits. Students must complete 18 credits of 400-level courses. Students must complete at least 4 semester hours at UNC Greensboro. Students must maintain a minimum grade of C- in each course within the major.

†For General Physics I and General Physics II, students must complete both parts of the course sequence.

‡For General Chemistry I and General Chemistry II, students must complete both parts of the course sequence.

§For Quantitative Analysis Laboratory, students must complete both parts of the course sequence.

**Important Notes:**

1. Students must complete all prerequisites before enrolling in the major courses.
2. Students must maintain a minimum GPA of 2.0 in CHE courses at UNC Greensboro.
3. Students must complete at least 36 credits at or above the 300 course level.
4. Only major requirement and related area requirement courses at or below the 300-level in which grades of C- or better are earned will be counted toward the major.
5. Students must have an overall GPA of at least 2.0 in CHE courses at UNC Greensboro.
6. This program follows the biochemistry curriculum recommendations of the American Society of Biochemists and Molecular Biologists.
Biochemistry, B.S.

* The course is taken as an audit.
** This course is strongly recommended if not use as Advanced Biochemistry elective.
† Counts toward GEC GNS requirement.
‡ Counts toward GEC GMT requirement.
§ Counts toward LEC GLS/GPS requirement.

Electives

Electives should be sufficient to complete the 120 credit hours required for the degree. Additional advanced courses in Chemistry and Biology are recommended. CST 105, which fulfills the GRD requirement, is recommended.