

Biochemistry, Biochemistry Honors (BSBioch)

The degree of Bachelor of Science in Biochemistry is intended to prepare students for professional careers as biochemists, either upon graduation or after graduate study in biochemistry or related fields. In addition, it may serve as the basis for work in biotechnology, computational biology, biomaterials, forensics, biomedical research, pharmaceuticals, patent law, biotechnology/biomedical business, health professions, or environmental science. Biochemistry Honors is intended to prepare students for academic or research careers.

Students who plan to follow Biochemistry Honors, must be admitted to the [Dean's Scholars, Health Science Scholars, or Polymathic Scholars Honors Program](#).

Total Hours Required: 120

Plan of Study

The Plan of Study is a suggested four-year course sequence to support academic planning and serves as a helpful guide. Currently enrolled students should meet with their academic advisor to tailor their course selections and timelines to their individual goals and circumstances.

Course	Title	Hours
Year 1		
Semester 1		
BIO 315H	Advanced Introduction to Genetics: Honors	3
CH 301C	Foundations of Chemistry I	3
RHE 306	Rhetoric and Writing	3
First-Year Signature Course (090)		3
SDS 325H	Honors Statistics	3
Hours		15
Semester 2		
BIO 325H	Genetics: Honors	3
CH 302C	Foundations of Chemistry II	3
CH 204	Introduction to Chemical Practice	2
Visual and Performing Arts (050)		3
M 408C	Differential and Integral Calculus	4
Hours		15
Year 2		
Semester 1		
CH 328M	Organic Chemistry I	3
CH 128K	Organic Chemistry Laboratory	1
Liberal Arts/Fine Arts course		3
Social and Behavioral Sciences (080)		3
American and Texas Government (070)		3
M 408D	Sequences, Series, and Multivariable Calculus	4
Hours		17
Semester 2		
CH 328N	Organic Chemistry II	3
CH 128L	Organic Chemistry Laboratory	1
BCH 219L	Introduction to Biochemical Laboratory Practices and Skills	2
Liberal Arts/Fine Arts course		3
Additional Science honors course		3
Humanities (040)		3
Hours		15

Year 3		
Semester 1		
PHY 317K	General Physics I	3
PHY 117M	Laboratory for Physics 317K	1
BCH 339F	Foundations of Biochemistry	3
RHE 309S	Critical Reading and Persuasive Writing	3
American and Texas Government (070)		3
NSC 109.2	Health Science Scholars Capstone Experience Preparation	1
Hours		14
Semester 2		
PHY 317L	General Physics II	3
PHY 117N	Laboratory for Physics 317L	1
MBS 344	Molecular Biology	3
BCH 370	Physical Methods of Biochemistry	3
Free Elective		3
Hours		13
Year 4		
Semester 1		
BCH 339J	Chemical and Synthetic Biology	3
CH 455	Fundamentals of Analytical Chemistry	4
BCH 368H	Capstone Honors Research	3
BCH 339M	Structure and Function of Molecular Machines	3
U.S. History (060)		3
Hours		16
Semester 2		
BCH 339N	Systems Biology and Bioinformatics	3
BCH 368H	Capstone Honors Research	3
CH 353M	Physical Chemistry I for Life Sciences	3
U.S. History (060)		3
Free Elective		3
Hours		15
Total Hours		120

Requirements

All requirements are listed below, starting with the most specialized moving to the most general. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy [General Education](#) requirements, including [Core Curriculum](#).

Code	Title	Hours
Major		
<i>Honors Breadth Requirement (credit earned by examination may not be counted toward this requirement)</i>		
An honors mathematics or Statistics and Data Science course		3
BIO 315H	Advanced Introduction to Genetics: Honors	3
BIO 325H	Genetics: Honors	3
CH 301C	Foundations of Chemistry I	3
CH 302C	Foundations of Chemistry II	3
Hours chosen from: College of Liberal Arts and/or the College of Fine Arts coursework		6
Hours chosen from: additional coursework approved by the departmental honors advisor		13
Choose a sequence below:		8
Sequence 1:		
M 408C	Differential and Integral Calculus	
M 408D	Sequences, Series, and Multivariable Calculus	
Sequence 2:		
M 408N	Differential Calculus for Science	
M 408S	Integral Calculus for Science	

M 408M	Multivariable Calculus	
SDS 320E	Elements of Statistics	3
Choose a sequence below:		2
Sequence 1:		
CH 104M	Introduction to Chemical Practice I	
CH 104N	Introduction to Chemical Practice II	
Sequence 2:		
CH 204	Introduction to Chemical Practice	
Sequence 3:		
CH 317	Descriptive Inorganic Chemistry	
Choose a sequence below:		8
Sequence 1:		
CH 128K	Organic Chemistry Laboratory	
CH 128L	Organic Chemistry Laboratory	
CH 328M	Organic Chemistry I	
CH 328N	Organic Chemistry II	
Sequence 2:		
CH 220C	Organic Chemistry Laboratory	
CH 320M	Organic Chemistry I	
CH 320N	Organic Chemistry II	
BCH 219L	Introduction to Biochemical Laboratory Practices and Skills	2
BCH 339F	Foundations of Biochemistry	3
BCH 339J	Chemical and Synthetic Biology	3
BCH 339M	Structure and Function of Molecular Machines	3
BCH 339N	Systems Biology and Bioinformatics	3
BCH 370	Physical Methods of Biochemistry	3
CH 353	Physical Chemistry I	3
or CH 353M	Physical Chemistry I for Life Sciences	
CH 455	Fundamentals of Analytical Chemistry	4
MBS 344	Molecular Biology	3
UGS 302	First-Year Signature Course (approved by the departmental honors advisor)	3
or UGS 303	First-Year Signature Course	
Hours chosen from:		1
NSC 109.1	Planning Your Capstone Experience (for Health Science Scholars)	
NSC 109.2	Health Science Scholars Capstone Experience Preparation (for Dean's Scholars)	
NSC 109.4	Polymathic Capstone Field Invention (for Polymathic Scholars)	
Hours chosen from:		3
Choose a sequence below:		6
Sequence 1:		
BCH 368H	Capstone Honors Research (two semesters)	
Sequence 2:		
BCH 368H	Capstone Honors Research	
a 3-semester-hour upper-division research course, approved by the departmental honors advisor		
Sequence 3:		
Hours chosen from:		
BCH 368W	Supervised Literature Review	
or BCH 368R	Supervised Capstone Research	
or BCH 368T	Biotechnology Capstone	
or BCH 368M	Capstone Experience in Biochemistry	
NSC 323	Natural Sciences Topics	

NSC 371	Capstone Thesis Seminar	
<i>Subtotal</i>		95
Free electives: Additional coursework to reach total hours required.		2
<i>Subtotal</i>		2
General Education		
<u>Remaining Core Curriculum (42 hours total)</u>		23
<u>Foreign Language other than English, Beginning Proficiency</u>		
<i>Subtotal</i>		23
<u>College Requirements - Natural Sciences</u>		
<u>General University Requirements</u>		
Total Hours		120

Degree- Bachelor of Science in Biochemistry (BSBioch)

All students must complete at least 21 semester hours of upper-division coursework; at least 12 semester hours of upper-division coursework in chemistry must be completed in residence at the University.

Grade Requirements

Students must earn a grade of at least C- in each mathematics and science course required for the degree, and a University grade point average in these courses of at least 2.00. More information about grades and the grade point average is given in the [General Information Catalog](#).

Order and Choice of Work

The student must consult the BIO Advising Office or Honors Advisor each semester regarding order and choice of work.

Special Requirements

To graduate under Biochemistry Honors, students must remain in good standing in the Dean's [Scholars, Health Science Scholars, or Polymathic](#) Scholars Honors Program, **must submit an honors thesis approved by the departmental honors advisor** and present their research in an approved public forum, such as the Spring Undergraduate Research Forum or Fall Undergraduate Research [Symposium or CNS Honors Thesis](#) Symposium.