# Bachelor of Science in Biology: Concentration in Physiology - Quantitative Reasoning Category I/II and ENG 114

120 Total Units Required  
Minimum Number of Units in the Major: 67

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 115</td>
<td>General Chemistry I: Essential Concepts of Chemistry (Major Lower-Division Core)</td>
<td>5</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Writing the First Year: Finding Your Voice (A2) 1</td>
<td>3</td>
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<tr>
<td>MATH 226</td>
<td>Calculus I (Major Lower-Division Core, B4) 2</td>
<td>4</td>
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<tr>
<td><strong>GE Area A</strong> 3</td>
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<tr>
<td><strong>Second Semester</strong></td>
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<tr>
<td>BIOL 230</td>
<td>Introductory Biology I (Major Lower-Division Core)</td>
<td>5</td>
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<tr>
<td>CHEM 215 &amp; CHEM 216</td>
<td>General Chemistry II: Quantitative Applications of Chemistry Concepts and General Chemistry II Laboratory: Quantitative Applications of Chemistry Concepts (Major Lower-Division Core)</td>
<td>5</td>
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<tr>
<td><strong>GE Area A</strong> 3</td>
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<td></td>
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<tr>
<td><strong>GE Area E</strong> 3</td>
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<tr>
<td><strong>Third Semester</strong></td>
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<tr>
<td>BIOL 240</td>
<td>Introductory Biology II (Major Lower-Division Core)</td>
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<tr>
<td>CHEM 130</td>
<td>General Organic Chemistry (Major Lower-Division Core)</td>
<td>3</td>
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<tr>
<td><strong>Select One (Major Lower-Division Core):</strong> 3-4</td>
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<tr>
<td>BIOL 358</td>
<td>Forensic Genetics: Math Matters</td>
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<tr>
<td>BIOL 458</td>
<td>Biometry</td>
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<thead>
<tr>
<th>Course</th>
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<th>Units</th>
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<tbody>
<tr>
<td><strong>Fourth Semester</strong></td>
<td></td>
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<tr>
<td>CHEM 233</td>
<td>Organic Chemistry I (Hidden Prerequisite for CHEM 335 and CHEM 340)</td>
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<tr>
<td><strong>Select One Set of Courses (Major Lower-Division Core):</strong> 5</td>
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<tr>
<td>PHYS 121 &amp; PHYS 122</td>
<td>General Physics II and General Physics II Laboratory</td>
<td>4</td>
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<tr>
<td>PHYS 230 &amp; PHYS 232</td>
<td>General Physics with Calculus II and General Physics with Calculus II Laboratory</td>
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<tr>
<td><strong>GE Area C - Take Two</strong></td>
<td>6</td>
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<tr>
<td><strong>GE Area D</strong> 3</td>
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<tr>
<td><strong>Fifth Semester</strong></td>
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<tr>
<td>BIOL 355</td>
<td>Genetics (Major Upper-Division Core)</td>
<td>3</td>
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<tr>
<td>BIOL 612 or BIOL 630</td>
<td>Human Physiology (Major Physiology Core) or Animal Physiology</td>
<td>3</td>
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<tr>
<td>CHEM 335</td>
<td>Organic Chemistry II (Hidden Prerequisite for CHEM 340 and CHEM 349)</td>
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<tr>
<td><strong>GE Area D - Take Two</strong></td>
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<tr>
<td><strong>Sixth Semester</strong></td>
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<tr>
<td>BIOL 350</td>
<td>Cell Biology (Major Upper-Division Core)</td>
<td>3</td>
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<tr>
<td>CHEM 340 or CHEM 349</td>
<td>Biochemistry I (Major Upper-Division Core) or General Biochemistry</td>
<td>3</td>
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<tr>
<td><strong>Physiology Core Courses (6 Units Total):</strong> 6</td>
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<tr>
<td><strong>GE Area C</strong> 3</td>
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<tr>
<td><strong>GE Area UD-D: Upper-Division Social Sciences (Consider SF State Studies Course):</strong> 3</td>
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Units: 15-16
### Seventh Semester

<table>
<thead>
<tr>
<th>Select One (Physiology Lab):</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIOL 526 Plant Molecular Physiology Laboratory</td>
<td>2-4</td>
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<tr>
<td>BIOL 613GW Human Physiology Laboratory - GWAR</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 631GW Animal Physiology Laboratory - GWAR</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Physiology Core Courses (6 Units Total)</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>BIOL 525 Plant Physiology (3 units)</td>
<td></td>
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<tr>
<td>BIOL 612 Human Physiology (3 units)</td>
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<tr>
<td>BIOL 616 Cardiorespiratory Physiology (3 units)</td>
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<tr>
<td>BIOL 617 Environmental Physiology (3 units)</td>
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<tr>
<td>BIOL 618 Biology of Aging (3 units)</td>
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<tr>
<td>BIOL 620 Endocrinology (3 units)</td>
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<tr>
<td>BIOL 621 Reproductive Physiology (3 units)</td>
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<tr>
<td>BIOL 622 Hormones and Behavior (3 units)</td>
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<tr>
<td>BIOL 630 Animal Physiology (3 units)</td>
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<tr>
<td>BIOL 640 Cellular Neurosciences (3 units)</td>
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<tr>
<td>BIOL 642 Neural Systems Physiology (3 units)</td>
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<thead>
<tr>
<th>Major Area UD-C: Upper-Division Arts and/or Humanities (Consider SF State Studies Course)</th>
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</table>

| Units | 15-17 |

### Eighth Semester

<table>
<thead>
<tr>
<th>Major Upper-Division Electives (10-11 Units Total) – Take Two</th>
<th>4-7</th>
</tr>
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<tbody>
<tr>
<td>SF State Studies or University Elective – Take Three</td>
<td>9</td>
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</table>

<table>
<thead>
<tr>
<th>Units</th>
<th>13-16</th>
</tr>
</thead>
</table>

| Total Units | 120-126 |

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1. ENG 114 can only be taken if you complete Directed Self-Placement (DSP) and select ENG 114; if you choose ENG 104/ENG 105 through DSP you will satisfy A2 upon successful completion of ENG 105 in the second semester; multilingual students may be advised into alternative English courses.

2. Depending on courses completed through Early Start, students in Pathway/Category III or IV may be required to enroll in a support course to complement their Quantitative Reasoning/B4 requirement. There are multiple course options for this pathway. Before enrolling in a B4 course, students should verify their MATH Pathway/Category in their Student Center. Information regarding the courses that correspond with your MATH Pathway/Category can be found on the Developmental Studies Office Website.

3. To avoid taking additional units, it is recommended that you meet SF State Studies requirements (AERM, GP, ES, SJ) within your GE.

4. Students must take MATH 227 if taking PHYS 220/PHYS 222.

5. PHYS 111/PHYS 112 are prerequisites for PHYS 121/PHYS 122. PHYS 220/PHYS 222 are prerequisites for PHYS 230/PHYS 232.

6. **Physiology Core Courses (9 units)**
   - BIOL 525 Plant Physiology (3 units)
   - BIOL 612 Human Physiology (3 units)
   - BIOL 616 Cardiorespiratory Physiology (3 units)
   - BIOL 617 Environmental Physiology (3 units)
   - BIOL 618 Biology of Aging (3 units)
   - BIOL 620 Endocrinology (3 units)
   - BIOL 621 Reproductive Physiology (3 units)
   - BIOL 622 Hormones and Behavior (3 units)
   - BIOL 630 Animal Physiology (3 units)
   - BIOL 640 Cellular Neurosciences (3 units)
   - BIOL 642 Neural Systems Physiology (3 units)

7. Students must complete at least one GWAR course in order to graduate.