BS in Biology (282022) MAP Sheet
Life Sciences, Biology
For students entering the degree program during the 2022-2023 curricular year.

University Core and Graduation Requirements
University Core Requirements:
Requirements#ClassesHoursClasses
Religion Cornerstones
Teachings and Doctrine of The Book of Mormon12.0REL A 275
Jesus Christ and the Everlasting Gospel12.0REL A 250
Foundations of the Restoration12.0REL C 225
The Eternal Family12.0REL C 200
The Individual and Society
American Heritage1-23-6.0from approved list
Global and Cultural Awareness13.0from approved list
Skills
First Year Writing13.0from approved list
Advanced Written and Oral Communications13.0from approved list
Quantitative Reasoning13-4.0from approved list
Languages of Learning (Math or Language)14.0MATH 112*
Arts, Letters, and Sciences
Civilization 113.0from approved list
Civilization 213.0from approved list
Arts13.0from approved list
Letters13.0from approved list
Biological Science14.0BIO 130*
Physical Science27.0CHEM 105* and PHSCS 105*
Social Science13.0from approved list
Core Enrichment: Electives
Religion Electives3-46.0from approved list
Open ElectivesVariableVariablepersonal choice
*THESE CLASSES FILL BOTH
UNIVERSITY CORE AND PROGRAM
REQUIREMENTS (15 hours overlap)

Graduation Requirements:
Minimum residence hours required30.0
Minimum hours needed to graduate120.0
Suggested Sequence of Courses
Freshman Year
1st Semester
First-year Writing or American Heritage3.0
BIO 1304.0
CHEM 1054.0
Quantitative Reasoning3.0
Religion Cornerstone course2.0
Total Hours16.0
2nd Semester
CHEM 106 & 1074.0
BIO 220 or 2304.0
First-year Writing or American Heritage3.0
General Elective3.0
Religion Cornerstone course2.0
Total Hours16.0
Sophomore Year
3rd Semester
BIO 264 or MATH 1124.0
PHSCS 105 & 1074.0
MMBIO 2403.0
Civilization 1 elective3.0
Religion Cornerstone course2.0
Total Hours16.0
4th Semester
PHSCS 106 & 1084.0
Biology elective3.0
Civilization 2 elective3.0
Arts or Letters Elective3.0
Religion Cornerstone course2.0
Total Hours15.0
Junior Year
5th Semester
BIO 3503.0
PWS 3403.0
Biology elective3.0
Arts or Letters elective3.0
Religion elective2.0
Total Hours14.0
6th Semester
Biology electives6.0
Adv. Written & Oral Communication3.0
Religion elective2.0
General electives3.0
Total Hours14.0
Senior Year
7th Semester
Biology electives5.0
General electives5.0
Social Science elective3.0
Religion elective2.0
Total Hours15.0
8th Semester
BIO 4204.0
Biology elective2.0
Global & Cultural Awareness elective3.0
General electives5.0
Total Hours14.0
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.

BS in Biology (282022)2022-2023 Program Requirements (60 Credit Hours)

requirement 1 Complete 5 courses
* BIO 130 - Biology 4.0
BIO 350 - Ecology 3.0
BIO 420 - Evolutionary Biology 4.0
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 2 options

option 3.1 Complete 7 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
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

option 3.2 Complete 1 course
BIO 264 - Statistical Analysis for Biologists 4.0
*MATH 112 - Calculus 1 4.0

requirement 4 Complete 19.0 hours from the following course(s)
Note: BIO 220 and BIO 230, if taken for requirement 2, do not double count here. Note: Students may count either BIO 370 (Bioethics) or PHIL 212R (Intro to Medical Ethics) toward their overall electives but not both. The biology major will only accept a maximum of 2 credit hours between BIO 399R and/or BIO 494R towards its requirements.

BIO 120 - Field Biology 3.0
BIO 194 - Introduction to Mentored Research 0.5
BIO 220 - Biological Diversity: Animals 4.0
BIO 230 - Biological Diversity: Plants 4.0
BIO 280 - Comparative Animal Physiology and Anatomy 4.0
BIO 316 - Advanced Scientific Writing and Communication 3.0
BIO 370 - Bioethics 2.0
BIO 399R - Academic Internship 6.0v
You may take up to 2 credit hours.
BIO 430 - Plant Classification and Identification 4.0
BIO 441 - Entomology 3.0
BIO 443 - Ichthyology 3.0
BIO 445 - Herpetology 4.0
BIO 447 - Mammalogy 3.0
BIO 450 - Capstone in Biodiversity and Conservation 3.0
BIO 452 - Marine Biology 4.0
BIO 455 - Plant Ecology 3.0
BIO 463 - Genetics of Human Disease 3.0
BIO 465 - Capstone in Bioinformatics 3.0
BIO 468 - (Bio-MMBio-PWS) Genomics 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 520 - Symbiosis 3.0
BIO 525 - Animal Disease, Biosecurity, and Zoonoses 3.0
BIO 530 - Advanced Genetic Analysis 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
CELL 220 - Human Anatomy (with lab) 4.0
CELL 305 - Human Physiology 4.0
CELL 360 - Cell Biology 3.0
CELL 362 - Advanced Physiology 3.0
CELL 363 - Advanced Physiology Laboratory 1.0
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 350 - Genetic Counseling 3.0
MMBIO 461 - Advanced Bacterial Physiology 3.0
MMBIO 465 - Virology 3.0
MMBIO 468 - (MMBio-Bio-PWS) Genomics 3.0
PHIL 212R - Introduction to Medical Ethics 3.0
PHIL 212R - Introduction to Applied Ethics 3.0
PWS 440 - Plant Physiological Ecology 3.0
PWS 446 - Ornithology 3.0
PWS 468 - (PWS-Bio-MMBio) Genomics 3.0
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:
BS in Biology (282022) 2022-2023
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.

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