

**College of Science**  
Department of Biological Sciences  
For Students Graduating in Calendar Year 2021  
Bachelor of Science in Biological Sciences  
Major: Biological Sciences  
Option: Science Education

**Curriculum for Liberal Education Requirements (38 credits)**

**I. Writing and Discourse (6 credits)**

ENGL 1105 First-Year Writing (3) \_\_\_\_\_ ENGL 1106 First-Year Writing (3) \_\_\_\_\_

**II. Ideas, Cultural Traditions and Values (6 credits)**

\_\_\_\_\_ (3) \_\_\_\_\_ (3) \_\_\_\_\_

**III. Society and Human Behavior (6 credits)**

\_\_\_\_\_ (3) \_\_\_\_\_ (3) \_\_\_\_\_

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

BIOL 1105 Principles of Biology <sup>1*</sup>	(3) _____	BIOL 1106 Principles of Biology <sup>1*</sup>	(3) _____
BIOL 1115 Principles of Biology Lab <sup>1*</sup>	(1) _____	BIOL 1116 Principles of Biology Lab <sup>1*</sup>	(1) _____

**V. Quantitative and Symbolic Reasoning (6 credits): Completed within Biological Sciences Major Required Courses**

MATH 1025 Elementary Calculus*	(3) _____	MATH 1026 Elementary Calculus*	(3) _____
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**VI. Creativity and Aesthetic Experience (3 credits)**

\_\_\_\_\_ (3) \_\_\_\_\_

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

\_\_\_\_\_ (3) \_\_\_\_\_

**Degree Core Requirements (21 credits)**

BIOL 2004 Genetics#	(3) _____	BIOL 2134 Cell Function Differentiation##	(3) _____
BIOL 2704 Evolutionary Biology#	(3) _____	BIOL 2804 Ecology#	(3) _____
CHEM 1035 General Chemistry <sup>1*</sup>	(3) _____	CHEM 1036 General Chemistry <sup>1*</sup>	(3) _____
STAT 3615 Biological Statistics#	(3) _____		

**Biological Sciences Major Requirements (19 credits)**

**1. Complete the following courses:**

BIOL 1004 Biology Orientation Seminar <sup>2</sup>	(1) _____		
CHEM 1045 General Chemistry Lab*	(1) _____	CHEM 1046 General Chemistry Lab*	(1) _____
CHEM 2535 Organic Chemistry##	(3) _____	CHEM 2536 Organic Chemistry##	(3) _____
CHEM 2545 Organic Chemistry Lab#*	(1) _____	CHEM 2546 Organic Chemistry Lab##	(1) _____
PHYS 2205 General Physics##	(3) _____	PHYS 2206 General Physics##	(3) _____
PHYS 2215 General Physics Lab#*	(1) _____	PHYS 2216 General Physics Lab#*	(1) _____

**Science Education Option Requirements (17 credits)**

BIOL	2304	Plant Biology#	(3)	_____
BIOL	2504	General Zoology#	(3)	_____
BIOL	2604	Microbiology#	(3)	_____
BIOL	2614	Microbiology Lab#	(2)	_____
BMSP	2135	Human Anatomy and Physiology#	(3)	_____
GEOS	1014	Evolution of Earth-Life System	(3)	_____

**Science Education Option Electives (at least 8 credits)**

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

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

BIOL	3014	Insect Biology#	(2)	_____	BIOL	4674	Pathogenic Bacteriology#	(3)	_____
	+					+			
	3024	Insect Biology Laboratory#	(2)	_____		4724	Pathogenic Bacteriology Lab#	(2)	_____
	3254	Med and Vet Entomology#	(3)	_____		4704	Immunology#	(3)	_____
BIOL	+	Med & Vet Entomology			BIOL	+			
	3264	Lab#	(1)	_____		4714	Immunology Laboratory#	(1)	_____
	4624	Microbial Genetics#	(3)	_____					
BIOL	+	Microbial Genetics & Physiol							
	4644	Lab#	(3)	_____					
BIOL	3104	Cell Molecular Biol Laboratory#	(1)	_____	BIOL	4314	Plant Ecology#	(4)	_____
BIOL	3114	Field and Laboratory Ecology#	(1)	_____	BIOL	4354	Aquatic Entomology#	(4)	_____
BIOL	3204	Plant Taxonomy#	(3)	_____	BIOL	4404	Ornithology#	(4)	_____
BIOL	3454	Introductory Parasitology#	(4)	_____	BIOL	4454	Invertebrate Zoology#	(4)	_____
BIOL	3604	Food Microbiology#	(4)	_____	BIOL	4484	Freshwater Biomonitoring#	(4)	_____
BIOL	4004	Freshwater Ecology#	(4)	_____	BIOL	4824	Bioinformatics Methods#	(3)	_____
BIOL	4164	Environmental Microbiology#	(3)	_____					

**b. Approved Biological Sciences Electives.**

BIOL	2204	Plants and Civilization#	(3)	_____	BIOL	4454	Invertebrate Zoology#	(4)	_____
BIOL	2404	Biotech in Global Society#	(3)	_____	BIOL	4474	Ethology#*	(3)	_____
BIOL	3014	Insect Biology#	(2)	_____	BIOL	4484	Freshwater Biomonitoring#	(4)	_____
BIOL	3024	Insect Biology Laboratory#	(2)	_____	BIOL	4554	Neurochemical Regulation#	(3)	_____
BIOL	3104	Cell Molecular Biol Laboratory#	(1)	_____	BIOL	4564	Infectious Disease Ecology#	(3)	_____
BIOL	3114	Field and Laboratory Ecology#	(1)	_____	BIOL	4574	Social Behav Birds & Mammals#	(3)	_____
BIOL	3134	Human Genetics#	(3)	_____	BIOL	4594	EEB Senior Seminar#	(3)	_____
BIOL	3204	Plant Taxonomy#	(3)	_____	BIOL	4624	Microbial Genetics#	(3)	_____
BIOL	3254	Med and Vet Entomology#	(3)	_____	BIOL	4634	Microbial Physiology#	(3)	_____
BIOL	3264	Med and Vet Entomology Lab#	(1)	_____	BIOL	4644	Microbial Genetics & Physiology Lab#	(3)	_____
BIOL	3404	Introductory Animal Physiology#	(3)	_____	BIOL	4664	Virology#	(3)	_____
BIOL	3454	Introductory Parasitology#	(4)	_____	BIOL	4674	Pathogenic Bacteriology#	(3)	_____
BIOL	3604	Food Microbiology#	(4)	_____	BIOL	4704	Immunology#	(3)	_____
BIOL	3774	Molecular Biology#	(3)	_____	BIOL	4714	Immunology Laboratory#	(1)	_____
BIOL	3954	Study Abroad (var. credit)	( )	_____	BIOL	4724	Pathogenic Bacteriology Lab#	(2)	_____
BIOL	4004	Freshwater Ecology#	(4)	_____	BIOL	4734	Inflammation Biology#	(3)	_____
BIOL	4104	Developmental Biology#	(3)	_____	BIOL	4824	Bioinformatics Methods#	(3)	_____
BIOL	4114	Global Change Ecology#	(3)	_____	BIOL	4844	Proteomics Mass Spectrometry#	(3)	_____
BIOL	4134	Evolutionary Genetics#	(3)	_____	BIOL	4854	Cytogenetics#	(3)	_____
BIOL	4164	Environmental Microbiology#	(3)	_____	BIOL	4874	Cancer Biology#	(3)	_____
BIOL	4314	Plant Ecology#	(4)	_____	BIOL	4884	Cell Biology#	(3)	_____
BIOL	4354	Aquatic Entomology#	(4)	_____	BIOL	4974	Independent Study (var. credit) <sup>2</sup>	( )	_____
BIOL	4404	Ornithology#	(4)	_____	BIOL	4994	Undergraduate Research (var. credit) <sup>2</sup>	( )	_____



<b>Degree Core Requirements</b>	<b>21 Credits</b>
<b>Biological Science Major Requirements</b>	<b>19 Credits</b>
<b>Science Education Option Requirements</b>	<b>17 Credits</b>
<b>Science Education Option Electives</b>	<b>8 credits</b>
<b>Total Curriculum for Liberal Education Requirements:</b>	<b>38 Credits</b>
<b>Total Free Electives</b>	<b>17 Credits</b>
<b>Total Credits Required for Graduation</b>	<b>120 Credits</b>

<sup>1</sup> 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.

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

<sup>3</sup> 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 Biological Principles Lab  
 BIOL 1116: BIOL 1016 General Biology Lab OR BIOL 1126 Biological 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 & Mammals

**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  
    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.