BIOLOGY (BA)

Program Description

The BA in Biology provides a broad foundation in biology and is especially appropriate for students planning to teach at the elementary or secondary level.

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.

Biology (BA)

78 Credits Minimum, Including 28 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 3325	Genetics	5
BIO 4330	Evolutionary Mechanisms	5
Select one of the following:		5
BIO 4256	Environmental Physiology	
BIO 4413	Animal Physiology	
BIO 4415	Plant Physiology	
BIO 4418	Neurobiology	
BIO 4419	Medical Virology	
Select one of the following:		5
BIO 3000	Introduction to Biological Anthropology	
BIO 3432	Biodiversity: Vertebrate Biology	
BIO 3453	Biodiversity: Plant Identification and Taxonomy	
BIO 4320	Principles of Development	
BIO 4435	Biodiversity: Parasites and Pests	
BIO 4744	Marine Botany	
Select one of the following:		5
BIO 3310	Ecology	
BIO 4810	Marine Ecology	
BIO 4815	Aquatic Ecology	
BIO 4825	Forest Ecology	
BIO 4835	Conservation Biology	
BIO 4840	Chemical Ecology	
BIO 4615	Bioethics	3
Section Credits Required		43
Required Supporting Courses		
CHM 1211	General Chemistry I	5
CHM 1212	General Chemistry II	5
Select one of the following Groups:		5-10
Group A:		
CHM 1330	Survey of Organic Chemistry	
Group B:		
CHM 3371	Organic Chemistry I	
CHM 3372	Organic Chemistry II	
MAT 2360	Introduction to Statistics for the Sciences	5
Section Credits Required		20-25
Botany Requirement [1]		
Select one of the following:		
BIO 3453	Biodiversity: Plant Identification and Taxonomy	
BIO 4415	Plant Physiology	
BIO 4744	Marine Botany	
Section Credits Required		0
Electives		
Biology Courses		15
Section Credits Required		15
Total Credits		**78-83**

1 May be met in other sections.

Additional Requirements and Information

- Max 6 credits from BIO 4900-4999 may be applied to major.

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 the 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.

- Students interested in earning a secondary teaching certificate should contact the Certification Officer in SPU's School of Education (soe-cert@spu.edu) prior to their junior year to learn more about the process.

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**
Winter		
CHM 1330	Survey of Organic Chemistry [2]	5
	Credits	**5**
Spring		
BIO 3453	Biodiversity: Plant Identification and Taxonomy [3]	5
	Credits	**5**
Any Quarter		
MAT 2360	Introduction to Statistics for the Sciences	5
Select 5 credits of Ecology from the following:		5
BIO 3310	Ecology	
BIO 4810	Marine Ecology	
BIO 4815	Aquatic Ecology	
BIO 4825	Forest Ecology	
BIO 4835	Conservation Biology	
BIO 4840	Chemical Ecology	
	Credits	**10**
Junior		
Autumn or Winter		
BIO 3325	Genetics	5
	Credits	**5**
Spring		
Apply to graduate!		
	Credits	**0**
Any Quarter		
Select 5 credits of Physiology core from the following:		5
BIO 4256	Environmental Physiology	
BIO 4413	Animal Physiology	
BIO 4415	Plant Physiology	
BIO 4418	Neurobiology	
BIO 4419	Medical Virology	
Select 5 credits of taxonomy/diversity from the following:		5
BIO 3000	Introduction to Biological Anthropology	
BIO 3432	Biodiversity: Vertebrate Biology	
BIO 3453	Biodiversity: Plant Identification and Taxonomy	
BIO 4320	Principles of Development	
BIO 4744	Marine Botany	
	Credits	**10**
Senior		
Autumn		
BIO 4615	Bioethics	3
	Credits	**3**
Winter		
BIO 4330	Evolutionary Mechanisms	5
	Credits	**5**
	Total Credits	**84**

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.

2

CHM 3371 Organic Chemistry I and CHM 3372 Organic Chemistry II (10 cr) may replace CHM 1330 Survey of Organic Chemistry.

3

BIO 4415 Plant Physiology or BIO 4744 Marine Botany can be used to meet the Botany requirement instead. The Botany requirement can also count toward another category in the major.

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 BIO 3325 Genetics.

Junior Notes

- BIO 3325 Genetics is offered both Autumn and Winter. It is a pre-requisite for BIO 4330 Evolutionary Mechanisms, which is only offered in Winter.
- 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 that you have ≥8 credits of "W" courses (can by 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**
Winter		
CHM 1330	Survey of Organic Chemistry [1]	5
	Credits	**5**
Spring		
BIO 3453	Biodiversity: Plant Identification and Taxonomy [2]	5
	Credits	**5**
Any Quarter		
MAT 2360	Introduction to Statistics for the Sciences	5
Select 5 credits of Ecology from the following:		5
BIO 3310	Ecology	
BIO 4810	Marine Ecology	
BIO 4815	Aquatic Ecology	
BIO 4825	Forest Ecology	
BIO 4835	Conservation Biology	
BIO 4840	Chemical Ecology	
	Credits	**10**
Junior		
Autumn or Winter		
BIO 3325	Genetics	5
	Credits	**5**
Spring		
Apply to graduate!		
	Credits	**0**
Any Quarter		
Select 5 credits of taxonomy/diversity from the following:		5
BIO 3000	Introduction to Biological Anthropology	
BIO 3432	Biodiversity: Vertebrate Biology	
BIO 3453	Biodiversity: Plant Identification and Taxonomy	
BIO 4320	Principles of Development	
BIO 4744	Marine Botany	
Select 5 credits of Physiology from the following:		5
BIO 4256	Environmental Physiology	
BIO 4413	Animal Physiology	
BIO 4415	Plant Physiology	
BIO 4418	Neurobiology	
BIO 4419	Medical Virology	
	Credits	**10**
Senior		
Autumn		
BIO 4615	Bioethics	3
	Credits	**3**
Winter		
BIO 4330	Evolutionary Mechanisms	5
	Credits	**5**
	Total Credits	**86**

1

CHM 3371 Organic Chemistry I and CHM 3372 Organic Chemistry II (10 cr) may replace CHM 1330 Survey of Organic Chemistry.

2

BIO 4415 Plant Physiology or BIO 4744 Marine Botany can be used to meet the Botany requirement instead. The Botany requirement can also count toward another category in the major.

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.
- BIO 2102 General Biology and BIO 2103 General Biology can be taken in either order.

Sophomore Notes

- MAT 2360 Introduction to Statistics for the Sciences is a pre-requisite for BIO 3325 Genetics.

Junior Notes

- BIO 3325 Genetics is offered both Autumn and Winter. It is a pre-requisite for BIO 4330 Evolutionary Mechanisms, which is only offered in Winter.
- 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 that you have ≥8 credits of "W" courses (can by any course, not just in major).