# Curriculum for Liberal Education Requirements

## I. Writing and Discourse (6 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 1105 First-Year Writing</td>
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<tr>
<td>ENGL 1106 First-Year Writing</td>
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## II. Ideas, Cultural Traditions and Values (6 credits)

<table>
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## III. Society and Human Behavior (6 credits)

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## IV. Scientific Reasoning and Discovery (8 credits): Completed within Biological Sciences Major Required Courses

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>BIOL 1105 Principles of Biology I</td>
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<tr>
<td>BIOL 1115 Principles of Biology Lab</td>
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<tr>
<td>BIOL 1106 Principles of Biology II</td>
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<tr>
<td>BIOL 1116 Principles of Biology Lab II</td>
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## V. Quantitative and Symbolic Reasoning: Completed within Biological Sciences Major Required Courses

<table>
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<tbody>
<tr>
<td>MATH 1025 Elementary Calculus</td>
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<tr>
<td>MATH 1026 Elementary Calculus</td>
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## VI. Creativity and Aesthetic Experience (3 credits)

## VII. Critical Issues in a Global Context (3 Credits)

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# Degree / Major Requirements (37 credits)

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<tbody>
<tr>
<td>BIOL 1004 Biology Orientation Seminar</td>
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<td>BIOL 2004 Genetics</td>
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</tr>
<tr>
<td>BIOL 2704 Evolutionary Biology</td>
<td>(3)</td>
</tr>
<tr>
<td>CHEM 1035 General Chemistry I</td>
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<td>CHEM 1045 General Chemistry Lab</td>
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<td>CHEM 2535 Organic Chemistry</td>
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<td>CHEM 2545 Organic Chemistry Lab</td>
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<td>PHYS 2205 General Physics</td>
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<td>PHYS 2215 General Physics Lab</td>
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<tr>
<td>BIOL 2134 Cell Function Differentiation</td>
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<tr>
<td>BIOL 2804 Ecology</td>
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<tr>
<td>CHEM 1036 General Chemistry II</td>
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<td>CHEM 1046 General Chemistry Lab II</td>
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<tr>
<td>CHEM 2536 Organic Chemistry II</td>
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<td>CHEM 2546 Organic Chemistry Lab II</td>
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<tr>
<td>PHYS 2206 General Physics II</td>
<td>(3)</td>
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<tr>
<td>PHYS 2216 General Physics Lab II</td>
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# Science Education Option Requirements (20 credits)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BIOL 2304 Plant Biology</td>
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<tr>
<td>BIOL 2504 Zoology</td>
<td>(3)</td>
</tr>
<tr>
<td>BIOL 2604 Microbiology</td>
<td>(3)</td>
</tr>
<tr>
<td>BIOL 2614 Microbiology Lab</td>
<td>(2)</td>
</tr>
<tr>
<td>BMSP 2135 Human Anatomy and Physiology</td>
<td>(3)</td>
</tr>
<tr>
<td>GEOS 1014 Earth and Life Through Time</td>
<td>(3)</td>
</tr>
<tr>
<td>STAT 3615 Biological Statistics</td>
<td>(3)</td>
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</table>
### Science Education Option Electives (at least 8 credits)

3. Complete at least 8 credits of Biological Sciences electives, including two lab courses:

#### 3a. Select at least two linked or inclusive laboratory courses from this list

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 3014</td>
<td>Insect Biology</td>
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<tr>
<td>BIOL 3024</td>
<td>Insect Biology Lab</td>
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<tr>
<td>BIOL 3254</td>
<td>Med and Vet Entomology Lab</td>
<td>3</td>
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<tr>
<td>BIOL 3264</td>
<td>Med &amp; Vet Entomology Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 4624</td>
<td>Microbial Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4644</td>
<td>Microbial Genetics &amp; Physiol Lab</td>
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</tr>
<tr>
<td>BIOL 3104</td>
<td>Cell &amp; Molecular Biology Laboratory</td>
<td>1</td>
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<tr>
<td>BIOL 3114</td>
<td>Field &amp; Laboratory Ecology</td>
<td>1</td>
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<tr>
<td>BIOL 3204</td>
<td>Plant Taxonomy</td>
<td>3</td>
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<tr>
<td>BIOL 3454</td>
<td>Introductory Parasitology</td>
<td>4</td>
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<tr>
<td>BIOL 4004</td>
<td>Freshwater Ecology</td>
<td>4</td>
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<td>BIOL 4164</td>
<td>Environmental Microbiology</td>
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<td>BIOL 4314</td>
<td>Plant Ecology</td>
<td>4</td>
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<tr>
<td>BIOL 4674</td>
<td>Pathogenic Bacteriology</td>
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<td>BIOL 4724</td>
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<tr>
<td>BIOL 4704</td>
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<td>BIOL 4714</td>
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<td>BIOL 4404</td>
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<td>BIOL 4454</td>
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<td>BIOL 4474</td>
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<tr>
<td>BIOL 4484</td>
<td>Freshwater Biomonitoring</td>
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<td>BIOL 4554</td>
<td>Neurochemical Regulation</td>
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<td>BIOL 4564</td>
<td>Infectious Disease Ecology</td>
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<tr>
<td>BIOL 4574</td>
<td>Social Behav Birds &amp; Mammals</td>
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<td>BIOL 4594</td>
<td>Food Microbiology</td>
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<td>Microbial Physiology</td>
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<td>Microbial Genetics &amp; Physiology Lab</td>
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<td>BIOL 4664</td>
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<td>Bioinformatics Methods</td>
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<td>Cytogenetics</td>
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<td>BIOL 4874</td>
<td>Cancer Biology</td>
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<tr>
<td>BIOL 4884</td>
<td>Cell Biology</td>
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<td>BIOL 4974</td>
<td>Indep Study (var. credit)</td>
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<tr>
<td>BIOL 4994</td>
<td>Undergrad Rsrch (var. credit)</td>
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#### 3b. Approved Biological Sciences Electives

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 2204</td>
<td>Plants and Civilization</td>
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<tr>
<td>BIOL 2404</td>
<td>Biotech in Global Society</td>
<td>3</td>
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<tr>
<td>BIOL 3014</td>
<td>Insect Biology</td>
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<tr>
<td>BIOL 3024</td>
<td>Insect Biology Lab</td>
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<tr>
<td>BIOL 3104</td>
<td>Cell &amp; Molecular Biology Laboratory</td>
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<td>BIOL 3114</td>
<td>Field &amp; Lab Ecology</td>
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<tr>
<td>BIOL 3134</td>
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<td>Med and Vet Entomology Lab</td>
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<tr>
<td>BIOL 3404</td>
<td>Introductory Animal Physiology</td>
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<td>BIOL 3774</td>
<td>Molecular Biology</td>
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**Degree / Major Requirements**
- 37 Credits
- 20 Credits
- 8 credits

**Science Education Option Requirements**
- 38 Credits

**Total Curriculum for Liberal Education Requirements:**
- 38 Credits
- 17 Credits
- 120 Credits

**Total Credits Required for Graduation**
- 120 Credits
1 Students must earn a grade of "C" or better in BIOL 1105, 1106, 1115, 1116, CHEM 1035, CHEM 1036, or the equivalent. Only two attempts, including course withdrawals with grade of "W", are allowed for each course.

2 A combined maximum of 4 credits of BIOL 4974 and/or BIOL 4994 can be used toward Biological Sciences elective credit.

3 BIOL 1004 is required but will not count as major elective credit or be used to calculate in-major GPA.

All BIOL courses except 1004, any course taken to fulfill Biological Sciences elective credit, and all required CHEM, MATH, PHYS and STAT courses will be used to calculate in-major GPA.

Some courses listed on this checksheet may have prerequisites, please consult the University Course Catalog, or check with your advisor.

Students must have an in-major and overall GPA of 2.0 to graduate.

**Acceptable Substitutions**

BIOL 1105: BIOL 1005 General Biology
BIOL 1106: BIOL 1006 General Biology
BIOL 1115: BIOL 1015 General Biology Lab OR BIOL 1125 Biol Principles Lab
BIOL 1116: BIOL 1016 General Biology Lab OR BIOL 1126 Biol Principles Lab
BIOL 1105, 1115: BIOL 1205H Honors Biology (4)
BIOL 1106, 1116: BIOL 1206H Honors Biology (4)
BIOL 2134: BIOL 2104 Cell & Molecular Biology
BIOL 2604: BIOL 2604H Honors General Microbiology
BIOL 2704: BIOL 2704H Honors Evolutionary Biology
BIOL 2804: BIOL 2804H Honors Ecology
BIOL 4994: BIOL 2994 Undergraduate Research
CHEM 1035-1036: CHEM 1055 -1056 General Chemistry for Majors
CHEM 1045-1046: CHEM 1065-1066 General Chemistry Lab for Majors
CHEM 2535-2536: CHEM 2565-2566 Principles of Organic Chemistry
CHEM 2545-2546: CHEM 2555-2556 Organic Synthesis and Techniques Lab
PHYS 2205, 2215: PHYS 2305 Foundations of Physics I
PHYS 2206, 2216: PHYS 2306 Foundations of Physics I
MATH 1025: MATH 1016 Elem Calculus w/ Trig OR MATH 1205 Calculus OR MATH 1225 Calculus of a Single Variable OR MATH 1525 Elem Calculus w/Matrices
MATH 1026: MATH 2015 Elem Calculus w/ Trig OR MATH 1206 Calculus OR MATH 1226 Calculus of a Single Variable OR MATH 1526 Elem Calculus w/Matrices

**Cross-listed Courses on this Checksheet**

BIOL/HORT 2304: Plant Biology
ALS/BIOL 2404: Biotechnology in a Global Society
ENT/BIOL 3014: Insect Biology
ENT/BIOL 3024: Insect Biology Laboratory
ENT/BIOL 3254: Medical and Veterinary Entomology
ENT/BIOL 3264: Medical and Veterinary Entomology Laboratory
FST/BIOL 3604: Food Microbiology
GEOG/BIOL 4044: Biogeography
CSES/ENSC/BIOL 4164: Environmental Microbiology
ENT/BIOL 4354: Aquatic Entomology
ENT/FIW/BIOL 4484: Freshwater Biomonitoring
ALS/BIOL 4554: Neurochemical Regulation
ALS/BIOL 4574: Soc Behavior Birds & Mamm
Satisfactory Progress Toward Degree

1. Students must earn a grade of "C" or better in BIOL 1105, 1106, 1115, 1116, CHEM 1035, CHEM 1036 or equivalent examination, courses taken P/F, and courses completed with a grade of "W"). Only two attempts are allowed for each course.

2. Students must achieve an overall GPA of 2.0 and in-major GPA of 2.2 upon attempting 45 credit hours (including transfer

3. All BIOL courses (except 1004 and 1044), any course taken to fulfill Biological Sciences elective credit, and all required CHEM, MATH, PHYS and STAT courses will be used to calculate in-major GPA.

4. These courses must be completed by the time the student has attempted 72 hours.
   BIOL 1105, 1106, 1115, 1116 or Equivalent
   CHEM 1035, 1036, 1045, 1046 or Equivalent
   CHEM 2535, 2536, 2545, 2546 or Equivalent
   MATH 1025, 1026 or Equivalent

College of Science Foreign Language Requirement:

Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six semester hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement do not count toward the hours required for graduation. Please consult the Undergraduate Catalog for details.