The Bachelor of Arts in Biological Sciences is recommended only for those students who plan careers in business or secondary education careers related to the Biological Sciences. A minimum of 32 S.H. in Biological Sciences is required for the BA degree.

All biological sciences majors must take the courses as listed for the BA degree in the curriculum sheet.

The BA degree in biological sciences requires a minimum of 32 semester hours from within the Department of Biological Sciences. (Courses at the 1000 level are not applicable to a Bachelor of Arts degree.)

All biological sciences majors must take the following courses for the BA degree:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1550</td>
<td>Writing 1</td>
<td>3-4</td>
</tr>
<tr>
<td>or ENGL 1549</td>
<td>Writing 1 with Support</td>
<td></td>
</tr>
<tr>
<td>ENGL 1551</td>
<td>Writing 2</td>
<td>3</td>
</tr>
<tr>
<td>CMST 1545</td>
<td>Communication Foundations</td>
<td>3</td>
</tr>
</tbody>
</table>

Mathematics Requirement (met through MATH in major)

Arts and Humanities (6 s.h.)

Natural Sciences (2 courses, 1 with lab) (6-7 s.h.)

Social Science (6 s.h.)

Social and Personal Awareness (6 s.h.)

Foreign Language Requirement

FNLG 1550: Elementary Foreign Language (or FNLG 1505)

FNLG 2600: Intermediate Foreign Language (or FNLG 1506)

Major Requirements

BIOL 2601 General Biology 1: Molecules and Cells | 4 |

BIOL 2602 General Biology 2: Organisms and Ecology | 4 |

CHEM 1515 General Chemistry 1 & 1515L General Chemistry 1 Laboratory | 4 |

CHEM 1516 General Chemistry 2 & 1516L General Chemistry 2 Laboratory | 4 |

Select one course from two of the following groups: | 7-8 |

**Group A**

- BIOL 3702 Microbiology
- BIOL 3702L Microbiology Laboratory
- BIOL 3711 Cell Biology: Fine Structure

**Group B**

- BIOL 3725 Mammalogy
- BIOL 3730 Human Physiology

**Group C**

- BIOL 3740 Plant Diversity
- BIOL 3741 Animal Diversity

Select 16 semester hours of courses in the Department of Biological Sciences at the 3000-5000 level. At least two of these courses must have a laboratory component.

Capstone Course

- BIOL 4861 Senior Biology Capstone Experience | 2 |

Electives

Select 32 s.h. of Biological Science credit. | 32 |

Strongly recommended:

- CHEM 3719 & 3719L Organic Chemistry 1 and Organic Chemistry 1 Laboratory
- CHEM 3720 & 3720L Organic Chemistry 2 and Organic Chemistry 2 Laboratory
- PHYS 1501 & 1501L Fundamentals of Physics 1 and Fundamentals of Physics Laboratory 1
- PHYS 1502 & 1502L Fundamentals of Physics 2 and Fundamentals of Physics Laboratory 2

Additional electives to meet 120 | 11-14 |

Total Semester Hours | 120-126 |

The general biology courses are prerequisites for genetics and all core and upper-division courses.

Students seeking admission to medically related professional schools should complete the BS program.

The mathematics, physics and chemistry courses may not be taken under the credit/no credit option.

Recommended core curriculum meeting science requirements of medically related and other professional schools.

**Year 1**

**Fall**

- YSU 1500 Success Seminar | 1 |
- BIOL 2601 General Biology 1: Molecules and Cells | 4 |
- CHEM 1515R Recitation for General Chemistry 1 (opt) | 1 |
- CHEM 1515 General Chemistry 1 & 1515L General Chemistry 1 Laboratory | 4 |
- ENGL 1550 Writing 1 (electives may be substituted if excused based on results of Placement Test) or Writing 1 with Support | 3-4 |
- GER AL/SS/SPA | 3 |

**Semester Hours** | 16-17 |

**Spring**

- BIOL 2602 General Biology 2: Organisms and Ecology | 4 |
- CHEM 1515R Recitation for General Chemistry 2 (opt) | 1 |
- CHEM 1515 General Chemistry 2 & 1516L General Chemistry 2 Laboratory | 4 |
- ENGL 1551 Writing 2 (electives may be substituted if excused based on results of Placement Test) or Writing 1 with Support | 3 |
- GER elective (COMM 1545 recommended) | 3 |

**Semester Hours** | 15 |

**Year 2**

**Fall**

Biology Core Course

Select one of the following: | 3-5 |

- BIOL 3730 Human Physiology
- BIOL 3711 Cell Biology: Fine Structure
- BIOL 3740 Plant Diversity
- MATH 1570 Applied Calculus 1 or MATH 1571 or Calculus 1 | 4 |
- GER Elective (AL) | 3 |

General Electives | 3 |
Bachelor of Arts in Biological Sciences

Select an additional 3 s.h.  

| Semester Hours | 16-18 |

**Spring**

Biology Core Course

Select one of the following:  

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BIOL 3730</td>
<td>Human Physiology</td>
</tr>
<tr>
<td>BIOL 3721</td>
<td>Genetics</td>
</tr>
<tr>
<td>BIOL 3741</td>
<td>Animal Diversity</td>
</tr>
</tbody>
</table>

Introductory Foreign Language  

GER Elective (SI)  

General Electives  

| Semester Hours | 16-18 |

**Year 3**

**Fall**

BIOL 3700-5800 course w/ lab  

Intermediate Foreign Language  

GER electives (PS), (SI)  

General Elective  

| Semester Hours | 17 |

**Spring**

BIOL 3700-5800 course w/ lab  

BIOL 3700-5800 course  

GER electives (AL), (PS)  

General Elective  

| Semester Hours | 16-17 |

**Year 4**

**Fall**

BIOL 3700 course  

General Electives  

| Semester Hours | 12-13 |

**Spring**

BIOL 3700-5800 course  

BIOL 4861 Senior Biology Capstone Experience  

General Electives  

| Semester Hours | 15 |

| Total Semester Hours | 123-130 |

**Learning Outcomes**

The department's learning outcomes for the BA in biology are as follows:

- Students will be fluent in the terminology of the biological sciences.
- Students will be competitive for entry into the workplace.
- Students will be familiar with the scientific process and the process of hypothesis testing.
- Students should be able to reason critically, both individually and in collaboration with other students.