

BIOLOGICAL SCIENCES MAJOR WITH ECOLOGY, EVOLUTION, AND BEHAVIOR OPTION

Program Curriculum

Code	Title	Credits
Degree Core Requirements		
BIOL 1115	Principles of Biology Laboratory ¹	1
BIOL 1116	Principles of Biology Laboratory ¹	1
BIOL 2004	Genetics [#]	3
BIOL 2134	Cell Function and Differentiation [#]	3
BIOL 2704	Evolutionary Biology [#]	3
BIOL 2804	Ecology [#]	3
CHEM 1035	General Chemistry ¹	3
CHEM 1036	General Chemistry ¹	3
Subtotal		20
Major Requirements		
BIOL 1004	Biology Orientation Seminar ²	1
CHEM 1045	General Chemistry Laboratory	1
CHEM 1046	General Chemistry Laboratory	1
CHEM 2535	Organic Chemistry [#]	3
CHEM 2536	Organic Chemistry [#]	3
CHEM 2545	Organic Chemistry Laboratory [#]	1
CHEM 2546	Organic Chemistry Laboratory [#]	1
PHYS 2205	General Physics [#]	3
PHYS 2206	General Physics [#]	3
PHYS 2215	General Physics Laboratory [#]	1
PHYS 2216	General Physics Laboratory [#]	1
Subtotal		19
Option Electives ³		
<i>1. Organismal Diversity</i>		
Select one of the following:		3
BIOL 2304	Plant Biology [#]	
BIOL 2504	General Zoology [#]	
BIOL 2604	General Microbiology [#]	
<i>2. Organismal Biology, Behavior, and Physiology</i>		
Select at least 9 credits of the following:		9
BIOL 1034	Biology of Sex	
BIOL 1074	How Animals Think	
BIOL 3014	Insect Biology [#]	
BIOL 3204	Plant Taxonomy [#]	
BIOL 3404	Introductory Animal Physiology [#]	
BIOL 3454	Introductory Parasitology [#]	
BIOL 4354	Aquatic Entomology [#]	
BIOL 4404	Ornithology [#]	
BIOL 4454	Invertebrate Zoology [#]	
BIOL 4474	Ethology [#]	
BIOL 4554	Neurochemical Regulation [#]	

BIOL 4574	Social Behavior of Birds and Mammals [#]	
BIOL 4994	Undergraduate Research (A-F) ⁴	
FIW 4334	Mammalogy [#]	
FIW 4344	Herpetology [#]	
FIW 4424	Ichthyology ^{#, ^}	
<i>3. Ecology and Evolution</i>		
Select at least 9 credits of the following:		9
BIOL 1064	Plants and Civilization	
BIOL 3254	Medical and Veterinary Entomology [#]	
BIOL 4004	Freshwater Ecology [#]	
BIOL 4014	Environmental Toxicology [#]	
BIOL 4114	Global Change Ecology [#]	
BIOL 4134	Evolutionary Genetics [#]	
BIOL 4164	Environmental Microbiology [#]	
BIOL 4314	Plant Ecology [#]	
BIOL 4334	Chemical Ecology [#]	
BIOL 4484	Freshwater Biomonitoring [#]	
BIOL 4564	Infectious Disease Ecology [#]	
BIOL 4594	Ecology, Evolution, and Behavior Senior Seminar [#]	
BIOL 4684	Microbiomes [#]	
BIOL 4824	Bioinformatics Methods [#]	
BIOL 4994	Undergraduate Research (A-F) ⁴	
CSES 3114	Soils [#]	
FIW 4614	Fish Ecology [#]	
FIW 4624	Marine Ecology [#]	
<i>4. Laboratory Courses</i>		
Select at least three courses of the following: ³		3-12
BIOL 2614	General Microbiology Laboratory [#]	
BIOL 3024	Insect Biology Laboratory [#]	
BIOL 3114	[#]	
BIOL 3204	Plant Taxonomy [#]	
BIOL 3264	Medical and Veterinary Entomology Laboratory [#]	
BIOL 3454	Introductory Parasitology [#]	
BIOL 4004	Freshwater Ecology [#]	
BIOL 4314	Plant Ecology [#]	
BIOL 4354	Aquatic Entomology [#]	
BIOL 4404	Ornithology [#]	
BIOL 4454	Invertebrate Zoology [#]	
BIOL 4484	Freshwater Biomonitoring [#]	
BIOL 4824	Bioinformatics Methods [#]	
CSES 3124	Soils Laboratory [#]	
FIW 4334	Mammalogy [#]	
FIW 4344	Herpetology [#]	
FIW 4424	Ichthyology ^{#, ^}	
Subtotal		24-33
Free Electives		
Complete remaining credit hours to satisfy 120 credit hour requirement.		9-21
Subtotal		9-21
Pathways to General Education		
<i>Pathways Concept 1 - Discourse</i>		
ENGL 1105	First-Year Writing (1F)	3

ENGL 1106	First-Year Writing (1F)	3
Select 3 credits in Pathway 1a (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G01A)		3
<i>Pathways Concept 2 - Critical Thinking in the Humanities</i>		
Select 6 credits in Pathway 2 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G02)		6
<i>Pathways Concept 3 - Reasoning in the Social Sciences</i>		
Select 6 credits in Pathway 3 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G03)		6
<i>Pathways Concept 4 - Reasoning in the Natural Sciences</i>		
BIOL 1105	Principles of Biology ¹	3
BIOL 1106	Principles of Biology ¹	3
<i>Pathways Concept 5 - Quantitative and Computational Thinking</i>		
MATH 1025	Elementary Calculus (5F)	3
MATH 1026	Elementary Calculus (5F)	3
STAT 3615	Biological Statistics (5A) [#]	3
<i>Pathways Concept 6 - Critique and Practice in Design and the Arts</i>		
Select 6 credits = 3 design + 3 arts, or 6 integrated design/arts		6
<i>Pathways Concept 7 - Critical Analysis of Identity and Equity in the United States</i>		
Select 3 credits in Pathway 7 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G07)		3
Subtotal		45
Total Credits		120

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

² BIOL 1004 is required but will not be used to calculate in-major GPA.

³ A course used to complete the laboratory requirement may also count toward the EEB Elective group (2 or 3) in which it is listed.

⁴ A 3-credit BIOL 4994 experience taken for grade of A-F may count toward **EITHER** EEB Elective Option group 2 OR 3.

[^] Course has major restriction: students may ask FIW to be added if seats are available.

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

Cross-listed Courses on this Checksheet

- ALS/BIOL 4554: Neurochemical Regulation
- BIO/HORT 2304: Plant Biology
- ENSC/BIOL 4164: Environmental Microbiology
- CSES 3114 / GEOS 3614: Soils
- CSES 3124 / GEOS 3624: Soils Laboratory
- ENT/BIOL 3014: Insect Biology
- ENT/BIOL 3024: Insect Biology Laboratory
- ENT/BIOL 3254: Med and Vet Entomology
- ENT/BIOL 3264: Med and Vet Ent Lab
- ENT/BIOL 4354: Aquatic Entomology
- ENT/FIW/BIOL 4484: Freshwater Biomonitoring

1. Students must earn a grade of "C" or better in BIOL 1105 Principles of Biology, BIOL 1106 Principles of Biology, BIOL 1115 Principles of Biology Laboratory, BIOL 1116 Principles of Biology Laboratory, CHEM 1035 General Chemistry, CHEM 1036 General Chemistry or equivalent upon attempting 45 credit hours (including transfer credit, advance placement or IB credit, advance standing credit, credit by 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 after attempting 45 credit hours (including transfer credit, advanced placement or IB credit, advance standing credit, credit by examination, courses taken P/F, and courses completed with a grade of "W").
3. All BIOL courses (except BIOL 1004 Biology Orientation Seminar, BIOL 1214 Careers in Medicine, and BIOL 3814 Careers In Biological Sciences), 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.

Graduation Requirements

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

All BIOL courses (except BIOL 1004 Biology Orientation Seminar, BIOL 1214 Careers in Medicine, BIOL 3814 Careers In Biological Sciences), any course taken to fulfill EEB Option elective credit, and all required CHEM, MATH, PHYS and STAT courses will be used to calculate in-major GPA.

Acceptable Substitutions

BIOL 1004 Biology Orientation Seminar: Any university-approved First-Year Experience (FYE) course

BIOL 2704 Evolutionary Biology: BIOL 2704H

BIOL 2804 Ecology: BIOL 2804H

BIOL 4474 Ethology: PSYC 2074 Animal Behavior

CHEM 1035 General Chemistry-CHEM 1036 General Chemistry: CHEM 1055 General Chemistry for Chemistry Majors -CHEM 1056 General Chemistry for Chemistry Majors

CHEM 1045 General Chemistry Laboratory-CHEM 1046 General Chemistry Laboratory: CHEM 1065 General Chemistry for Chemistry Majors Lab-CHEM 1066 General Chemistry for Chemistry Majors Lab

CHEM 2535 Organic Chemistry-CHEM 2536 Organic Chemistry: CHEM 2565 Principles of Organic Chemistry-CHEM 2566 Principles of Organic Chemistry

CHEM 2545 Organic Chemistry Laboratory-CHEM 2546 Organic Chemistry Laboratory: CHEM 2555 Organic Synthesis and Techniques Lab-CHEM 2556 Organic Synthesis and Techniques Lab

PHYS 2205 General Physics, PHYS 2215 General Physics Laboratory: PHYS 2305 Foundations of Physics

PHYS 2206 General Physics, PHYS 2216 General Physics Laboratory: PHYS 2306 Foundations of Physics

MATH 1025 Elementary Calculus: MATH 1225 Calculus of a Single Variable

MATH 1026 Elementary Calculus: MATH 1226 Calculus of a Single Variable

STAT 3615 Biological Statistics: STAT 3005 Statistical Methods or STAT 3604 Statistics for Social Science

Foreign Language Requirement

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.