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

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

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

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

Major Requirements

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Required

- CHE 111 General Chemistry I
  & CHE 112 and General Chemistry I Laboratory
- CHE 114 General Chemistry II
  & CHE 115 and General Chemistry II Laboratory
- CHE 331 Quantitative Analysis
  & CHE 333 and Quantitative Analysis Laboratory
- CHE 342 Inorganic Chemistry
- CHE 351 Organic Chemistry I
- CHE 352 Organic Chemistry II
- CHE 353 Organic Laboratory Techniques
- CHE 355 Intermediate Organic Chemistry Lab
- CHE 402 Chemistry Seminar
- CHE 406 & CHE 407 Introductory Physical Chemistry
  and Introductory Physical Chemistry Laboratory
- CHE 456 Biochemistry I
- CHE 457 Biochemistry II
- CHE 458 Biochemistry Laboratory
- CHE 401 Chemistry Seminar Introduction

Related Area Requirements 29

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BIO 111 Principles of Biology I
  & 111L and Principles of Biology I Laboratory
BIO 112 Principles of Biology II
  & 112L and Principles of Biology II Laboratory
MAT 196 Calculus A
MAT 296 Calculus B
Select one of the following:

- BIO 392 Genetics
  & BIO 375 and Cell Biology and Genetics Laboratory
- BIO 355 Cell Biology
  & BIO 375 and Cell Biology and Genetics Laboratory
Select one of the following:

- PHY 211 General Physics I
  & PHY 212 and General Physics II
- PHY 291 General Physics I with Calculus
  & PHY 292 and General Physics II with Calculus

Advanced Biochemistry Elective or Independent Study 3-4

Select 3-4 credits of the following:

- CHE 431 Instrumental Analysis
- CHE 436 Computational Chemistry
- CHE 442 Advanced Inorganic Chemistry I
- CHE 453 Advanced Organic Chemistry I
- CHE 455 Organometallic Chemistry
- CHE 470B Special Topics in Chemistry: Biochemistry
- CHE 481 Synthetic Techniques
- CHE 491 Senior Research
- CHE 492 Senior Research
- BIO 494 Introduction to Biotechnology
- BIO 499 Undergraduate Research
- KIN 475 Independent Study
- NTR 427 Undergraduate Research
- PHY 495 Research Experience in Physics

Advanced Biological Science Elective 3-4

Select one or more courses from the following:

- BIO 277 Human Physiology
  & 277L and Human Physiology Laboratory
- BIO 424 Plant Physiology and Biotechnology
- BIO 443 Biophysics
- BIO 464 Developmental Biology
  & 464L and Developmental Biology Laboratory
- BIO 478 Hormones in Action
- BIO 479 Neurobiology
  & 479L and Neurobiology Laboratory
- BIO 481 General Microbiology
  & 481L and General Microbiology Laboratory
- BIO 482 Molecular Biological Approaches in Research
- BIO 485 Virology
BIO 494  Introduction to Biotechnology
BIO 495  Advanced Genetics

*  The course is taken as an audit.
** This course is strongly recommended if not use as Advanced Biochemistry elective.

Electives
Electives should be sufficient to complete the 120 credit hours required for the degree. Additional advanced courses in Chemistry and Biology are recommended.

Disciplinary Honors in Chemistry and Biochemistry
Requirements
- A minimum of 12 credit hours as defined below.
- UNC Greensboro cumulative GPA of 3.30 or better or, for transfer students, cumulative GPA of 3.30 or better from all prior institutions.

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<tr>
<td>Required</td>
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<tr>
<td>HSS 490</td>
<td>Senior Honors Project</td>
<td>6</td>
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<td>6 credits of Honors course work in the major</td>
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<tr>
<td></td>
<td>3 credits of Honors course work in the major or another area</td>
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Recognition
Receive a Certificate of Disciplinary Honors in Chemistry and Biochemistry; have that accomplishment, along with the title of the Senior Honors Project, noted on the official transcript; and be recognized at a banquet held at the end of the spring semester.

Honors Advisor
Contact Liam Duffy at liam_duffy@uncg.edu for further information and guidance about Honors in Chemistry and Biochemistry. To apply: http://honorscollege.uncg.edu/forms/disc-application.pdf