

Biology, Genetics, Genomics, and Computational Biology (BSA)

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
BIO 311C	Introductory Biology I	3
CH 301	Principles of Chemistry I	3
UGS 302	First-Year Signature Course	3
Hours		13
Semester 2		
M 408S	Integral Calculus for Science	4
BIO 311D	Introductory Biology II	3
CH 302	Principles of Chemistry II	3
CH 204	Introduction to Chemical Practice	2
RHE 306	Rhetoric and Writing	3
Hours		15
Semester 3		
<u>U.S. History (060)</u>		3
<u>American and Texas Government (070)</u>		3
Hours		6
Year 2		
Semester 1		
CH 320M	Organic Chemistry I	3
BIO 325	Genetics	3
BIO 206L	Introductory Laboratory Experiments in Biology	2
Language, Arts, and Culture		3
Social and Behavioral Sciences		3
Hours		14
Semester 2		
CH 320N	Organic Chemistry II	3
CH 220C	Organic Chemistry Laboratory	2
INB 370	Evolution	3
<u>Visual and Performing Arts (050)</u>		3
Hours		11
Semester 3		
<u>American and Texas Government (070)</u>		3
Hours		3
Year 3		
Semester 1		
PHY 302K	General Physics Technical Course: Mechanics, Heat, and Sound	3
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	1
MBS 328	Introductory Plant Physiology	3
Language, Arts, and Culture		3
Minor/Certificate course		3
<u>Humanities (040)</u>		3
Hours		16

Semester 2		
INB 346	Human Biology	3
SDS 320E	Elements of Statistics	3
Language, Arts, and Culture		3
Minor/Certificate course		3
Hours		12
Year 4		
Semester 1		
MBS 320	Cell Biology	3
MNS 355C	Physiology of Fishes	3
MBS 356E	Epigenetics and Epitranscriptomics	3
Minor/Certificate course		6
Hours		15
Semester 2		
INB 369F	Field Herpetology	3
NSC 371	Capstone Thesis Seminar	3
Minor/Certificate course		3
Language, Arts, and Culture		3
<u>U.S. History (060)</u>		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
Concentration		
Hours chosen from:		9
MBS 325T	Human Genetics	
MBS 350	Developmental, Stem Cell, and Regenerative Biology	
MBS 356E	Epigenetics and Epitranscriptomics	
MBS 327G	Genomics	
MBS 366	Microbial Genetics	
MBS 366R	Molecular Genetics and Medicine	
BIO 325L	Laboratory Experience in Genetics	
BIO 377	Undergraduate Research	
INB 321G	Principles of Computational Biology	
SDS 322E	Elements of Data Science	
MNS 354E	Aquatic Microbiology	
Hours chosen from:		3
BIO 325L	Laboratory Experience in Genetics	
INB 321G	Principles of Computational Biology	
BIO 377	Undergraduate Research	
Subtotal		12
Major (see details below)		43
Subtotal		43
Degree (see details below)		27
Free electives: Additional coursework to reach total hours required.		
Subtotal		27
General Education		
<u>Remaining Core Curriculum (42 hours total)</u>		38
<u>Foreign Language other than English, Intermediate Proficiency</u>		
Subtotal		38
<u>College Requirements - Natural Sciences</u>		

Total Hours	120
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Major - Biology (BSA)

Requirements

Code	Title	Hours
Major		
<i>Mathematics</i>		
M 408C	Differential and Integral Calculus	4
or M 408R	Differential and Integral Calculus for the Sciences	
or M 408N	Differential Calculus for Science	
M 408S	Integral Calculus for Science	4
SDS 320E	Elements of Statistics	3
<i>Primary Science</i>		
BIO 206L	Introductory Laboratory Experiments in Biology	2
BIO 311C	Introductory Biology I	3
BIO 311D	Introductory Biology II	3
Choose a sequence below:		3
Sequence 1:		
BIO 325	Genetics	
Sequence 2:		
BIO 315H	Advanced Introduction to Genetics: Honors	
BIO 325H	Genetics: Honors	
INB 370	Evolution	3
MBS 320	Cell Biology	3
INB 373	Ecology	3
<i>Secondary Science</i>		
CH 301	Principles of Chemistry I	3
or CH 301C	Foundations of Chemistry I	
CH 302	Principles of Chemistry II	3
or CH 302C	Foundations of Chemistry II	
Choose a sequence below:		2
Sequence 1:		
CH 204	Introduction to Chemical Practice	
Sequence 2:		
CH 104M	Introduction to Chemical Practice I	
CH 104N	Introduction to Chemical Practice II	
Choose a sequence below:		4
Sequence 1: (recommended)		
PHY 302K	General Physics Technical Course: Mechanics, Heat, and Sound (recommended)	
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	
Sequence 2:		
PHY 317K	General Physics I	
or PHY 303K	Engineering Physics I	
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	
Sequence 3:		
PHY 301	Mechanics	
PHY 101L	Laboratory for Physics 301	
Total Hours		43

Degree-Bachelor of Science and Arts (BSA)

The requirements for the Bachelor of Science and Arts are designed to give each student flexibility in the selection of courses to meet individual needs.

Code	Title	Hours
Language, Arts, and Culture		
Hours selected from at least two of the following four areas:		12
Fine arts: courses chosen from design, ensemble, fine arts, music, studio art, performance, visual art studies, art history, and theatre and dance		
Humanities: courses chosen from American studies, ancient history and classical civilization, classical civilization, comparative literature, creative writing, English, humanities, philosophy, religious studies, and rhetoric and writing		
Social and behavioral sciences: courses chosen from anthropology, economics, geography, government, history, linguistics, psychology, and sociology		
Foreign language and culture: foreign language courses or culture courses chosen from an approved list available in the college advising centers. Students who elect to pursue a foreign language must complete a beginning level competency. Students who complete intermediate or advanced level foreign language courses rather than courses equivalent to beginning level competency may count only one intermediate or advanced course toward the language, arts, and culture requirement (a maximum of six hours earned through credit by examination may count toward the language arts and culture requirement)		
Additional Requirements		
Completion of one of the following:		15
Transcript-recognized minor or certificate (minor outside the College of Pharmacy, Cockrell School of Engineering, Jackson School of Geosciences, and School of Nursing)		
Fifteen hours in a single field of study (outside the College of Natural Sciences, College of Pharmacy, Cockrell School of Engineering, Jackson School of Geosciences, and School of Nursing)		
Total Hours		27

Additional Requirements and Policies

- Students may not use a course counting toward one area of prescribed work to fulfill the requirements of another area of prescribed work unless expressly permitted as follows:
 - Courses counting toward the university core curriculum may also count toward the major requirements, the additional requirement, and electives.
 - Per university policy, a minimum of nine hours of the transcript-recognized minor may not be also used to satisfy the major.
 - Per university policy, a minimum of one course taken in a transcript-recognized certificate to satisfy the additional requirement may not also count toward the major.
- Students who seek a transcript-recognized minor or transcript-recognized certificate must meet the minimum grade requirements and grade point average requirements of the program.
- Students must earn a University grade point average of at least 2.00 in all courses taken at the University (including credit by examination, correspondence, and extension), a grade of at least C- in each mathematics and science course counted toward the major, and a grade point average of at least 2.00 in the courses fulfilling the major.

4. Students must complete a minimum of 60 hours in residence at the University, including at least 18 hours of the major. The 18 hours of the major in residence must include at least nine hours of advanced coursework.