

LIFE SCIENCE (BA)

Program Description

The Life Science major is designed for students with a general interest in the biological sciences. This degree provides flexibility for those who want to focus on particular areas of biology that may complement other career options.

Entering and Completing the Major

In order to earn a degree, you must complete at least one academic major. SPU encourages students to explore various academic paths, so if you change your mind about a major, or want to include an additional program, you are able to do so, as outlined below.

Note that the University encourages you to enter your chosen major(s) as soon as you have determined it and are eligible to join it, especially by the start of your junior year. Students who transfer as juniors and seniors should enter a major within their first two quarters at SPU.

- If this is your first quarter at SPU and you identified a major in this department as your first choice on your application for admission to the University, you have gained entry to the major. To change or add a major, follow these instructions (<https://spu.atlassian.net/l/cp/a3th1keb/>).
- If you are an SPU student with an SPU cumulative GPA of 2.0 or better, follow these instructions (<https://spu.atlassian.net/l/cp/a3th1keb/>) to enter a major in this department.
- The University requires a grade of C- or better in all classes that apply to a major; however, programs may require higher minimum grades in specific courses. You may repeat an SPU course only once for a higher grade.
- To advance in this program, meet with your faculty advisor regularly to discuss your grades, course progression, and other indicators of satisfactory academic progress. If your grades or other factors indicate that you may not be able to successfully complete the major or minor, your faculty advisor can work with you to explore options, which may include choosing a different major.
- You must complete the major requirements that are in effect in the SPU Undergraduate Catalog for the year you enter the major.

Life Science (BA)

73 Credits Minimum, Including 24 Upper Division (UD)

Code	Title	Credits
General Core Requirements		
BIO 2101	General Biology	5
BIO 2102	General Biology	5
BIO 2103	General Biology	5
BIO 4615	Bioethics	3
Section Credits Required		18
Supporting Courses		
CHM 1211	General Chemistry I	5
CHM 1212	General Chemistry II	5
MAT 2360	Introduction to Statistics for the Sciences	5
Section Credits Required		15
Biology Electives		
Select 30 credits of the following: ^{1, 5}		30

BIO 2129	Human Anatomy and Physiology	
BIO 2130	Human Anatomy and Physiology	
BIO 3000	Introduction to Biological Anthropology	
BIO 3200	Geographic Information Systems in Biology	
BIO 3302	Coral Reef Ecology	
BIO 3303	Evolutionary Ecology in the Galapagos Islands	
BIO 3304	Oceanography of the Galapagos Archipelago	
BIO 3305	Marine Restoration Ecology	
BIO 3310	Ecology	
BIO 3325	Genetics	
BIO 3350	Immunology	
BIO 3351	General Microbiology	
BIO 3432	Biodiversity: Vertebrate Biology	
BIO 3434	Animal Behavior	
BIO 3453	Biodiversity: Plant Identification and Taxonomy	
BIO 3898	Women in Science	
BIO 3899	Scientific Literature	
BIO 4256	Environmental Physiology	
BIO 4320	Principles of Development	
BIO 4325	Molecular Biology	
BIO 4330	Evolutionary Mechanisms	
BIO 4352	Cell Biology	
BIO 4360	Biostatistics	
BIO 4361	Biochemistry	
BIO 4410	Human Physiology	
BIO 4413	Animal Physiology	
BIO 4415	Plant Physiology	
BIO 4418	Neurobiology	
BIO 4419	Medical Virology	
BIO 4435	Biodiversity: Parasites and Pests	
BIO 4744	Marine Botany	
BIO 4810	Marine Ecology	
BIO 4815	Aquatic Ecology	
BIO 4825	Forest Ecology	
BIO 4835	Conservation Biology	
BIO 4840	Chemical Ecology	
BIO 4900	Independent Study in Biology	
BIO 4930	Biology Practicum	
BIO 4940	Internship in Biology	
BIO 4950	Special Studies in Biology	
BIO 4970	Research Methods in Biology	
BIO 4978	Biological Research Proposal	
BIO 4979	Biological Research	
BIO 4982	Advanced Biological Research	
Section Credits Required		30
Restricted Electives		
Select 10 credits of the following: ²		10
BIO 1145	Oceanography	
CHM 1213	General Chemistry III	
CHM 1330	Survey of Organic Chemistry ³	
CHM 2213	Inorganic Qualitative Analysis	
CHM 3371	Organic Chemistry I ³	

CHM 3372	Organic Chemistry II	
CHM 3373	Organic Chemistry III	
FCS 3340	Human Nutrition	
MAT 1221	Survey of Calculus ⁴	
MAT 1234	Calculus I ⁴	
PHY 1101	General Physics	
PHY 1102	General Physics	
PHY 1103	General Physics	
PHY 3011	Global Climate Change: Scientific, Social and Moral Implications	
Section Credits Required		10
Total Credits		73

1

21 UD, 20 credits must include lab or field experience.

2

Extra UD from Bio Electives apply.

3

Cannot count both CHM 1330 Survey of Organic Chemistry and CHM 3371 Organic Chemistry I.

4

Cannot count both MAT 1221 Survey of Calculus and MAT 1234 Calculus I.

5

BIO 3436 Behavioral Ecology may be used as Biology Elective if BIO 3434 Animal Behavior not taken.

Suggested Course Sequence

This suggested course sequence is a potential plan for how to complete the major within four years. Please consult with a departmental faculty advisor for course advisement.

- Students should take Chemistry Placement test (available in Canvas) prior to New Student Advising.
 - A Chemistry Placement score ≥ 35 is a pre-requisite for BIO 2101 General Biology and CHM 1211 General Chemistry I.
 - Students who score < 35 on the Chemistry Placement test, or who would benefit from an introduction to Chemistry, should take CHM 1000 Preparation for General Chemistry in Autumn quarter, then take BIO 2101 General Biology and CHM 1211 General Chemistry I in Winter quarter.

Four-Year Plan: ≥ 35 on Chemistry Placement Test

Course	Title	Credits
Freshman		
Autumn		
CHM 1211	General Chemistry I	5
UCOL 1000	University Colloquium	1
Credits		6
Winter		
BIO 2101	General Biology ¹	5
CHM 1212	General Chemistry II	5
Credits		10

Spring		
BIO 2102	General Biology	5
Credits		5
Any Quarter		
WRI 1000	Academic Inquiry and Writing Seminar	5
WRI 1100	Disciplinary Research and Writing Seminar	5
UFDN 1000	The Christian Faith	5
Credits		15
Sophomore		
Autumn		
BIO 2103	General Biology	5
Credits		5
Any Quarter		
MAT 2360	Introduction to Statistics for the Sciences	5
Select ten credits of Restricted Electives in years 2-4 (see catalog for list).		10
Credits		15
Junior		
Any Quarter		
Select fifteen credits of Biology Electives (see catalog for list).		15
Credits		15
Senior		
Autumn		
BIO 4615	Bioethics	3
Credits		3
Any Quarter		
Select fifteen credits of Biology Electives (see catalog for list).		15
Credits		15
Total Credits		89

1

Students who test at Math Placement Level B and who either score ≥ 45 on the Chemistry Placement Test or transfer in the complete General Chemistry sequence may take BIO 2103 General Biology in Autumn 2024.

Freshman Notes

- Take Math Placement Test (in Canvas) if you are at Math Level 0 or A at time of admission.
 - Math Level B is a prerequisite for BIO 2102 General Biology, BIO 2103 General Biology, CHM 1212 General Chemistry II and MAT 2360 Introduction to Statistics for the Sciences.
 - Students who test into Level 0 or A should plan to take MAT 0144 College Readiness Math I and/or MAT 0145 College Readiness Math II to achieve Math Level B.

Sophomore Notes

- MAT 2360 Introduction to Statistics for the Sciences is a pre-requisite for several upper-division Biology electives.
- 30 credits of Biology courses 2129 or higher may be taken during years 2-4; 21 credits must be upper-division and 20 credits must include a lab. Consult with your faculty advisor to determine which courses are most appropriate for your career goals.

Junior Notes

- Check the time schedule, as most upper division courses are offered only in certain quarters.
- Ensure that you will have sufficient upper-division credits to meet the 60 minimum required for graduation.

Senior Notes

- Ensure you have ≥ 8 credits of "W" courses (can be any course, not just in major).

Four-Year Plan: <35 on Chemistry Placement Test

Course	Title	Credits
Freshman		
Autumn		
CHM 1000	Preparation for General Chemistry	2
UCOL 1000	University Colloquium	1
Credits		3
Winter		
BIO 2101	General Biology	5
CHM 1211	General Chemistry I	5
Credits		10
Spring		
BIO 2102	General Biology	5
CHM 1212	General Chemistry II	5
Credits		10
Any Quarter		
WRI 1000	Academic Inquiry and Writing Seminar	5
WRI 1100	Disciplinary Research and Writing Seminar	5
UFDN 1000	The Christian Faith	5
Credits		15
Sophomore		
Autumn		
BIO 2103	General Biology	5
Credits		5
Any Quarter		
MAT 2360	Introduction to Statistics for the Sciences	5
Select ten credits of Restricted Electives in years 2-4 (see catalog for list).		10
Credits		15
Junior		
Any Quarter		
Select fifteen credits of Biology Electives (see catalog for list).		15
Credits		15
Senior		
Autumn		
BIO 4615	Bioethics	3
Credits		3
Any Quarter		
Select fifteen credits of Biology Electives (see catalog for list).		15
Credits		15
Total Credits		91

Freshman Notes

- Take Math Placement Test (in Canvas) if you are at Math Level 0 or A at time of admission.
 - Math Level B is a prerequisite for BIO 2102 General Biology, BIO 2103 General Biology, CHM 1212 General Chemistry II and MAT 2360 Introduction to Statistics for the Sciences.
- Students who test into Level 0 or A should plan to take MAT 0144 College Readiness Math I and/or MAT 0145 College Readiness Math II to achieve Math Level B.

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