

B.S. BIOLOGY

Overview

Biology is a multidisciplinary cutting-edge field encompassing the vast diversity of life from the smallest amino acid to ecosystem dynamics.

Our program includes a diversity of courses that are taught by faculty who are dedicated to quality education through scholarship and research. The breadth of our faculty interests and experiences enable students to specialize their degree in sub-disciplines of biology such as biotechnology, ecology and conservation biology, organismal biology.

Program Level Student Learning Outcomes

1. Explain biological concepts across sub disciplines.
2. Implement research methodology as it applies across the various biological subdisciplines.
3. Critically evaluate scientific research in the biological sciences.
4. Demonstrate strong communication skills.

Program Entry Requirements

Students will be admitted into the Biology major by the faculty once the application criteria are met. To be accepted into the Biology program, students must:

- Have an overall GPA of 2.75 or higher.

Bachelor of Science Biology - Biotechnology Concentration

Courses that are common to all concentrations may be applied to all. At least 120 hours are required for the degree.

Code	Title	Credit Hours
Texas Common Core ¹		
Communications-010		
ENGL 1301	Composition I	3
ENGL 1302	Composition II	3
Mathematics-020		
MATH 2313	Calculus I	3
Life and Physical Sciences-030		
BIOL 1406	Biology for Science Majors I (Lecture + Lab) ²	4
BIOL 1407	Biology for Science Majors II (Lecture + Lab) ²	4
Language, Philosophy and Culture-040		
Select three hours of Language, Philosophy or Culture		3
Creative Arts-050		
Select three hours of Creative Arts		3
American History-060		
HIST 1301	United States History I	3
HIST 1302	United States History II	3
Government/Political Science-070		
GOVT 2305	Federal Government	3
GOVT 2306	Texas Government	3
Social and Behavioral Sciences-080		

Select three hours of Social and Behavioral Sciences		3
Component Area Option-090		
CHEM 1411	General Chemistry I ²	4
Required Courses in the Major Lower-Level		
BIOL 2421	Microbiology for Science Majors ²	4
CHEM 1412	General Chemistry II ²	4
CHEM 2423	Organic Chemistry I (Lecture + Lab) ²	4
CHEM 2425	Organic Chemistry II (Lecture + Lab) ²	4
PHYS 1401	College Physics I	4
Required Courses in the Major Upper-Level		
BIOL 3452	Principles of Genetics ²	4
BIOL 3380	Research Methods ²	3
BIOL 4380	Evolution ²	3
BIOL 4395	Biology Capstone ²	3
CHEM 4430	Biochemistry I ²	4
MATH 3350	Principles of Bio-Statistics	3
Concentration Requirements		
BIOL 4451	Bioinformatics ²	4
BIOL 4470	Cell Biology ²	4
BIOL 4471	Molecular Biology ²	4
BIOL 4475	Proteomics ²	4
CHEM 3415	Analytical Chemistry ²	4
CHEM 4415	Instrumental Analysis ²	4
Choose courses in consultation with faculty advisor ²		8
Additional Electives		
Any level electives		6
Total Credit Hours		120

¹ Refer to General Education Core Requirements for more information.

² Courses must be completed with a "C" or better.

Bachelor of Science Biology - Organismal Biology Concentration

Courses that are common to all concentrations may be applied to all. At least 120 hours are required for the degree.

Code	Title	Credit Hours
Texas Common Core ¹		
Communications-010		
ENGL 1301	Composition I	3
ENGL 1302	Composition II	3
Mathematics-020		
MATH 2313	Calculus I	3
Life and Physical Sciences-030		
BIOL 1406	Biology for Science Majors I (Lecture + Lab) ²	4
BIOL 1407	Biology for Science Majors II (Lecture + Lab) ²	4
Language, Philosophy and Culture-040		
Select three hours of Language, Philosophy or Culture		3

Creative Arts-050		
Select three hours of Creative Arts		3
American History-060		
HIST 1301	United States History I	3
HIST 1302	United States History II	3
Government/Political Science-070		
GOVT 2305	Federal Government	3
GOVT 2306	Texas Government	3
Social and Behavioral Sciences-080		
Select three hours of Social and Behavioral Sciences		3
Component Area Option-090		
CHEM 1411	General Chemistry I ²	4
Requirement Courses in Major Lower-Level		
BIOL 2421	Microbiology for Science Majors ²	4
CHEM 1412	General Chemistry II ²	4
CHEM 2423	Organic Chemistry I (Lecture + Lab) ²	4
CHEM 2425	Organic Chemistry II (Lecture + Lab) ²	4
PHYS 1401	College Physics I	4
Required Courses in the Major Upper-Level		
BIOL 3452	Principles of Genetics ²	4
BIOL 3380	Research Methods ²	3
BIOL 4380	Evolution ²	3
BIOL 4395	Biology Capstone ²	3
CHEM 4430	Biochemistry I ²	4
MATH 3350	Principles of Bio-Statistics	3
Concentration Requirements		
BIOL 3401	Ecology ²	4
BIOL 3315	Advanced Physiology ²	3
BIOL 3318	Animal Physiology ²	3
BIOL 3430	Botany ²	4
BIOL 3420	Entomology (or) ²	4
BIOL 3440	Invertebrate Zoology ²	
BIOL 3445	Comparative Vertebrate Zoology ²	4
BIOL 4346	Animal Behavior ²	3
Choose courses in consultation with faculty advisor ²		7
Additional Electives		
Any level electives		6
Total Credit Hours		120

¹ Refer to General Education Core Requirements for more information.

² Courses must be completed with a "C" or better.

Bachelor of Science Biology - Ecology/Conservation Concentration

Courses that are common to all concentrations may be applied to all. At least 120 hours are required for the degree.

Code	Title	Credit Hours
Texas Common Core ¹		
Communications-010		

ENGL 1301	Composition I	3
ENGL 1302	Composition II	3
Mathematics-020		
MATH 2313	Calculus I	3
Life and Physical Sciences-030		
BIOL 1406	Biology for Science Majors I (Lecture + Lab) ²	4
BIOL 1407	Biology for Science Majors II (Lecture + Lab) ²	4
Language, Philosophy and Culture-040		
Select three hours of Language, Philosophy or Culture		3
Creative Arts-050		
Select three hours of Creative Arts		3
American History-060		
HIST 1301	United States History I	3
HIST 1302	United States History II	3
Government/Political Science-070		
GOVT 2305	Federal Government	3
GOVT 2306	Texas Government	3
Social and Behavioral Sciences-080		
Select three hours of Social and Behavioral Sciences		3
Component Area Option-090		
CHEM 1411	General Chemistry I ²	4
Required Courses in the Major Lower-Level		
BIOL 2421	Microbiology for Science Majors ²	4
CHEM 1412	General Chemistry II ²	4
CHEM 2423	Organic Chemistry I (Lecture + Lab) ²	4
CHEM 2425	Organic Chemistry II (Lecture + Lab) ²	4
PHYS 1401	College Physics I	4
Required Courses in the Major Upper-Level		
BIOL 3452	Principles of Genetics ²	4
BIOL 3380	Research Methods ²	3
BIOL 4380	Evolution ²	3
BIOL 4395	Biology Capstone ²	3
CHEM 4430	Biochemistry I ²	4
MATH 3350	Principles of Bio-Statistics	3
Concentration Requirements		
BIOL 3401	Ecology ²	4
BIOL 3440	Invertebrate Zoology ²	4
BIOL 3430	Botany ²	4
BIOL 4301	Conservation Biology ²	3
BIOL 4302	Restoration Ecology ²	3
BIOL 4346	Animal Behavior ²	3
CHEM 4431	Biochemistry II ²	4
Choose courses in consultation with faculty advisor ²		7
Additional Electives		

Any level electives	6
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Total Credit Hours	120

¹ Refer to General Education Core Requirements for more information.

² Courses must be completed with a "C" or better.