## University Core and Graduation Requirements

### University Core Requirements:

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

*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 249: 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

**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**
- Biology electives: 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.
BS in Biology (282022)
2017-2018 Program Requirements (60 Credit Hours)

REQUIREMENT 1 Complete 6 courses
  *BIO 130 - Biology  4.0
  BIOD 350 - Ecology  3.0
  BIOD 420 - Evolutionary Biology  2.0
  BIOD 421 - Evolutionary Biology Laboratory  1.0
  MMNBIO 240 - Molecular Biology  3.0
  PWS 340 - Genetics  3.0

REQUIREMENT 2 Complete 1 course
  BIOD 220 - Biological Diversity: Animals  4.0
  BIOD 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):
  BIOD 220 - Biological Diversity: Animals  4.0
  BIOD 230 - Biological Diversity: Plants  4.0
  BIOD 370 - Bioethics  2.0
  BIOD 380 - Comparative Animal Physiology and Anatomy  4.0
  BIOD 430 - Plant Classification and Identification  4.0
  BIOD 441 - Entomology  3.0
  BIOD 443 - Ichthyology  3.0
  BIOD 445 - Herpetology  4.0
  BIOD 446 - (Bio - PWS) Ornithology  3.0
  BIOD 447 - Mammalogy  3.0
  BIOD 450 - Conservation Biology  3.0
  BIOD 452 - Marine Biology  4.0
  BIOD 455 - Plant Ecology  3.0
  BIOD 463 - Genetics of Human Disease  3.0
  BIOD 465 - Bioinformatics  3.0
  BIOD 470 - History and Philosophy of Biology  3.0
  BIOD 475 - Plant Developmental Biology  3.0
  BIOD 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 Phyllogeny  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
  MMNBIO 461 - Advanced Bacterial Physiology  3.0
  MMNBIO 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.

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