BS in Biology (282022) MAP Sheet

Life Sciences, Biology

For students entering the degree program during the 2017-2018 curricular year.

University Core and Graduation Requirements

University Core Requirements:

Requirements	#Classes	Hours	Classes
Religion Cornerstones			
Teachings and Doctrine of The Book of Mormon	1	2.0	REL A 275
Jesus Christ and the Everlasting Gospel	1	2.0	REL A 250
Foundations of the Restoration	1	2.0	REL C 225
The Eternal Family	1	2.0	REL C 200
The Individual and Society			
American Heritage	1-2	3-6.0	from approved list
Global and Cultural Awareness	1	3.0	from approved list
Skills			
First Year Writing	1	3.0	from approved list
Advanced Written and Oral Communications	1	3.0	from approved list
Quantitative Reasoning	1	3-4.0	from approved list
Languages of Learning (Math or Language)	1	4.0	MATH 112*
Arts, Letters, and Sciences			
Civilization 1	1	3.0	from approved list
Civilization 2	1	3.0	from approved list
Arts	1	3.0	from approved list
Letters	1	3.0	from approved list
Biological Science	1	4.0	BIO 130*
Physical Science	2	7.0	CHEM 105* and PHSCS 105*
Social Science	1	3.0	from approved list
Core Enrichment: Electives			
Religion Electives	3-4	6.0	from approved list
Open Electives	Variable	Variable	personal choice

*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (15 hours overlap)

Graduation Requirements:

Minimum residence hours required	30.0
Minimum hours needed to graduate	120.0

Suggested Sequence of Courses

FRESHMAN YEAR

1st Semester

First-year Writing or American Heritage	3.0
BIO 130	4.0
CHEM 105	4.0
Quantitative Reasoning	3.0
Religion Cornerstone course	2.0
Total Hours	**16.0**

2nd Semester

CHEM 106, 107	4.0
MATH 112	4.0
A HTG or First-Year Writing	3.0
General Elective	3.0
Religion Cornerstone course	2.0
Total Hours	**16.0**

SOPHOMORE YEAR

3rd Semester

BIO 220 or 230	4.0
PHSCS 105 & 107	4.0
MMBIO 240	3.0
Civilization 1 elective	3.0
Religion Cornerstone course	2.0
Total Hours	**16.0**

4th Semester

PHSCS 106 & 108	4.0
Biology elective	3.0
Civilization 2 elective	3.0
Arts or Letters Elective	3.0
Religion Cornerstone course	2.0
Total Hours	**15.0**

JUNIOR YEAR

5th Semester

BIO 350	3.0
PWS 340	3.0
Biology elective	3.0
Arts or Letters elective	3.0
Religion elective	2.0
Total Hours	**14.0**

6th Semester

Biology elective	4.0
Biology elective	3.0
Adv. Written & Oral Communication	3.0
Religion elective	2.0
General electives	3.0
Total Hours	**15.0**

SENIOR YEAR

7th Semester

Biology electives	5.0
General electives	4.0
Social Science elective	3.0
Religion elective	2.0
Total Hours	**14.0**

8th Semester

BIO 420 & 421	3.0
Biology elective	3.0
Global & Cultural Awareness elective	3.0
General electives	5.0
Total Hours	**14.0**

Note: This degree program requires a minimum of 120.0 hours for graduation. Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

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2017-2018 Program Requirements (60 Credit Hours)

REQUIREMENT 1 Complete 6 courses

*BIO 130 - Biology	4.0
BIO 350 - Ecology	3.0
BIO 420 - Evolutionary Biology	2.0
BIO 421 - Evolutionary Biology Laboratory	1.0
MMBIO 240 - Molecular Biology	3.0
PWS 340 - Genetics	3.0

REQUIREMENT 2 Complete 1 course

BIO 220 - Biological Diversity: Animals	4.0
BIO 230 - Biological Diversity: Plants	4.0

REQUIREMENT 3 Complete 8 courses

CHEM 105 - General College Chemistry 1 with Lab (Integrated)	4.0
CHEM 106 - General College Chemistry 2	3.0
CHEM 107 - General College Chemistry Laboratory	1.0
*MATH 112 - Calculus 1	4.0
PHSCS 105 - General Physics 1	3.0
PHSCS 106 - General Physics 2	3.0
PHSCS 107 - General Physics Lab 1	1.0
PHSCS 108 - General Physics Lab 2	1.0

REQUIREMENT 4 Complete 20.0 hours from the following course(s)

ELECTIVES (NOTE: BIO 220 AND BIO 230, IF TAKEN FOR REQUIREMENT 2, DO NOT DOUBLE COUNT HERE):

BIO 220 - Biological Diversity: Animals	4.0
BIO 230 - Biological Diversity: Plants	4.0
BIO 370 - Bioethics	2.0
BIO 380 - Comparative Animal Physiology and Anatomy	4.0
BIO 430 - Plant Classification and Identification	4.0
BIO 441 - Entomology	3.0
BIO 443 - Ichthyology	3.0
BIO 445 - Herpetology	4.0
BIO 446 - (Bio - PWS) Ornithology	3.0
BIO 447 - Mammalogy	3.0
BIO 450 - Conservation Biology	3.0
BIO 452 - Marine Biology	4.0
BIO 455 - Plant Ecology	3.0
BIO 463 - Genetics of Human Disease	3.0
BIO 465 - Bioinformatics	3.0
BIO 470 - History and Philosophy of Biology	3.0
BIO 475 - Plant Developmental Biology	3.0
BIO 494R - Mentored Research	6.0v

You may take up to 2 credit hours.

BIO 510 - Biological Systematics and Curation	3.0
BIO 511 - Lichenology	3.0
BIO 512 - Angiosperm Phylogeny	3.0
BIO 525 - Animal Disease, Biosecurity, and Zoonoses	3.0
BIO 541 - Aquatic Entomology	4.0
BIO 556 - Limnology	3.0
BIO 557 - Stream and Wetland Ecology	4.0
BIO 560 - Population Genetics	4.0
CHEM 285 - Introductory Bio-organic Chemistry	4.0
CHEM 351 - Organic Chemistry 1	3.0
CHEM 352 - Organic Chemistry 2	3.0
CHEM 353 - Organic Chemistry Laboratory--Nonmajors	2.0v
CHEM 481 - Biochemistry	3.0
MMBIO 461 - Advanced Bacterial Physiology	3.0
MMBIO 465 - Virology	3.0
PDBIO 220 - Human Anatomy (with lab)	3.0
PDBIO 305 - Human Physiology	4.0
PDBIO 360 - Cell Biology	3.0
PDBIO 362 - Advanced Physiology	3.0
PDBIO 363 - Advanced Physiology Laboratory	1.0
PWS 440 - Plant Physiology	3.0
STAT 201 - Statistics for Engineers and Scientists	3.0

REQUIREMENT 5

Complete an exit interview.

See catalog for recommended courses for career options in Botany, Preveterinary Medicine, and/or Premedical and Predental.

THE DISCIPLINE:

The biology degree provides students with current, practical knowledge of plants and animals, emphasizing whole organism biology in both ecological and evolutionary contexts. Broad, synthetic training, from molecular to community levels of organization, equips students to address critical issues and contemporary biological problems associated with the long-term preservation of earth's biodiversity. Elective flexibility allows students to emphasize the botanical or zoological fields, or create a combined program of study. Undergraduate research opportunities may include internships, museum collections curation, bioinventory and databasing activities, applied molecular genetics, and field and laboratory research in ecology, conservation biology, and evolutionary biology.

RESEARCH OPPORTUNITIES:

One objective of this program is to provide solid preparation for post graduate studies. For that reason students should take advantage of research opportunities. Department faculty conduct field and laboratory research on diverse topics (including genetics of human diseases, conservation biology, molecular systematics, evolution of life history strategies, biogeographical ecology, bioinventories, aquatic ecology, and bioassessment).
Undergraduates have studied black bears in Utah, mouse systematics in Mexico, stonefly and trout biogeography in the western U.S. , turtles in Amazonia, insects in Borneo, and fish predation in the Provo River. The mentoring option allows up to 2
hours of Bio 494R research credit.

PROFESSIONAL TRAINING, INTERNSHIPS, CO-OP ED, ETC.

Undergraduates can seek paid positions in research laboratories. Cooperative programs with the U.S.
Forest Service and the U.S. Fish and Wildlife Service may be available, as is summer employment with state and federal agencies. This can lead to permanent employment. Completing Bio
430, PWS 330 and 355 can increase summer employment options with government agencies.

CAREERS:

Post-graduate study in a wide-variety of sub disciplines in biology (molecular biology, genetics, ecology, evolutionary biology, conservation biology, etc.), as well as preparation for medical or dental school. Students may also pursue employment as a biologist in state and federal agencies, nongovernment organizations, and research laboratories.

FINANCING:

Students in this major may apply for university, college, and departmental scholarships. A number of research or teaching assistant positions for undergraduate students also exist.

MAP DISCLAIMER

While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

BS in Biology (282022)
2017-2018

DEPARTMENT INFORMATION

Department of Biology
Brigham Young University
4101 Life Sciences Building
Provo, UT 84602
Telephone: (801) 422-2582

ADVISEMENT CENTER INFORMATION

Life Science Student Services
Brigham Young University
2060 Life Sciences Building
Provo, UT 84602
Telephone: (801) 422-3042