## 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>Religion Cornerstones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachings &amp; Doctrine, Book of Mormon</td>
<td>1</td>
<td>2.0</td>
<td>Rel A 275</td>
</tr>
<tr>
<td>Jesus Christ &amp; 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>
</tr>
<tr>
<td>The Eternal Family</td>
<td>1</td>
<td>2.0</td>
<td>Rel C 200</td>
</tr>
</tbody>
</table>

### The Individual and Society

<table>
<thead>
<tr>
<th>Citizenship</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>American Heritage</td>
<td>1–2</td>
<td>3–6.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Global &amp; Cultural Awareness</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
</tbody>
</table>

### Skills

<table>
<thead>
<tr>
<th>Effective Communication</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First-Year Writing</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Adv Written &amp; Oral Communication</td>
<td>1</td>
<td>3.0</td>
<td>Engl 316 recommended</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>0–1</td>
<td>0–3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Languages of Learning (Math or Language)</td>
<td>1–4</td>
<td>3–20.0</td>
<td>Math 112 recommended</td>
</tr>
</tbody>
</table>

### Arts, Letters, and Sciences

<table>
<thead>
<tr>
<th>Civilization 1 and 2</th>
<th>2</th>
<th>6.0</th>
<th>from approved list</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
<tr>
<td>Letters</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
</tbody>
</table>

### Scientific Principles & Reasoning

<table>
<thead>
<tr>
<th>Biological Science</th>
<th>2</th>
<th>5.0</th>
<th>MMBio 240* and PDBio 120*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Science</td>
<td>2</td>
<td>7.0</td>
<td>Chem 105*, Phscs 105* or 121*</td>
</tr>
<tr>
<td>Social Science</td>
<td>1</td>
<td>3.0</td>
<td>from approved list</td>
</tr>
</tbody>
</table>

### Core Enrichment: Electives

| Religion Electives                  | 3–4      | 6.0   | from approved list |
| Open Electives                      | Variable | Variable | personal choice |

### Core Electives

<table>
<thead>
<tr>
<th>Requirement</th>
<th>#Classes</th>
<th>Hours</th>
<th>Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religion Electives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Electives</td>
<td>Variable</td>
<td>Variable</td>
<td>personal choice</td>
</tr>
</tbody>
</table>

### GRADUATION REQUIREMENTS:

- Minimum residence hours required: 30.0
- Minimum hours needed to graduate: 120.0

---

## PROGRAM REQUIREMENTS (71.5 total hours)

### Complete the following life sciences core courses:

- Bio 420: Evolutionary Biology 2.0
- MMBio 240*: Molecular Biology 3.0
- MMBio 241: Molecular & Cellular Biology Lab 1.0
- PDBio 120*: Science of Biology 2.0
- PDBio 360: Cell Biology 3.0
- PWS 340: Genetics 3.0

### Complete the following chemistry courses:

- Chem 105*: General College Chemistry 4.0
- Chem 106: General College Chemistry 3.0
- Chem 107: General College Chemistry Lab 1.0
- Chem 351: Organic Chemistry 3.0
- Chem 352: Organic Chemistry 3.0
- Chem 353: Organic Chemistry Lab-Nonmajor 2.0V
- Chem 468: Biophysical Chemistry 3.0
- Chem 481: Biochemistry 3.0

### Complete the following math and physics courses:

- Math 112: Calculus 1 4.0
- Math 113: Calculus 2 4.0
- Phscs 121: Intro to Newtonian Mechanics 3.0
- Phscs 123: Intro to Waves, Optics, & Thermodynamics 3.0
- Phscs 140: Electronics Lab 1.0
- Phscs 220: Intro to Electricity & Magnetism 3.0

### Complete the following major core courses:

- PDBio 362: Advanced Physiology 3.0
- PDBio 363: Advanced Physiology Laboratory 1.0
- PDBio 455R: PDBio Seminar 0.5
- PDBio 568: Cellular Electrophysiology & Bioph 3.0

### B. Electives

- Chem 223: Quantitative and Qualitative Analysis 4.0
- Chem 227: Principles of Chemical Analysis 4.0
- Chem 482: Mechanisms of Molecular Biology 3.0
- Chem 489: Structural Biochemistry 3.0
- Chem 581: Advanced Biochemical Methodology 1 3.0
- Chem 583: Advanced Biochemical Methodology 2 3.0
- Chem 584: Biochemistry Laboratory/Proteins 3.0
- Chem 586: Biochemistry Laboratory/Nucleic Acids 3.0
- E&E 101: Elements of Electrical Engineering 3.0
- Math 302: Mathematics for Engineering 1 4.0
- Math 303: Mathematics for Engineering 2 4.0
- MMBio 430: Advanced Cell Biology 3.0
- MMBio 441: Advanced Molecular Biology 3.0
- MMBio 442: Advanced Molecular Biology Lab 2.0
- Neuro 480: Advanced Neuroscience 3.0
- PDBio 365: Pathophysiology 4.0
- PDBio 450R: Topics in PDBio 3.0V
- PDBio 498: Advanced Senior Research Project 3.0
- PDBio 561: Physiology of Drug Mechanisms 3.0
- PDBio 565: Endocrinology 3.0
- Phscs 145: Experimental Methods in Physics 1.0
- Phscs 230: Computational Physics Lab 1 1.0
- Phscs 240: Design Fabrication, and Use of Scientific Apparatus 2.0
- Stat 121: Principles of Statistics 3.0

---

*FOR GE QUESTIONS CONTACT THE ADVISEMENT CENTER ❖ FOR PROGRAM QUESTIONS SEE YOUR FACULTY ADVISOR

*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (12 hours overlap)
**Suggested Sequence of Courses:**

**FRESHMAN YEAR**

1st Semester
- **PDBio 120** 2.0
- Chem 105 (FWSpSu) 4.0
- **1st Year Writing** 3.0
  - Or A Htg 100 (3.0)
- Religion Cornerstone course 2.0
- Math 112 4.0
  - (Lang. of Learning or Quant. Reason.)

| Total Hours | 15.0 |

2nd Semester
- **A Htg 100** 3.0
  - or **1st Year Writing** (3.0)
- Math 113 4.0
- Chem 106 (FWSpSu) 3.0
- Chem 107 (FWSpSu) 1.0
- Religion Cornerstone course 2.0
- Arts or Letters elective 3.0

| Total Hours | 16.0 |

**SOPHOMORE YEAR**

3rd Semester
- **MMBio 240** (Biological Science) 3.0
- **MMBio 241** 1.0
- Civilization 1 elective 3.0
- **Chem 351** (FWSp) 3.0
- **Phscls 121** (Physical Science) 3.0
- Religion Cornerstone course 2.0

| Total Hours | 15.0 |

4th Semester
- **PWS 340** 3.0
- Chem 352 (FWSpSu) 3.0
- Chem 353 (FWSpSu) 1.0
- Civilization 2 elective 3.0
- Phscs 123 3.0
- Religion Cornerstone course 2.0
- Mentored Lab Experience 1–2.0

| Total Hours | 16–17.0 |

**JUNIOR YEAR**

5th Semester
- **PDBio 360** 3.0
- Chem 481 3.0
- **PDBio 494R** 2.0
- Phscls 140 (W, Sp) 1.0
- Phscls 220 3.0
- Religion elective 2.0
- Mentored Lab Experience 1–2.0

| Total Hours | 15–16.0 |

6th Semester
- **PDBio 362** 3.0
- PDBio 363 1.0
- Adv. Writing (Engl 316 recommended) 3.0
- General electives 3.0

| Total Hours | 15.0 |

**SENIOR YEAR**

7th Semester
- **PDBio 455R** 0.5
- **PDBio 495R or 498** 2.5–3.0
- **PDBio 568** (F) 3.0
- **Arts or Letters elective** 3.0
- Religion elective (FWSpSu) 2.0
- Social Science 3.0

| Total Hours | 14–14.5 |

8th Semester
- **Biol 420** 2.0
- **Social Science** 3.0
- **Major electives** 6.0
- **General electives** 3.0

| Total Hours | 14.0 |

**THE DISCIPLINE:**

Biophysics is the use of physics, chemistry, mathematics, and biology to investigate the physical basis of life. Upper-division courses require synthesis and integration of information from many areas of science to allow understanding of such processes as protein folding, function of ion channels, and how the nervous system works.

**CAREER OPPORTUNITIES:**

A major in biophysics prepares students to pursue advanced degrees in the biological sciences. This major also provides outstanding preparation for students seeking admittance into professional programs. Graduates of this program will also have the academic and laboratory skills necessary for direct employment in medical, biotechnological, and pharmaceutical industries. Biophysicists whose primary interest is research often work in government agencies, such as the National Institutes of Health, NASA, and the Departments of Agriculture or Defense. Many new positions have been created in industry as a result of recent developments in molecular biophysics and molecular biology. Regardless of the setting, biophysicists generally work in groups with people with different backgrounds, interests, and abilities who collaborate to solve common problems.

**RESEARCH AREAS:**

Students majoring in biophysics have the opportunity to become involved in laboratory research with the faculty. Funding for this research comes from such sources as the National Institutes of Health, and National Science Foundation. Research topics such as the following are being investigated:

- Molecular modeling and regulation of voltage-gated ion channels.
- Biophysics of membrane structure and function.
- Molecular and functional characterization of ligand-gated ion channels in the central nervous system.
- Molecular mechanisms of neurotransmitter release.

**MENTORED EXPERIENCE:**

This involves working closely with a faculty member doing research in biophysics (PDBio 494R and 495R).

**FINANCING:**

Various private, federal, and university sources of scholarships, fellowships, and grants are available. Advanced undergraduates may be hired to teach labs or help sections for PDBio courses.

**HONORARY SOCIETIES & CLUBS:**

Membership in the Premedical or Predental Clubs, as well as service on the Student Council of the College of Life Sciences, promotes fellowship among students and develops professionalism.

---

**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.