## Biology (B.S.) Cellular Concentration

<table>
<thead>
<tr>
<th>Major requirements</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>[BIOL 160] Molecular and Cellular Biology</td>
<td>4</td>
</tr>
<tr>
<td>[BIOL 161] Animal Form and Function</td>
<td>3</td>
</tr>
<tr>
<td>[BIOL 162] Plant Form and Function</td>
<td>3</td>
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<tr>
<td>[BIOL 260] Genetics and Development</td>
<td>3</td>
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<tr>
<td>[BIOL 262] Ecology and Adaptation**</td>
<td>4</td>
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<tr>
<td>[BIOL 495] Capstone: Natural Sciences</td>
<td>3</td>
</tr>
<tr>
<td>[CHEM 105] General Chemistry I</td>
<td>4</td>
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<tr>
<td>[CHEM 106] General Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>[CHEM 309] Organic Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>[CHEM 310] Organic Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>[MATH 108] Intuitive Calculus with Applications (3) or [MATH 111] Calculus I (4)</td>
<td>3-4</td>
</tr>
<tr>
<td>[PHIL 101] Problems in Philosophy (3) or [PHIL 102] History of Philosophy (3)</td>
<td>3</td>
</tr>
<tr>
<td>[PHYS 201] Introductory Physics I</td>
<td>4</td>
</tr>
<tr>
<td>[STAT 269] Introductory Statistics</td>
<td>3</td>
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</tbody>
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### Cellular Concentration (17 credits)*

**Two Cellular and Molecular courses***:  
- [BIOL 413] Molecular Biology (4)  
- One of the following: [BIOL 412] Cell Biology (4) OR [BIOL 417] Molecular Genetics (4)

**One Integrative course***:  
- [BIOL 313] Developmental Biology (3)  
- [BIOL 385] Physiology (4)  
- [BIOL 418] Immunology (4)

**One Biodiversity and Adaptation course***:  
- [BIOL 321] Mycology (4)  
- [BIOL 325] Medicinal Botany (3)  
- [BIOL 332] Plant Taxonomy (4)  
- [BIOL 334] Plant Ecology (4)  
- [BIOL 335] Plant Propagation (3)  
- [BIOL 356] Ornithology (4)  
- [BIOL 368] Herpetology (4)  
- [BIOL 362] Aquatic Zoology (4)

**One to four cellular BIOL elective credits***:  
- [ASI 360] Molecular Tools for the Field Biologist (4)  
- [BIOL 313] Developmental Biology (3)  
- [BIOL 381] Microbiology (4)  
- [BIOL 382] Microbiology for Health Professions (4)  
- [BIOL 385] Physiology (4)  
- [BIOL 387] Neuroscience (3)

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### Experiential Learning requirement
- 0

### QuEST requirements
- **First Year Seminar** 3  
- **Oral Communication** 3  
- **Created and Called for Community (W)** 3  
- **Mathematical Sciences (MATH 108 or 111) met/major**  
- **Laboratory Science (BIOL 160, 161, 162 or CHEM 105) met/major**  
- **Science, Technology & the World** waived  
- **Two of the following (6 credits total): Social Science, European History or United States History** 6  
- **Literature** 3  
- **Philosophy and Religion (PHIL 101 or 102) met/major**  
- **Arts** 3  
- **First Semester of Language** 3  
- **Second Semester of Language** 3  
- **Third Semester of Language or Cross Cultural** 3  
- **Non-Western Studies** 2 or 3  
- **Bible** 3  
- **Christian Beliefs** 3  
- **Wellness course** 1  
- **Ethics, World Views or Pluralism** 3  

#### QuEST requirements

- **Major requirements (inclusive of concentration)** 66-70  
- **Concentration requirements** 17-20  
- **Free electives** 15-10  

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**Total credits** 123

*Students must have a minimum of 17 credits in their concentration. They must also have three 300/400 level lab courses OR two 300/400 level lab courses and one BIOL course with extensive field experience (BIOL 218, 269, 290, or 297) within the major. Lab courses must be BIOL courses or CHEM 410.

**Fulfills Writing Enriched course requirement for major.