Biology, Biology Honors (BSBio)

The Bachelor of Science in Biology degree program offers 10 concentrations. The concentrations have certain prescribed work in common, and each concentration has additional requirements. Many fields in the study of biological systems require broadly based training that transcends the classical boundaries of biology. In planning a program of work to meet his or her degree requirements, a student interested in specializing in these interdisciplinary areas should choose courses both in biology and in sciences that complement biology.

Students who plan to follow the Biology Honors concentration must be admitted to the Dean's Scholars, Health Science Scholars, or Polymathic Scholars Honors Programs.

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 408D	Sequences, Series, and Multivariable Calculus	4
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
	Hours	**16**
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
SDS 322E	Elements of Data Science	3
	Hours	**14**
Year 2		
Semester 1		
INB 370	Evolution	3
BIO 206L	Introductory Laboratory Experiments in Biology	2
Social and Behavioral Sciences (080)		3
Additional Mathematics honors course		3
MNS 320	Marine Ecology	3
	Hours	**14**
Semester 2		
MBS 326R	General Microbiology	3
U.S. History (060)		3
Hours chosen from: upper-division BIO Lab		3
American and Texas Government (070)		3
Hours chosen from: additional coursework approved by the departmental honors advisor		3
	Hours	**15**
Year 3		
Semester 1		
PHY 317K	General Physics I	3
PHY 117M	Laboratory for Physics 317K	1
BCH 339N	Systems Biology and Bioinformatics	3
INB 321G	Principles of Computational Biology	3
RHE 309S	Critical Reading and Persuasive Writing	3
MNS 356	Ecosystem Oceanography	3
	Hours	**16**
Semester 2		
PHY 317L	General Physics II	3
PHY 117N	Laboratory for Physics 317L	1
MBS 328	Introductory Plant Physiology	3
U.S. History (060)		3
Humanities (040)		3
Hours chosen from: additional coursework approved by the departmental honors advisor		3
	Hours	**16**
Year 4		
Semester 1		
BIO 379H	Honors Tutorial Course	3
INB 322	Structure, Physiology, and Reproduction of Seed Plants	3
INB 351	Economic Botany	3
Liberal Arts/Fine Arts course		3
American and Texas Government (070)		3
	Hours	**15**
Semester 2		
BIO 379H	Honors Tutorial Course	3
MBS 366	Microbial Genetics	3
INB 373	Ecology	3
Liberal Arts/Fine Arts course		3
Free Elective		1
NSC 109.2	Health Science Scholars Capstone Experience Preparation	1
	Hours	**14**
	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
Concentration		
Breadth Requirement (Credit earned by examination may not be counted toward this requirement)		
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: Coursework from the College of Liberal Arts and/or the College of Fine Arts		6
Additional Coursework approved by the departmental honors advisor		18
Hours chosen from:		21
Cellular, developmental, and molecular biology:		
BCH 369	Fundamentals of Biochemistry	
or BCH 339F	Foundations of Biochemistry	
BCH 339J	Chemical and Synthetic Biology	
BCH 339M	Structure and Function of Molecular Machines	
BCH 364F	Astrobiology	
MBS 320	Cell Biology	
MBS 326R	General Microbiology	
MBS 330	Molecular Biology of Animal Viruses	
MBS 336	Tumor Biology	

MBS 355	Microbial Biochemistry	
MBS 339M	Bacterial Behavior and Signaling Mechanisms	
MBS 344	Molecular Biology	
MBS 360K	Immunology	
MBS 350	Developmental, Stem Cell, and Regenerative Biology	
MBS 350M	Plant Molecular Biology	
MBS 361	Human Infectious Diseases	
Genetics and genomics:		
BCH 339N	Systems Biology and Bioinformatics	
INB 321G	Principles of Computational Biology	
MBS 366	Microbial Genetics	
MBS 366R	Molecular Genetics and Medicine	
INB 471	Introduction to Systematics	
SDS 322E	Elements of Data Science	
Physiology, neuroscience, and behavior:		
MBS 328	Introductory Plant Physiology	
INB 438L	Animal Communication	
INB 359K	Principles of Animal Behavior	
INB 361T	Comparative Animal Physiology	
MBS 367C	Cellular and Molecular Bases of Neural Development	
INB 365S	Human Systems Physiology	
INB 374	Plant Anatomy with Histological Techniques	
MNS 355C	Physiology of Fishes	
Ecology, evolution, and biodiversity:		
INB 322	Structure, Physiology, and Reproduction of Seed Plants	
INB 323	Mathematical Modeling for Biology	
INB 324	Survey of the Plant Kingdom	
INB 346	Human Biology	
INB 351	Economic Botany	
INB 364	Microbial Ecology	
INB 471G	Natural History Museum Science	
INB 373	Ecology	
INB 375	Conservation Biology	
MNS 320	Marine Ecology	
MNS 352C	Estuarine Ecology	
MNS 352D	Marine Botany	
MNS 352E	Marine Conservation Biology	
MNS 353	Topics in Marine Science	
MNS 354	Marine Invertebrates	
MNS 354C	Biology of Fishes	
MNS 354E	Aquatic Microbiology	
MNS 354Q	Marine Environmental Science	
MNS 356	Ecosystem Oceanography	
MNS 357	Marine Phytoplankton Diversity	
Hours chosen from: Upper-division Laboratory Courses in Biology (BIO 377 or 379H may be used as only one of the three required upper-division laboratory courses)		3
UGS 303	First-Year Signature Course (approved by the departmental honors advisor)	3
or UGS 302	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)	
Choose a sequence below:		6
Sequence 1:		
BIO 379H	Honors Tutorial Course (taken twice)	
Sequence 2:		
NSC 323	Natural Sciences Topics	
NSC 371	Capstone Thesis Seminar	
Subtotal		*73*
Degree (see details below) (Note: some requirements above count in place of below degree requirements)		**22**
Free electives: Additional coursework to reach total hours required.		1
Subtotal		*23*
General Education		
Remaining Core Curriculum (42 hours total)		24
Foreign Language other than English, Beginning Proficiency		
Subtotal		*24*
College Requirements - Natural Sciences		
General University Requirements		
Total Hours		**120**

Degree-Bachelor of Science Biology (BSBio)

Code	Title	Hours
Hours chosen from:		4
M 408C	Differential and Integral Calculus	
M 408R	Differential and Integral Calculus for the Sciences	
M X08S & M X08N	Integral Calculus for Science and Differential Calculus for Science	
SDS 320E	Elements of Statistics	3
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	
CH 204	Introduction to Chemical Practice	2
Hours chosen from a single sequence below:		8
Sequence 1		
PHY 317K	General Physics I	
PHY 117M	Laboratory for Physics 317K	
PHY 317L	General Physics II	
PHY 117N	Laboratory for Physics 317L	
Sequence 2		
PHY 301	Mechanics	
PHY 101L	Laboratory for Physics 301	
PHY 316	Electricity and Magnetism	
PHY 116L	Laboratory for Physics 316	
Sequence 3		
PHY 303K	Engineering Physics I	
PHY 103M	Laboratory for Physics 303K	

PHY 303L	Engineering Physics II	
PHY 103N	Laboratory for Physics 303L	
Sequence 4		
PHY 302K	General Physics Technical Course: Mechanics, Heat, and Sound	
PHY 102M	Laboratory for Physics 302K	
PHY 302L	General Physics Technical Course: Electricity and Magnetism, Light, Atomic and Nuclear Physics	
PHY 102N	Laboratory for Physics 302L	
Hours chosen from a single 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	
BIO 206L	Introductory Laboratory Experiments in Biology	2
or INB 208L	Field Biology	
or MBS 226L	General Microbiology Laboratory	
INB 370	Evolution	3
All students must complete at least 36 semester hours of upper-division coursework; at least 21 semester hours of upper-division coursework in biology must be completed in residence at the University.		
Total Hours		**34**

Additional Requirements and Policy

Students in all Options must fulfill both the University's General Requirements for graduation and the college requirements. They must also earn a grade of at least *C-* in each mathematics and science course required for the degree, and a 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*.

To graduate under Biology 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, and present their research in an approved public forum, such as the college's annual Undergraduate Research Forum. More information about the Undergraduate Research Forum is available at https://cns.utexas.edu/.

Order and Choice of Work

Students begin the Bachelor of Science in Biology degree program with six hours of introductory biology for science majors (BIO 311C and BIO 311D), as well as CH 301 or CH 301C and CH 302 or CH 302C and M 408C, M 408N, or M 408R. Students should consult with academic advisors about specific concentrations within biology, about appropriate courses in mathematics and physical sciences, and about course load and the balance between laboratory and nonlaboratory work. Most students select a concentration by the end of the second year and take at least 21 hours of upper-division coursework in the major in the third and fourth years.