

# APPLIED HUMAN BIOLOGY (BS)

## Program Description

The BS in Applied Human Biology is designed for students intending to pursue post-graduate training in physical therapy, occupational therapy or physician assistant programs.

## 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.

## Applied Human Biology (BS)

108 Credits Minimum, Including 24 Upper Division (UD)

Code	Title	Credits
<b>General Core Requirements</b>		
BIO 2101	General Biology	5
BIO 2102	General Biology	5
BIO 2103	General Biology	5
BIO 2129	Human Anatomy and Physiology	5
BIO 2130	Human Anatomy and Physiology	5
BIO 3351	General Microbiology	5
BIO 4615	Bioethics	3
Section Credits Required		33
<b>Required Supporting Courses</b>		
CHM 1211	General Chemistry I	5
CHM 1212	General Chemistry II	5

CHM 1213	General Chemistry III	3
CHM 2213	Inorganic Qualitative Analysis	2
Select one of the following:		5
CHM 1330	Survey of Organic Chemistry	
CHM 3371	Organic Chemistry I	
MAT 2360	Introduction to Statistics for the Sciences	5
Select one of the following Groups:		15
Group A:		
PHY 1101	General Physics	
PHY 1102	General Physics	
PHY 1103	General Physics	
Group B:		
PHY 1121	Physics for Science and Engineering	
PHY 1122	Physics for Science and Engineering	
PHY 1123	Physics for Science and Engineering	
PSY 1180	General Psychology: Individual in Growth	5
Select one of the following:		5
PSY 2470	Lifespan Developmental Psychology	
PSY 3460	Child Developmental Psychology	
PSY 3475	Adolescent Developmental Psychology	
PSY 3480	Adult Developmental Psychology	
PSY 3360	Psychological Disorders	5
Section Credits Required		55
<b>Focused Electives (See bottom of page for Pre-PA/PT/OT course selection)</b>		
BIO 3000	Introduction to Biological Anthropology <sup>1</sup>	
BIO 3350	Immunology	
BIO 4360	Biostatistics	
FCS 3340	Human Nutrition	
HHP 1301	Wellness and Physical Activity	
HHP 3570	Biomechanics	
HHP 3580	Exercise Physiology	
Section Credits Required		10
<b>Electives in Biology Courses <sup>2,3</sup></b>		
Select two of the following:		10
BIO 3302	Coral Reef Ecology	
BIO 3303	Evolutionary Ecology in the Galapagos Islands	
BIO 3305	Marine Restoration Ecology	
BIO 3325	Genetics	
BIO 3432	Biodiversity: Vertebrate Biology	
BIO 3434	Animal Behavior	
BIO 4256	Environmental Physiology	
BIO 4320	Principles of Development	
BIO 4413	Animal Physiology	
BIO 4418	Neurobiology	
BIO 4419	Medical Virology	
BIO 4435	Biodiversity: Parasites and Pests	
Section Credits Required		20
<b>Recommended Courses</b>		
CHM 3372	Organic Chemistry II	
CHM 3373	Organic Chemistry III	

Section Credits Required	0
<b>Total Credits</b>	<b>108</b>

1

BIO 3000 may not count for both this category and the BIO Electives category.

2

BIO 3000 may count here if not used in focused electives.

3

BIO 3436 OK here if BIO 3434 not taken.

## Additional Requirements and Information

- Pre-PA: 10 creds from BIO 3000, 3350, 4360, and FCS 3340
- Pre-PT: 10 creds from HHP 1301, 3570, 3580, and FCS 3340
- Pre-OT: 10 creds from HHP 1301, 3570, 3580, and FCS 3340
- 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  $\geq 35$  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 careers in the health sciences should take PPHS 1200 Introduction to the Health Professions and PPHS 3400 Application Workshop. See the Pre-Professional Health Sciences program (<https://catalog.spu.edu/undergraduate/interdisciplinary-programs/pre-professional-health-sciences/>) website for more information.

## Four-Year Plan: $>35$ on Chemistry Placement Test

Course	Title	Credits
<b>Freshman</b>		
<b>Autumn</b>		
CHM 1211	General Chemistry I	5
UCOL 1000	University Colloquium	1
<b>Credits</b>		<b>6</b>
<b>Winter</b>		
BIO 2101	General Biology <sup>1</sup>	5
CHM 1212	General Chemistry II	5
PPHS 1200	Introduction to the Health Professions	1
<b>Credits</b>		<b>11</b>
<b>Spring</b>		
BIO 2102	General Biology	5
CHM 1213	General Chemistry III	3
CHM 2213	Inorganic Qualitative Analysis	2
<b>Credits</b>		<b>10</b>
<b>Any Quarter</b>		
WRI 1000	Academic Inquiry and Writing Seminar	5

WRI 1100	Disciplinary Research and Writing Seminar	5
UFDN 1000	The Christian Faith	5
<b>Credits</b>		<b>15</b>

### Sophomore

#### Autumn

BIO 2103	General Biology	5
PHY 1101	General Physics	5
or PHY 1121	or Physics for Science and Engineering	
<b>Credits</b>		<b>10</b>

#### Winter

PHY 1102	General Physics	5
or PHY 1122	or Physics for Science and Engineering	
<b>Credits</b>		<b>5</b>

#### Spring

PHY 1103	General Physics	5
or PHY 1123	or Physics for Science and Engineering	
<b>Credits</b>		<b>5</b>

#### Any Quarter

MAT 2360	Introduction to Statistics for the Sciences	5
PSY 1180	General Psychology: Individual in Growth	5
<b>Credits</b>		<b>10</b>

### Junior

#### Autumn

BIO 2129	Human Anatomy and Physiology	5
<b>Credits</b>		<b>5</b>

#### Winter

BIO 2130	Human Anatomy and Physiology	5
CHM 1330	Survey of Organic Chemistry <sup>2</sup>	5
<b>Credits</b>		<b>10</b>

#### Spring

BIO 3351	General Microbiology	5
Apply to graduate!		
<b>Credits</b>		<b>5</b>

#### Any Quarter

Select one of the following Developmental Psychology courses:		5
PSY 2470	Lifespan Developmental Psychology	
PSY 3460	Child Developmental Psychology	
PSY 3475	Adolescent Developmental Psychology	
PSY 3480	Adult Developmental Psychology	
PSY 3360	Psychological Disorders	5
Select 10 credits of Focused Electives in years 3 - 4 (see catalog for list). <sup>3</sup>		10
Select 10 credits of General Biology Electives in years 3 - 4 (see catalog for list).		10
<b>Credits</b>		<b>30</b>

### Senior

#### Autumn

BIO 4615	Bioethics	3
PPHS 3400	Application Workshop	2
<b>Credits</b>		<b>5</b>
<b>Total Credits</b>		<b>127</b>

1

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

2

Some graduate programs require two quarters of Organic Chemistry (CHM 3371 Organic Chemistry I and CHM 3372 Organic Chemistry II, 10 credits) instead of CHM 1330 Survey of Organic Chemistry.

3

BIO 3000 Introduction to Biological Anthropology can count toward the Focused Electives or General Biology Electives category, but not both.

## 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 some Biology electives.

## Junior Notes

- Ensure that you will have sufficient upper-division credits to meet the 60 minimum required for graduation.
- Check the time schedule, as most upper division courses are offered only in certain quarters.
- Consult with your faculty advisor to select Focused Electives and Biology Electives best suited toward your professional goals.

## Senior Notes

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

## Four-Year Plan: <35 on Chemistry Placement Test

Course	Title	Credits
<b>Freshman</b>		
<b>Autumn</b>		
CHM 1000	Preparation for General Chemistry	2
UCOL 1000	University Colloquium	1
<b>Credits</b>		<b>3</b>
<b>Winter</b>		
BIO 2101	General Biology	5
CHM 1211	General Chemistry I	5
PPHS 1200	Introduction to the Health Professions	1
<b>Credits</b>		<b>11</b>
<b>Spring</b>		
BIO 2102	General Biology	5
CHM 1212	General Chemistry II	5
<b>Credits</b>		<b>10</b>
<b>Any Quarter</b>		
WRI 1000	Academic Inquiry and Writing Seminar	5
WRI 1100	Disciplinary Research and Writing Seminar	5
UFDN 1000	The Christian Faith	5
<b>Credits</b>		<b>15</b>
<b>Sophomore</b>		
<b>Autumn</b>		
BIO 2103	General Biology	5
PHY 1101 or PHY 1121	General Physics or Physics for Science and Engineering	5
<b>Credits</b>		<b>10</b>

### Winter

PHY 1102 or PHY 1122	General Physics or Physics for Science and Engineering	5
<b>Credits</b>		<b>5</b>

### Spring

PHY 1103 or PHY 1123	General Physics or Physics for Science and Engineering	5
CHM 1213	General Chemistry III	3
CHM 2213	Inorganic Qualitative Analysis	2
<b>Credits</b>		<b>10</b>

### Any Quarter

MAT 2360	Introduction to Statistics for the Sciences	5
PSY 1180	General Psychology: Individual in Growth	5
<b>Credits</b>		<b>10</b>

### Junior

#### Autumn

BIO 2129	Human Anatomy and Physiology	5
<b>Credits</b>		<b>5</b>

#### Winter

BIO 2130	Human Anatomy and Physiology	5
CHM 1330	Survey of Organic Chemistry <sup>1</sup>	5
<b>Credits</b>		<b>10</b>

#### Spring

BIO 3351	General Microbiology	5
Apply to graduate!		
<b>Credits</b>		<b>5</b>

#### Any Quarter

Select one of the following Developmental Psychology courses:		5
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Select 10 credits of General Biology Electives in years 3 - 4 (see catalog for list).		10
<b>Credits</b>		<b>30</b>

### Senior

#### Autumn

BIO 4615	Bioethics	3
PPHS 3400	Application Workshop	2
<b>Credits</b>		<b>5</b>

#### Total Credits

129

1

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BIO 3000 Introduction to Biological Anthropology can count toward the Focused Electives or General Biology Electives category, but not both.

## 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 some Biology electives.

### **Junior Notes**

- Ensure that you will have sufficient upper-division credits to meet the 60 minimum required for graduation.
- Check the time schedule, as most upper division courses are offered only in certain quarters.
- Consult with your faculty advisor to select Focused Electives and Biology Electives best suited toward your professional goals.

### **Senior Notes**

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