BIOLOGICAL SCIENCE GRADES 8-12 MAJOR, B.S.
Science & Health Department; School of Science, Health & Mathematics

Asbury is well known for the quality of its education programs, and science teachers are in demand. The Science and Health Department offers majors leading to grades 8-12 certification in either Biology or Chemistry.

To graduate must complete all major requirements, foundational requirements, and additional electives needed for 124 hour minimum degree requirement. This program may require more than 124 credits for a degree due to specific requirements.

**MAJOR REQUIREMENTS (90)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 201</td>
<td>3</td>
<td>General Biology I</td>
</tr>
<tr>
<td>BIO 203</td>
<td>1</td>
<td>General Biology Lab I</td>
</tr>
<tr>
<td>BIO 202</td>
<td>3</td>
<td>General Biology II</td>
</tr>
<tr>
<td>BIO 204</td>
<td>1</td>
<td>General Biology Lab II</td>
</tr>
<tr>
<td>BIO 322</td>
<td>3</td>
<td>Genetics</td>
</tr>
<tr>
<td>BIO 341</td>
<td>2</td>
<td>Ethical Issues</td>
</tr>
<tr>
<td>BIO 399</td>
<td>1</td>
<td>Intro to Bio Research</td>
</tr>
<tr>
<td>BIO 400</td>
<td>2</td>
<td>Senior Research</td>
</tr>
<tr>
<td>CHE 121</td>
<td>3</td>
<td>Gen College Chemistry I</td>
</tr>
<tr>
<td>CHE 122</td>
<td>3</td>
<td>Gen College Chemistry II</td>
</tr>
<tr>
<td>CHE 123</td>
<td>1</td>
<td>Gen College Chemistry Lab I</td>
</tr>
<tr>
<td>CHE 124</td>
<td>1</td>
<td>Gen College Chemistry Lab II</td>
</tr>
<tr>
<td>ESC 150</td>
<td>3</td>
<td>Earth Science</td>
</tr>
<tr>
<td>ESC 151</td>
<td>1</td>
<td>Earth Science Lab</td>
</tr>
<tr>
<td>PHY 201</td>
<td>4</td>
<td>Intro Physics I</td>
</tr>
</tbody>
</table>

Choose one Environmental Biology:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 217+219</td>
<td>4</td>
<td>Environmental Sci</td>
</tr>
<tr>
<td>BIO 221+223</td>
<td>4</td>
<td>Ecology</td>
</tr>
</tbody>
</table>

Choose one Plant Biology:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 227+229</td>
<td>4</td>
<td>Aquatic/Wetland Biology</td>
</tr>
<tr>
<td>BIO 272+274</td>
<td>4</td>
<td>Principles Plant Biology</td>
</tr>
</tbody>
</table>

Choose one Human Biology:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 211+213</td>
<td>4</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIO 331+333</td>
<td>4</td>
<td>Human Anatomy</td>
</tr>
</tbody>
</table>

Choose 2 additional Biology electives not used above:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 211+213</td>
<td>3</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIO 262</td>
<td>3</td>
<td>Human Physiology (3)</td>
</tr>
<tr>
<td>BIO 280</td>
<td>3</td>
<td>Scientific/Medical Terminology (3)</td>
</tr>
<tr>
<td>BIO 331+333</td>
<td>3</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>BIO 352+354</td>
<td>3</td>
<td>Physiology</td>
</tr>
<tr>
<td>BIO 372+374</td>
<td>3</td>
<td>Cell &amp; Molecular Biology</td>
</tr>
</tbody>
</table>

Complete Education requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 200</td>
<td>2</td>
<td>Intro to Education</td>
</tr>
<tr>
<td>ED 201</td>
<td>1</td>
<td>Struct Inquiry Clinical</td>
</tr>
<tr>
<td>ED 220</td>
<td>2</td>
<td>Tech for Education</td>
</tr>
<tr>
<td>ED 230</td>
<td>2</td>
<td>Human Growth/Development</td>
</tr>
<tr>
<td>ED 301</td>
<td>1</td>
<td>Guided Inquiry Clinical</td>
</tr>
<tr>
<td>ED 320</td>
<td>3</td>
<td>Exceptional Learner</td>
</tr>
<tr>
<td>ED 385</td>
<td>3</td>
<td>Read/Wrt Across Curriculum</td>
</tr>
<tr>
<td>ED 401</td>
<td>1</td>
<td>Open Inquiry Clinical</td>
</tr>
<tr>
<td>ED 405</td>
<td>3</td>
<td>Learning/Perform &amp; Assess</td>
</tr>
<tr>
<td>ED 410</td>
<td>2</td>
<td>Classroom Management</td>
</tr>
<tr>
<td>ED 420</td>
<td>3</td>
<td>Secondary/P-12 Methods</td>
</tr>
<tr>
<td>ED 428</td>
<td>2</td>
<td>Intervention for Differentiation</td>
</tr>
<tr>
<td>ED 499</td>
<td>12</td>
<td>Student Teaching</td>
</tr>
</tbody>
</table>

Satisfy math proficiency for major:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 111</td>
<td>0</td>
<td>Met by ACT/SAT score of 24/580</td>
</tr>
</tbody>
</table>

OR

If MATH ACT/SAT score is below 24/580-

Complete:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 111</td>
<td>3</td>
<td>College Algebra** (transfer only)</td>
</tr>
<tr>
<td>MAT 112</td>
<td>3</td>
<td>Precalculus** (transfer only)</td>
</tr>
<tr>
<td>MAT 181</td>
<td>1</td>
<td>Calculus I</td>
</tr>
</tbody>
</table>

**Please note that College Algebra and Precalculus do NOT satisfy the Foundational MAT course requirement.

PLUS FOUNDATIONAL REQUIREMENTS (43)

(4 hours Science satisfied by required major courses; Foreign Language not required for B.S. BIOE majors. Degree becomes B.A. with completion of Foreign Language.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 211+213</td>
<td>3</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIO 262</td>
<td>3</td>
<td>Human Physiology (3)</td>
</tr>
<tr>
<td>BIO 280</td>
<td>3</td>
<td>Scientific/Medical Terminology (3)</td>
</tr>
<tr>
<td>BIO 331+333</td>
<td>3</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>BIO 352+354</td>
<td>3</td>
<td>Physiology</td>
</tr>
<tr>
<td>BIO 372+374</td>
<td>3</td>
<td>Cell &amp; Molecular Biology</td>
</tr>
</tbody>
</table>

Choose electives if needed for the 124 hour degree requirement