# Bachelor of Arts, Major in Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts, Major in Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Curriculum <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/">Link</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component Area I (Communication)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Component Area II (Mathematics)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Component Area III (Life and Physical Science) (Courses for Science Majors)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Component Area IV (Language, Philosophy, and Culture)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Component Area V (Creative Arts)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Component Area VI (U.S. History)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Component Area VII (Political Science/Government)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Component Area VIII (Social and Behavioral Sciences)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Component Area IX (Component Area Option)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Degree Specific Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Biostatistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 3379</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistical Methods in Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3379</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistical Methods in Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1411</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Chemistry I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CHEM 1412</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Chemistry II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH 1410</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary Functions</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WOLC 1411</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginning Foreign Language I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WOLC 1412</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginning Foreign Language II (same field)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WOLC 2311</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate Foreign Language</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WOLC 2312</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermed Foreign Language II (same field)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Major: Foundation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1406</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Biology I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIOL 1407</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Biology II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIOL 2110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being a Professional Biologist</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BIOL 3450</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introductory Genetics</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIOL 4110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate Seminar</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BIOL 4361</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evolutionary Biology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Major: Prescribed Electives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL Advanced Electives (3000-4000 level courses)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td><strong>Major: Concentration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39-47</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Minor: Not Required</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5,6</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>120-128</td>
<td></td>
</tr>
</tbody>
</table>

1. Satisfies 3 hours of the Core Curriculum requirement for Component Area II (Mathematics) as well as 1 hour of the Core Curriculum requirement for Component Area IX (Component Area Option).
2. Satisfies the Core Curriculum requirement for Component Area III (Life and Physical Sciences)
3. WOLC 2311 or WOLC 2312 satisfies the Core Curriculum requirement for Component Area IV (Language, Philosophy, and Culture).
4. See, below Concentration course listings.
5. A minor is not required for this degree program; however, a student has the option to add a minor, but to do so additional semester credits hours may be needed above the degree program’s stated total semester credit hours.
6. All minors can be paired with this degree program.

## Notes

- Students must earn a 2.0 minimum overall GPA in all coursework.
- Students must meet a 2.0 minimum overall major GPA in all major coursework.
Students must earn a 2.0 minimum SHSU GPA in all coursework.

Students must meet a 2.0 minimum SHSU major GPA in all major coursework.

This total reflects MATH 1420 (http://catalog.shsu.edu/archives/2022-2023/search/?P=MATH%201420) satisfying Component Area II and one hour of Component Area IX, and CHEM 1411 (http://catalog.shsu.edu/archives/2022-2023/search/?P=CHEM%201411) and CHEM 1412 (http://catalog.shsu.edu/archives/2022-2023/search/?P=CHEM%201412) satisfying Component Area III.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3409</td>
<td>General Ecology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 3470</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Select from the following:</td>
<td></td>
</tr>
<tr>
<td>BIOL 3364</td>
<td>Plant Taxonomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3410</td>
<td>Human Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3420</td>
<td>Comparative Vertebrate Anatomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3430</td>
<td>Plant Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3460</td>
<td>Pathophysiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3461</td>
<td>Wildlife Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3480</td>
<td>Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3490</td>
<td>Histology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3492</td>
<td>Plant Morphology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4080</td>
<td>Field and Experiential Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4095</td>
<td>Undergrad Rsrch Tpcs-Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4096</td>
<td>Spcl Topics In Undergrad Bio</td>
<td></td>
</tr>
<tr>
<td>BIOL 4306</td>
<td>Philosophy Of Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4320</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4330</td>
<td>Aquatic Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4350</td>
<td>Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4360</td>
<td>Genetic Anlys of Human Disease</td>
<td></td>
</tr>
<tr>
<td>BIOL 4362</td>
<td>Paleobiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4363</td>
<td>Genomics and Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4370</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>Biostatistics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4380</td>
<td>Medical Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4381</td>
<td>Advanced Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4481</td>
<td>Physiological Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4394</td>
<td>Biological Sciences Internship</td>
<td></td>
</tr>
<tr>
<td>BIOL 4410</td>
<td>General Entomology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4430</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td>BIOL 4460</td>
<td>Parasitology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4470</td>
<td>Animal Behavior</td>
<td></td>
</tr>
<tr>
<td>BIOL 4471</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4490</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4493</td>
<td>Endocrinology</td>
<td></td>
</tr>
<tr>
<td>CHEM 2325</td>
<td>Organic Chemistry II: Lecture</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 42-43

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3470</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td>Hours</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td>4</td>
</tr>
<tr>
<td>or BIOL 4490</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>CHEM 2325</td>
<td>Organic Chemistry II: Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3339</td>
<td>Biochemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3438</td>
<td>Biochemistry I</td>
<td>4</td>
</tr>
</tbody>
</table>

Select six from the following (3 must be 4-credit courses):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3460</td>
<td>Pathophysiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3480</td>
<td>Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3490</td>
<td>Histology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4095</td>
<td>Undergrad Rsrch Tpcs-Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4096</td>
<td>Spcl Topics In Undergrad Bio</td>
<td></td>
</tr>
<tr>
<td>BIOL 4350</td>
<td>Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4360</td>
<td>Genetic Anlys of Human Disease</td>
<td></td>
</tr>
<tr>
<td>BIOL 4363</td>
<td>Genomics and Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4380</td>
<td>Medical Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4381</td>
<td>Advanced Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4394</td>
<td>Biological Sciences Internship</td>
<td></td>
</tr>
<tr>
<td>BIOL 4460</td>
<td>Parasitology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>or BIOL 4490</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4481</td>
<td>Physiological Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4493</td>
<td>Endocrinology</td>
<td></td>
</tr>
</tbody>
</table>

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3409</td>
<td>General Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3364</td>
<td>Plant Taxonomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3410</td>
<td>Human Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3420</td>
<td>Comparative Vertebrate Anatomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3430</td>
<td>Plant Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3461</td>
<td>Wildlife Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3492</td>
<td>Plant Morphology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4080</td>
<td>Field and Experiential Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4306</td>
<td>Philosophy Of Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4320</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4330</td>
<td>Aquatic Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4362</td>
<td>Paleobiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4370</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>Biostatistics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4410</td>
<td>General Entomology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4430</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td>BIOL 4470</td>
<td>Animal Behavior</td>
<td></td>
</tr>
<tr>
<td>BIOL 4471</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 45-47
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3492</td>
<td>Plant Morphology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4080</td>
<td>Field and Experiential Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4095</td>
<td>Undergrad Rsrch Tpcs-Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4096</td>
<td>Spcl Topics In Undergrad Bio</td>
<td></td>
</tr>
<tr>
<td>BIOL 4306</td>
<td>Philosophy Of Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4320</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4330</td>
<td>Aquatic Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4362</td>
<td>Paleobiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4370</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4381</td>
<td>Advanced Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4394</td>
<td>Biological Sciences Internship</td>
<td></td>
</tr>
<tr>
<td>BIOL 4410</td>
<td>General Entomology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4430</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td>BIOL 4470</td>
<td>Animal Behavior</td>
<td></td>
</tr>
<tr>
<td>BIOL 4471</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4460</td>
<td>Parasitology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4481</td>
<td>Physiological Ecology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one from the following:</td>
<td>3-4</td>
</tr>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3460</td>
<td>Pathophysiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3470</td>
<td>General Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3480</td>
<td>Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3490</td>
<td>Histology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4350</td>
<td>Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4360</td>
<td>Genetic Anlys of Human Disease</td>
<td></td>
</tr>
<tr>
<td>BIOL 4363</td>
<td>Genomics and Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>Biostatistics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4380</td>
<td>Medical Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4490</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4493</td>
<td>Endocrinology</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 39-40

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2441</td>
<td>Forensic Biology Concepts</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 3470</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 4380</td>
<td>Medical Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4381</td>
<td>Advanced Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 4410</td>
<td>General Entomology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 2325</td>
<td>Organic Chemistry II: Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3438</td>
<td>Biochemistry I</td>
<td>4</td>
</tr>
<tr>
<td>FORS 3366</td>
<td>Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FORS 4317</td>
<td>Applied Statistics for Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FORS 4320</td>
<td>Fundamentals of Forensic Bio</td>
<td>3</td>
</tr>
<tr>
<td>FORS 4380</td>
<td>Ethics &amp; Prof Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3410</td>
<td>Human Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4095</td>
<td>Undergrad Rsrch Tpcs-Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4096</td>
<td>Spcl Topics In Undergrad Bio</td>
<td></td>
</tr>
<tr>
<td>BIOL 4380</td>
<td>Medical Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4481</td>
<td>Physiological Ecology</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>BIOL 4490</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>CHEM 3339</td>
<td>Biochemistry II</td>
<td></td>
</tr>
<tr>
<td>BIOL 3364</td>
<td>Plant Taxonomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3420</td>
<td>Comparative Vertebrate Anatomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3430</td>
<td>Plant Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3460</td>
<td>Pathophysiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3461</td>
<td>Wildlife Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3480</td>
<td>Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3490</td>
<td>Histology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3492</td>
<td>Plant Morphology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4080</td>
<td>Field and Experiential Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4306</td>
<td>Philosophy Of Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4320</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4330</td>
<td>Aquatic Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4350</td>
<td>Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4360</td>
<td>Genetic Anlys of Human Disease</td>
<td></td>
</tr>
<tr>
<td>BIOL 4362</td>
<td>Paleobiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4363</td>
<td>Genomics and Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4370</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>Biostatistics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4394</td>
<td>Biological Sciences Internship</td>
<td></td>
</tr>
<tr>
<td>BIOL 4430</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td>BIOL 4460</td>
<td>Parasitology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4470</td>
<td>Animal Behavior</td>
<td></td>
</tr>
<tr>
<td>BIOL 4471</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4493</td>
<td>Endocrinology</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 40-43

**First Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1406 or 1407</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>CHEM 1411</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ENGL 1301</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 1410</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 15 Hours

**Second Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3409</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4374, MATH 3379, or STAT 3379</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>HIST 1301</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>WOLC 1411</td>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>

Total: 18 Hours
### Bachelor of Arts, Major in Biology

#### Third Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration</td>
<td>6</td>
<td>8-13 Component Area VIII (<a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii</a>)</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4361</td>
<td>3</td>
<td>BIOL 4110</td>
<td>1</td>
</tr>
<tr>
<td>POLS 2306</td>
<td>3</td>
<td>Concentration</td>
<td>4-5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WOLC 2311</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&amp; WOLC 2312</td>
<td></td>
</tr>
<tr>
<td><strong>14-19</strong></td>
<td></td>
<td><strong>14-15</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Fourth Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3470</td>
<td>4</td>
<td>Concentration</td>
<td>15-16</td>
</tr>
<tr>
<td></td>
<td>12-13</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>16-17</strong></td>
<td></td>
<td><strong>15-16</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Total Hours: 120-128**

1. Satisfies the Core Curriculum requirement for Component Area III (Life and Physical Sciences).
2. Satisfies Core Curriculum requirement for Component Area I (Communications).
3. Satisfies 3 hours of the Core Curriculum requirement for Component Area II (Mathematics) and 1 hour of the Core Curriculum requirement for Component Area IX (Component Area Option).
5. Satisfies Core Curriculum requirement for Component Area VII (Political Science/Government).
6. See, below Concentration course listing.
7. WOLC 2311 or WOLC 2312 satisfies the Core Curriculum requirement for Component Area IV (Language, Philosophy, and Culture).

### Notes

Students must earn a 2.0 minimum overall GPA in all coursework.

Students must meet a 2.0 minimum overall major GPA in all major coursework.

Students must earn a 2.0 minimum SHSU GPA in all coursework.

Students must meet a 2.0 minimum SHSU major GPA in all major coursework.

This total reflects MATH 1420 satisfying Component Area II and one hour of Component Area IX, and CHEM 1411 and CHEM 1412 satisfying Component Area III.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major: Concentration (Integrative Biology)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 3409</td>
<td>General Ecology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 3470</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>Select from the following:</td>
<td></td>
<td>34-35</td>
</tr>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3364</td>
<td>Plant Taxonomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3410</td>
<td>Human Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3420</td>
<td>Comparative Vertebrate Anatomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3430</td>
<td>Plant Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3460</td>
<td>Pathophysiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3461</td>
<td>Wildlife Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3480</td>
<td>Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3490</td>
<td>Histology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3492</td>
<td>Plant Morphology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4080</td>
<td>Field and Experiential Biology</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>BIOL 4095</td>
<td>Undergrad Rsrch Tpcs-Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4096</td>
<td>Spcl Topics In Undergrad Bio</td>
<td></td>
</tr>
<tr>
<td>BIOL 4320</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4330</td>
<td>Aquatic Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4360</td>
<td>Genetic Anlys of Human Disease</td>
<td></td>
</tr>
<tr>
<td>BIOL 4362</td>
<td>Paleobiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4363</td>
<td>Genomics and Bioinformatics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4370</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>Biostatistics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4380</td>
<td>Medical Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4394</td>
<td>Biological Sciences Internship</td>
<td></td>
</tr>
<tr>
<td>BIOL 4410</td>
<td>General Entomology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4430</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td>BIOL 4460</td>
<td>Parasitology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4470</td>
<td>Animal Behavior</td>
<td></td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4490</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4493</td>
<td>Endocrinology</td>
<td></td>
</tr>
<tr>
<td>CHEM 2325</td>
<td>Organic Chemistry II: Lecture</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 42-43

**Major: Concentration (Cell and Molecular)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3470</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td>4</td>
</tr>
<tr>
<td>or BIOL 4490</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>CHEM 2325</td>
<td>Organic Chemistry II: Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3339</td>
<td>Biochemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3438</td>
<td>Biochemistry I</td>
<td>4</td>
</tr>
</tbody>
</table>

Select 6 from the following (3 must be 4-credit hour courses):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3409</td>
<td>General Ecology</td>
</tr>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
</tr>
<tr>
<td>BIOL 3364</td>
<td>Plant Taxonomy</td>
</tr>
<tr>
<td>BIOL 3410</td>
<td>Human Biology</td>
</tr>
<tr>
<td>BIOL 3420</td>
<td>Comparative Vertebrate Anatomy</td>
</tr>
<tr>
<td>BIOL 3430</td>
<td>Plant Physiology</td>
</tr>
<tr>
<td>BIOL 3461</td>
<td>Wildlife Biology</td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>Biostatistics</td>
</tr>
</tbody>
</table>

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3409</td>
<td>General Ecology</td>
</tr>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
</tr>
<tr>
<td>BIOL 3364</td>
<td>Plant Taxonomy</td>
</tr>
<tr>
<td>BIOL 3410</td>
<td>Human Biology</td>
</tr>
<tr>
<td>BIOL 3420</td>
<td>Comparative Vertebrate Anatomy</td>
</tr>
<tr>
<td>BIOL 3430</td>
<td>Plant Physiology</td>
</tr>
<tr>
<td>BIOL 3461</td>
<td>Wildlife Biology</td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>Biostatistics</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>BIOL 3492</td>
<td>Plant Morphology</td>
</tr>
<tr>
<td>BIOL 4080</td>
<td>Field and Experiential Biology</td>
</tr>
<tr>
<td>BIOL 4306</td>
<td>Philosophy Of Biology</td>
</tr>
<tr>
<td>BIOL 4320</td>
<td>Environmental Toxicology</td>
</tr>
<tr>
<td>BIOL 4330</td>
<td>Aquatic Biology</td>
</tr>
<tr>
<td>BIOL 4362</td>
<td>Paleobiology</td>
</tr>
<tr>
<td>BIOL 4370</td>
<td>Microbial Ecology</td>
</tr>
<tr>
<td>BIOL 4410</td>
<td>General Entomology</td>
</tr>
<tr>
<td>BIOL 4430</td>
<td>Vertebrate Natural History</td>
</tr>
<tr>
<td>BIOL 4470</td>
<td>Animal Behavior</td>
</tr>
<tr>
<td>BIOL 4471</td>
<td>Invertebrate Zoology</td>
</tr>
</tbody>
</table>

Total Hours: 45-47

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3409</td>
<td>General Ecology</td>
<td>4</td>
</tr>
</tbody>
</table>

Select eight from the following (5 must be 4-credit hour courses):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3364</td>
<td>Plant Taxonomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3410</td>
<td>Human Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3420</td>
<td>Comparative Vertebrate Anatomy</td>
<td></td>
</tr>
<tr>
<td>BIOL 3430</td>
<td>Plant Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3461</td>
<td>Wildlife Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3492</td>
<td>Plant Morphology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4080</td>
<td>Field and Experiential Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4095</td>
<td>Undergrad Rsrch Tpcs-Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4096</td>
<td>Spcl Topics In Undergrad Bio</td>
<td></td>
</tr>
<tr>
<td>BIOL 4320</td>
<td>Environmental Toxicology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4330</td>
<td>Aquatic Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4362</td>
<td>Paleobiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4370</td>
<td>Microbial Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4394</td>
<td>Biological Sciences Internship</td>
<td></td>
</tr>
<tr>
<td>BIOL 4410</td>
<td>General Entomology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4430</td>
<td>Vertebrate Natural History</td>
<td></td>
</tr>
<tr>
<td>BIOL 4470</td>
<td>Animal Behavior</td>
<td></td>
</tr>
<tr>
<td>BIOL 4460</td>
<td>Parasitology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4471</td>
<td>Invertebrate Zoology</td>
<td></td>
</tr>
</tbody>
</table>

Select two from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3440</td>
<td>General Physiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3460</td>
<td>Pathophysiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3470</td>
<td>General Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3480</td>
<td>Developmental Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3490</td>
<td>Histology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4350</td>
<td>Immunology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4360</td>
<td>Genetic Anlys of Human Disease</td>
<td></td>
</tr>
<tr>
<td>BIOL 4374</td>
<td>Biostatistics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4380</td>
<td>Medical Microbiology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4480</td>
<td>Molecular Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 4490</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 4493</td>
<td>Endocrinology</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 42-44
Bachelor of Arts, Major in Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2441</td>
<td>Forensic Biology Concepts</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 3470</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 4380</td>
<td>Medical Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4410</td>
<td>General Entomology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 2325</td>
<td>Organic Chemistry II: Lecture</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3438</td>
<td>Biochemistry I</td>
<td>4</td>
</tr>
<tr>
<td>FORS 3366</td>
<td>Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FORS 4317</td>
<td>Applied Statistics for Forensic Science</td>
<td>3</td>
</tr>
<tr>
<td>FORS 4320</td>
<td>Fundamentals of Forensic Bio</td>
<td>3</td>
</tr>
<tr>
<td>FORS 4380</td>
<td>Ethics &amp; Prof Practice</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one from the following:

- BIOL 3410 | Human Biology                        | 3-4    |
- BIOL 4095 | Undergrad Rsrch Tpcs-Biology        |       |
- BIOL 4096 | Spcl Topics In Undergrad Bio        |       |
- BIOL 4480 | Molecular Genetics                  |       |
- BIOL 4490 | Cell Biology                       |       |
- CHEM 3339 | Biochemistry II                     |       |

Select two from the following:

- BIOL 3364 | Plant Taxonomy                     | 6-8    |
- BIOL 3420 | Comparative Vertebrate Anatomy     |       |
- BIOL 3430 | Plant Physiology                   |       |
- BIOL 3440 | General Physiology                 |       |
- BIOL 3460 | Pathophysiology                    |       |
- BIOL 3461 | Wildlife Biology                   |       |
- BIOL 3480 | Developmental Biology              |       |
- BIOL 3490 | Histology                         |       |
- BIOL 3492 | Plant Morphology                   |       |
- BIOL 4080 | Field and Experiential Biology     |       |
- BIOL 4306 | Philosophy Of Biology              |       |
- BIOL 4320 | Environmental Toxicology           |       |
- BIOL 4330 | Aquatic Biology                    |       |
- BIOL 4350 | Immunology                         |       |
- BIOL 4360 | Genetic Anlys of Human Disease     |       |
- BIOL 4362 | Paleobiology                       |       |
- BIOL 4363 | Genomics and Bioinformatics        |       |
- BIOL 4370 | Microbial Ecology                  |       |
- BIOL 4374 | Biostatistics                      |       |
- BIOL 4394 | Biological Sciences Internship     |       |
- BIOL 4430 | Vertebrate Natural History         |       |
- BIOL 4460 | Parasitology                       |       |
- BIOL 4470 | Animal Behavior                    |       |
- BIOL 4471 | Invertebrate Zoology               |       |
- BIOL 4493 | Endocrinology                      |       |

Total Hours: 40-43

The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state’s 60x30TX plan and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The BA in Biology is designed to provide graduates with the following marketable skills:
• Master the depth of knowledge required for a degree in biological sciences.
• Demonstrate critical thinking.
• Communicate effectively.
• Work collaboratively.