BIOLOGICAL SCIENCES (B.A.)

The Bachelor of Arts degree is for students who desire a broad liberal arts education with specialization in biology. It is not recommended for students anticipating admission into graduate science programs or medical school. Students contemplating a major program in biological sciences should consult with a departmental undergraduate advisor no later than the beginning of the sophomore year.

Admission Requirements
Admission requirements for this program are satisfied by the general requirements for undergraduate admission (http://bulletins.wayne.edu/undergraduate/general-information/admission/) to the University.

Program Requirements
Candidates must complete 120 credits in course work including satisfaction of the University General Education Requirements (http://bulletins.wayne.edu/undergraduate/general-information/general-education/) and the College of Liberal Arts and Sciences Group Requirements (http://bulletins.wayne.edu/undergraduate/college-liberal-arts-sciences/bachelors-degree-requirements/), as well as the departmental major requirements cited below. All course work must be completed in accordance with the regulations of the University (http://bulletins.wayne.edu/undergraduate/general-information/academic-regulations/) and the College (http://bulletins.wayne.edu/undergraduate/college-liberal-arts-sciences/academic-regulations/) governing undergraduate scholarship and degrees. Students must receive a grade of C minus or better in all biology courses. A grade point average of 2.0 (C) in both biology and general required courses is required for undergraduate scholarship and degrees. Students must receive a grade of C minus or better in all biology courses. A grade point average of 2.0 (C) in both biology and general required courses is required for graduation.

Major Requirements
A minimum of 40 credits of BIO starting at BIO 1500 are required of the major as defined below. Courses through the 6000 level may be elected providing the proper prerequisites have been successfully completed.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIO 1500</td>
<td>Basic Life Diversity</td>
<td>4</td>
</tr>
<tr>
<td>BIO 1501</td>
<td>and Basic Life Diversity Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIO 1510</td>
<td>Basic Life Mechanisms</td>
<td>4</td>
</tr>
<tr>
<td>BIO 1511</td>
<td>and Basic Life Mechanisms Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIO 2600</td>
<td>Introduction to Cell Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 2700</td>
<td>Evolution: Basic Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>BIO 3070</td>
<td>Genetics</td>
<td>4-5</td>
</tr>
</tbody>
</table>

Students must complete additional coursework in BIO courses to reach 40 credits in BIO. Electives in BIO must be at the 3000 level or above. One course must include an upper level lab. One course must include Scientific Communication. Undergraduate research may be applied up to a max of 6 credits including the research seminar, UG research credits and honors thesis.¹

Courses that include upper level labs. BIO 3070 (satisfies the lab requirement only when elected for 5 credits), BIO 3250 & BIO 3251, BIO 3800, BIO 4120, BIO 4130, BIO 4350, BIO 4630, BIO 5040, BIO 5100, BIO 5440, BIO 5610.

Courses that include Scientific Communication. BIO 4110, BIO 4120, BIO 4130, BIO 4370, BIO 5150, BIO 5240, BIO 5280, BIO 5610/ BIO 5620.

¹ Courses required to complete major requirements listed above cannot also be used as BIO elective credit.

2 If elected for honors credit, BIO 3070 is 5 credits and includes a lab.

Cognate Requirements

<table>
<thead>
<tr>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>CHM 1100</td>
<td>General Chemistry I and General Chemistry I Laboratory</td>
<td>5</td>
</tr>
<tr>
<td>CHM 1140</td>
<td>General Chemistry II and General Chemistry II Laboratory</td>
<td>5</td>
</tr>
<tr>
<td>CHM 1240</td>
<td>Organic Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>MAT 1800</td>
<td>Elementary Functions</td>
<td>4</td>
</tr>
<tr>
<td>STA 1020</td>
<td>Elementary Statistics</td>
<td>3</td>
</tr>
<tr>
<td>or STA 2210</td>
<td>Probability and Statistics</td>
<td></td>
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</tbody>
</table>

¹ Students must start in the appropriate math course based upon placement exam or valid SAT/ACT scores. Students may attempt to place into a higher MAT course by taking the Placement Examination of the Department of Mathematics upon entry into the university.

Biological Sciences Honors (B.A. and B.S. Programs)
The Department participates in the honors program and works with individual students to develop a curriculum that satisfies honors degree requirements. Students interested in an honors degree should contact the departmental honors advisor.

Program Requirements: To achieve honors designation with the Bachelor of Arts or Bachelor of Science in Biological Sciences, students are required to complete all University and major requirements (see above) including fourteen honors credits in Biology and an honors seminar (HON 4200-HON 4280).

The fourteen credits in Biological Sciences are comprised of:

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<td>Basic Life Diversity</td>
<td>4</td>
</tr>
<tr>
<td>BIO 1510</td>
<td>Basic Life Mechanisms</td>
<td>4</td>
</tr>
<tr>
<td>BIO 2200</td>
<td>Introductory Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 2600</td>
<td>Introduction to Cell Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 3070</td>
<td>Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BIO 3100</td>
<td>Cellular Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>BIO 3200</td>
<td>Human Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 3500</td>
<td>Ecology and the Environment</td>
<td>4</td>
</tr>
<tr>
<td>BIO 4200</td>
<td>Evolution</td>
<td>4</td>
</tr>
<tr>
<td>BIO 6890</td>
<td>Introduction to Research Practice - Honors</td>
<td>4</td>
</tr>
<tr>
<td>BIO 6893</td>
<td>Honors Undergraduate Research in Biological Sciences (Student needs 3 credits of honors research (BIO 6891, 6892, 6893, 6894). Credits can be spread across multiple terms but must total a minimum of 3 cr. Honors UG research.)</td>
<td>3</td>
</tr>
<tr>
<td>BIO 6999</td>
<td>Honors Undergraduate Research Thesis</td>
<td>2</td>
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</table>

Total Credits 14

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<tbody>
<tr>
<td>HON 4200</td>
<td>Seminar in Philosophy and Letters</td>
<td>3</td>
</tr>
<tr>
<td>HON 4230</td>
<td>Seminar in Physical Science</td>
<td>3</td>
</tr>
<tr>
<td>HON 4250</td>
<td>Seminar: Global Perspectives on Historical Studies</td>
<td>3</td>
</tr>
<tr>
<td>HON 4260</td>
<td>Seminar in Foreign Culture</td>
<td>3</td>
</tr>
</tbody>
</table>
To be awarded a BIO honors degree, students must accumulate seventeen honors credits as defined above. Students must also maintain a cumulative g.p.a. of at least a 3.3. Students completing department honors must also maintain a 3.3 g.p.a in BIO coursework.

1 BIO courses without an honors section may be used if the professor is willing to do an honors option. Paperwork to do an honors option on a course is available from the Honors College.