

Biochemistry, Biochemistry (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.

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		
M 408C	Differential and Integral Calculus	4
CH 301	Principles of Chemistry I	3
BIO 311C	Introductory Biology I	3
<u>First-Year Signature Course (090)</u>		3
Minor/Certificate course		3
Hours		16
Semester 2		
M 408D	Sequences, Series, and Multivariable Calculus	4
CH 302	Principles of Chemistry II	3
BIO 311D	Introductory Biology II	3
CH 204	Introduction to Chemical Practice	2
RHE 306	Rhetoric and Writing	3
Hours		15
Year 2		
Semester 1		
CH 320M	Organic Chemistry I	3
BIO 325	Genetics	3
SDS 320E	Elements of Statistics	3
BCH 219L	Introduction to Biochemical Laboratory Practices and Skills	2
GOV 312L	Issues and Policies in American Government	3
Hours		14
Semester 2		
CH 320N	Organic Chemistry II	3
C S 303E	Elements of Computers and Programming	3
BCH 339F	Foundations of Biochemistry	3
Minor/Certificate course		3
<u>Visual and Performing Arts (050)</u>		3
Hours		15
Year 3		
Semester 1		
PHY 317K	General Physics I	3
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	1
MBS 344	Molecular Biology	3
GOV 310L	American and Texas Government	3
E 316L	British Literature	3
Minor/Certificate course		3
Hours		16
Semester 2		
PHY 317L	General Physics II	3

PHY 105N	Laboratory For Physics 302L, 303L, and 317L	1
BCH 370	Physical Methods of Biochemistry	3
BCH 339J	Chemical and Synthetic Biology	3
Minor/Certificate course		3
<u>U.S. History (060)</u>		3
Hours		16
Year 4		
Semester 1		
CH 353	Physical Chemistry I	3
BCH 368W	Supervised Literature Review	3
BCH 339M	Structure and Function of Molecular Machines	3
Minor/Certificate course		3
<u>U.S. History (060)</u>		3
Hours		15
Semester 2		
CH 455	Fundamentals of Analytical Chemistry	4
Free Elective		3
BCH 339N	Systems Biology and Bioinformatics	3
<u>Social and Behavioral Sciences (080)</u>		3
Hours		13
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		
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 X08M	Multivariable Calculus	
SDS 320E	Elements of Statistics	3
Choose a sequence below:		8
Sequence 1: (recommended)		
PHY 317K	General Physics I	
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	
PHY 317L	General Physics II	
PHY 105N	Laboratory For Physics 302L, 303L, and 317L	
Sequence 2:		
PHY 303K	Engineering Physics I	
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	
PHY 303L	Engineering Physics II	
PHY 105N	Laboratory For Physics 302L, 303L, and 317L	
Sequence 3:		
PHY 301	Mechanics	
PHY 101L	Laboratory for Physics 301	
PHY 316	Electricity and Magnetism	
PHY 116L	Laboratory for Physics 316	
Hours chosen from:		3
CH 301	Principles of Chemistry I	
CH 301C	Foundations of Chemistry I	

CH 401	Principles of Chemistry I	
Hours chosen from:		3
CH 302	Principles of Chemistry II	
CH 302C	Foundations of Chemistry II	
CH 402	Principles of Chemistry II	
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	
CH 320M	Organic Chemistry I	3
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
Choose a sequence below:		6
Sequence 1:		
BIO 311C	Introductory Biology I	
BIO 311D	Introductory Biology II	
BIO 325	Genetics	
Sequence 2:		
BIO 315H	Advanced Introduction to Genetics: Honors	
BIO 325H	Genetics: Honors	
MBS 344	Molecular Biology	3
Hours chosen from: Capstone experience		3
BCH 368L	Capstone Course-Based Research Experience	
BCH 368T	Biotechnology Capstone	
BCH 368H	Capstone Honors Research	
BCH 368R	Supervised Capstone Research	
BCH 368W	Supervised Literature Review	
BCH 368M	Capstone Experience in Biochemistry (Fall and Spring only)	
Approved course/experienced by Capstone Advisor		
Hours chosen from:		15
Hours chosen from: Upper-division BCH, BIO, CH, C S, INB, MOL, NEU, or SDS (excludes CH 372C and CH 368L)		
A transcript-recognized certificate or a transcript-recognized minor		
Subtotal		81
Free electives: Additional coursework to reach total hours required.		3
Subtotal		3
General Education		
<u>Remaining Core Curriculum (42 hours total)</u>		36
<u>Foreign Language other than English, Beginning Proficiency</u>		
Subtotal		36
<u>College Requirements - Natural Sciences</u>		

General University Requirements

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.