Biology Major

Area of Emphasis

Students must complete requirements in one of the following areas of emphasis:

- Animal Biology
  - Animal Biology (Accelerated) - Integrated with graduate Environmental Science & Policy program
- Aquaculture
- Aquatic Ecology and Fisheries Emphasis
- Cell/Molecular
- Ecology and Conservation
  - Ecology and Conservation (Accelerated) - Integrated with graduate Environmental Science & Policy Program
- Microbiology
- Pre-Veterinary

Animal Biology

Code	Title	Credits
Supporting Courses		**25-29**
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathematics (choose one course):		
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
ENV SCI 336	Environmental Statistics	
ENV SCI 337	Environmental GIS	
Writing (choose one course): [1]		
INFO SCI 390	Technical Writing	
WF 105	Research and Rhetoric	
Upper Level Courses		**30-33**
Required courses		
BIOLOGY 303	Genetics	
BIOLOGY 306	Principles of Ecology	
BIOLOGY 309	Evolutionary Biology	
BIOLOGY 311	Plant Physiology	
or BIOLOGY 346	Comparative Physiology	
Cell or Microbiology (choose one):		
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory	
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	
BIOLOGY 322	Environmental Microbiology	
Choose 12-14 credits from the following courses:		
BIOLOGY 304	Genetics Laboratory	
BIOLOGY 310	Plant Biodiversity	
BIOLOGY 320	Field Botany	
BIOLOGY 322	Environmental Microbiology	

BIOLOGY 340	Comparative Anatomy of Vertebrates
BIOLOGY 341	Ichthyology
BIOLOGY 342	Ornithology
BIOLOGY 343	Mammalogy
BIOLOGY 345	Animal Behavior
BIOLOGY 346	Comparative Physiology
BIOLOGY 355	Entomology
BIOLOGY 357	Marine Biology
BIOLOGY 365	Aquatic Invertebrates
BIOLOGY 401	Fish and Wildlife Population Dynamics
BIOLOGY 410	Developmental Biology
BIOLOGY 411	Developmental Biology Laboratory
ENV SCI 337	Environmental GIS
ENV SCI 401	Stream Ecology
ENV SCI 403	Limnology
HUM BIOL 402	Human Physiology
HUM BIOL 403	Human Physiology Laboratory
HUM BIOL 413	Neurobiology
HUM BIOL 422	Immunology
HUM BIOL 423	Immunology Lab
HUM BIOL 444	Endocrinology
BIOLOGY 449	Wetland Ecology
Seminar, 1 credit required	
BIOLOGY 490	Biology Seminar
Total Credits	**55-62**

[1] Satisfied with an ACT English score of 32 or higher

Animal Biology (Accelerated) - Integrated with graduate Environmental Science & Policy program

Code	Title	Credits
Supporting Courses		**25-29**
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathematics (choose one course):		
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
ENV SCI 336	Environmental Statistics	
ENV SCI 337	Environmental GIS	
Writing (choose one course): [1]		
INFO SCI 390	Technical Writing	
WF 105	Research and Rhetoric	
Upper Level Courses		**30-33**
Required courses		
BIOLOGY 303	Genetics	
BIOLOGY 306	Principles of Ecology	

BIOLOGY 309	Evolutionary Biology
BIOLOGY 311/511	Plant Physiology [#]
or BIOLOGY 346	Comparative Physiology
Cell or Microbiology (choose one):	
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory
BIOLOGY 322/522	Environmental Microbiology [#]
Choose 12-14 credits from the following courses:	
BIOLOGY 304	Genetics Laboratory
BIOLOGY 310/510	Plant Biodiversity [#]
BIOLOGY 320/520	Field Botany [#]
BIOLOGY 322/522	Environmental Microbiology [#]
BIOLOGY 340	Comparative Anatomy of Vertebrates
BIOLOGY 341/541	Ichthyology [#]
BIOLOGY 342/542	Ornithology [#]
BIOLOGY 343/543	Mammalogy [#]
BIOLOGY 345	Animal Behavior
BIOLOGY 346	Comparative Physiology
BIOLOGY 355/555	Entomology [#]
BIOLOGY 357/557	Marine Biology [#]
BIOLOGY 365	Aquatic Invertebrates
BIOLOGY 401/601	Fish and Wildlife Population Dynamics [#]
BIOLOGY 410	Developmental Biology
BIOLOGY 411	Developmental Biology Laboratory
ENV SCI 337/537	Environmental GIS [#]
ENV SCI 401/601	Stream Ecology [#]
ENV SCI 403/603	Limnology [#]
HUM BIOL 402/602	Human Physiology [#]
HUM BIOL 403	Human Physiology Laboratory
HUM BIOL 413	Neurobiology
HUM BIOL 422	Immunology
HUM BIOL 423	Immunology Lab
HUM BIOL 444	Endocrinology
Seminar, 1 credit required	
BIOLOGY 490	Biology Seminar
Total Credits	**55-62**

[#] Students must be granted permission through the department to enroll in graduate level coursework. For more information, contact the graduate Environmental Science & Policy office or refer to the graduate catalog (http://catalog.uwgb.edu/archive/2023-2024/graduate/general-information/academic-rules-regulations/undergrad-in-accelerated/).

Aquaculture

Code	Title	Credits
Supporting Courses		**28**
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 207	Laboratory Safety	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	

CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathematics (choose one course):		
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
ENV SCI 336	Environmental Statistics	
ENV SCI 337	Environmental GIS	
Writing (choose one course):		
WF 105	Research and Rhetoric	
INFO SCI 390	Technical Writing	
Upper Level Courses		**36**
Required Courses		
BIOLOGY 303	Genetics	
BIOLOGY 306	Principles of Ecology	
BIOLOGY 341	Ichthyology	
BIOLOGY 360	Early Life History of Fish	
BIOLOGY 361	Introduction to Aquaculture	
BIOLOGY 461	Advanced Aquaculture	
CHEM 300 & CHEM 301	Bio-Organic Chemistry and Bio-Organic Chemistry Laboratory	
ENV SCI 403	Limnology	
Cell or Microbiology (choose one):		
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory	
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	
BIOLOGY 322	Environmental Microbiology	
Choose one of the following courses:		
BIOLOGY 309	Evolutionary Biology	
or BIOLOGY 346	Comparative Physiology	
Seminar		**1**
BIOLOGY 490	Biology Seminar	
Total Credits		**65**

Aquatic Ecology and Fisheries

Code	Title	Credits
Supporting Courses		28
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 207	Laboratory Safety	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathematics (choose one course):		
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
ENV SCI 336	Environmental Statistics	
ENV SCI 337	Environmental GIS	

Writing (choose one course):		
WF 105	Research and Rhetoric	
INFO SCI 390	Technical Writing	
Upper Level Courses		**36**
Required Courses		
BIOLOGY 303	Genetics	
BIOLOGY 306	Principles of Ecology	
BIOLOGY 309	Evolutionary Biology	
BIOLOGY 322	Environmental Microbiology	
BIOLOGY 346	Comparative Physiology	
BIOLOGY 360	Early Life History of Fish	
BIOLOGY 449	Wetland Ecology	
Choose one of the following courses:		
BIOLOGY 341	Ichthyology	
BIOLOGY 365	Aquatic Invertebrates	
Choose one of the following courses:		
ENV SCI 401	Stream Ecology	
ENV SCI 403	Limnology	
Choose one of the following courses:		
BIOLOGY 370	Fisheries Research and Management	
BIOLOGY 401	Fish and Wildlife Population Dynamics	
Seminar		**1**
BIOLOGY 490	Biology Seminar	
Total Credits		**65**

Cell/Molecular

Code	Title	Credits
Supporting Courses		**28-29**
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathematics (choose one course):		
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
ENV SCI 336	Environmental Statistics	
ENV SCI 337	Environmental GIS	
Writing (choose one course): [1]		
INFO SCI 390	Technical Writing	
WF 105	Research and Rhetoric	
Upper Level Courses		**30-33**
Required courses		
BIOLOGY 303	Genetics	
BIOLOGY 306	Principles of Ecology	
BIOLOGY 307	Cell Biology	
BIOLOGY 308	Cell Biology Laboratory	
BIOLOGY 309	Evolutionary Biology	

BIOLOGY 311	Plant Physiology
or BIOLOGY 346	Comparative Physiology
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory
BIOLOGY 407	Molecular Biology
Minimum of 4 credits of the following courses:	
CHEM 300 & CHEM 301	Bio-Organic Chemistry and Bio-Organic Chemistry Laboratory
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I
Choose a minimum of 5 credits from the following courses:	
BIOLOGY 304	Genetics Laboratory
BIOLOGY 312	Mycology
BIOLOGY 322	Environmental Microbiology
BIOLOGY 402	Advanced Microbiology
BIOLOGY 408	Molecular Biology Laboratory
BIOLOGY 410	Developmental Biology
BIOLOGY 411	Developmental Biology Laboratory
CHEM 330	Biochemistry
CHEM 331	Biochemistry Laboratory
HUM BIOL 422	Immunology
HUM BIOL 423	Immunology Lab
HUM BIOL 444	Endocrinology
Seminar, 1 credit required	
BIOLOGY 490	Biology Seminar
Total Credits	**58-62**

[1] Satisfied with an ACT English score of 32 or higher

Ecology and Conservation

Code	Title	Credits
Supporting Courses		**25-29**
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathematics (choose one course):		
COMP SCI 256	Introduction to Software Design	
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
Writing (choose one course): [1]		
INFO SCI 390	Technical Writing	
WF 105	Research and Rhetoric	
Upper Level Courses		**30-33**
Required Courses		
BIOLOGY 303	Genetics	
BIOLOGY 306	Principles of Ecology	
BIOLOGY 309	Evolutionary Biology	

BIOLOGY 469	Conservation Biology
Cell or Microbiology (choose one):	
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory
BIOLOGY 322	Environmental Microbiology
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory
Physiology Course (choose one):	
BIOLOGY 311	Plant Physiology
or BIOLOGY 346	Comparative Physiology
Choose a minimum of 8 credits from the following courses:	
BIOLOGY 310	Plant Biodiversity
BIOLOGY 311	Plant Physiology
BIOLOGY 312	Mycology
BIOLOGY 320	Field Botany
BIOLOGY 322	Environmental Microbiology
BIOLOGY 342	Ornithology
BIOLOGY 343	Mammalogy
BIOLOGY 355	Entomology
BIOLOGY 365	Aquatic Invertebrates
ENV SCI 401	Stream Ecology
BIOLOGY 357	Marine Biology
BIOLOGY 401	Fish and Wildlife Population Dynamics
ENV SCI 337	Environmental GIS
ENV SCI 403	Limnology
ENV SCI 467	Capstone in Environmental Science
BIOLOGY 449	Wetland Ecology
ENV SCI 499	Travel Course
Seminar, 1 credit required	
BIOLOGY 490	Biology Seminar
Total Credits	**55-62**

[1] Satisfied with an ACT English score of 32 or higher

Ecology and Conservation (Accelerated) - Integrated with graduate Environmental Science & Policy program

Code	Title	Credits
Supporting Courses		**25-29**
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathematics (choose one course):		
COMP SCI 256	Introduction to Software Design	
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
Writing (choose one course): [1]		
ENG COMP 105	English Composition II: Composition and Rhetoric	

INFO SCI 390	Technical Writing	
Upper Level Courses		**30-33**
Required Courses		
BIOLOGY 303	Genetics	
BIOLOGY 306	Principles of Ecology	
BIOLOGY 309	Evolutionary Biology	
BIOLOGY 469	Conservation Biology	
Cell or Microbiology (Choose one):		
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory	
BIOLOGY 322	Environmental Microbiology	
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	
Physiology Course (choose one):		
BIOLOGY 311	Plant Physiology	
or BIOLOGY 346	Comparative Physiology	
Choose a minimum of 8 credits from the following courses:		
BIOLOGY 310/510	Plant Biodiversity #	
BIOLOGY 311/511	Plant Physiology #	
BIOLOGY 312/512	Mycology #	
BIOLOGY 320/520	Field Botany #	
BIOLOGY 322/522	Environmental Microbiology #	
BIOLOGY 342/542	Ornithology #	
BIOLOGY 343/543	Mammalogy #	
BIOLOGY 355/555	Entomology #	
BIOLOGY 357/557	Marine Biology #	
BIOLOGY 365	Aquatic Invertebrates	
BIOLOGY 401/601	Fish and Wildlife Population Dynamics #	
BIOLOGY 449	Wetland Ecology	
BIOLOGY 450/650	Ecological Restoration #	
ENV SCI 337/537	Environmental GIS #	
ENV SCI 401/601	Stream Ecology #	
ENV SCI 403/603	Limnology #	
ENV SCI 467	Capstone in Environmental Science	
ENV SCI 499	Travel Course	
Seminar, 1 credit required		
BIOLOGY 490	Biology Seminar	
Total Credits		**55-62**

Students must be granted permission through the department to enroll in graduate level coursework. For more information, contact the graduate Environmental Science & Policy office or refer to the graduate catalog (http://catalog.uwgb.edu/archive/2023-2024/graduate/general-information/academic-rules-regulations/undergrad-in-accelerated/).

Microbiology

Code	Title	Credits
Supporting Courses		**25-29**
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	

CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathematics (choose one course):		
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
ENV SCI 336	Environmental Statistics	
ENV SCI 337	Environmental GIS	
Writing (choose one course): [1]		
INFO SCI 390	Technical Writing	
WF 105	Research and Rhetoric	
Upper Level Courses [2]		**34-38**
Required courses		
BIOLOGY 306	Principles of Ecology	
BIOLOGY 311	Plant Physiology	
or BIOLOGY 346	Comparative Physiology	
BIOLOGY 303	Genetics	
BIOLOGY 309	Evolutionary Biology	
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	
or BIOLOGY 322	Environmental Microbiology	
BIOLOGY 402	Advanced Microbiology	
Chemistry (minimum of 8 credits of the following courses):		
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	
CHEM 330	Biochemistry	
CHEM 331	Biochemistry Laboratory	
Electives (choose 8 or more credits from the following courses):		
BIOLOGY 307	Cell Biology	
BIOLOGY 308	Cell Biology Laboratory	
BIOLOGY 312	Mycology	
BIOLOGY 407	Molecular Biology	
BIOLOGY 408	Molecular Biology Laboratory	
BIOLOGY 497	Internship	
HUM BIOL 422	Immunology	
HUM BIOL 423	Immunology Lab	
Seminar (1 credit required):		
BIOLOGY 490	Biology Seminar	
Total Credits		**59-67**

1 Satisfied with an ACT English score of 32 or higher

2 Research experience and/or Internships are highly recommended. Credits from research and internships may be counted toward upper level electives.
Students planning to continue on to graduate school or a professional program are recommended to take calculus, physics and organic chemistry.

Pre-Veterinary

Code	Title	Credits
Supporting Courses		**24-27**
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	

BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	
MATH 260	Introductory Statistics	
Mathemetics (choose one course):		
MATH 104	Precalculus	
MATH 202	Calculus and Analytic Geometry I	
ENV SCI 336	Environmental Statistics	
ENV SCI 337	Environmental GIS	
Writing (choose one course): [1]		
ENG COMP 105	English Composition II: Composition and Rhetoric	
Upper Level Courses		**47**
BIOLOGY 303	Genetics	
BIOLOGY 306	Principles of Ecology	
BIOLOGY 309	Evolutionary Biology	
BIOLOGY 346	Comparative Physiology	
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	
CHEM 330	Biochemistry	
Cell Biology (choose one of the following options):		
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory	
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	
Physics (choose one of the following options):		
PHYSICS 103 & PHYSICS 104	Fundamentals of Physics I and Fundamentals of Physics II	
PHYSICS 201 & PHYSICS 202	Principles of Physics I and Principles of Physics II	
Choose a minimum of 8 credits from the following courses:		
BIOLOGY 304	Genetics Laboratory	
BIOLOGY 340	Comparative Anatomy of Vertebrates	
BIOLOGY 342	Ornithology	
BIOLOGY 343	Mammalogy	
BIOLOGY 345	Animal Behavior	
BIOLOGY 411	Developmental Biology Laboratory	
HUM BIOL 422	Immunology	
HUM BIOL 423	Immunology Lab	
Seminar, 1 credit required		
BIOLOGY 490	Biology Seminar	
Total Credits		**71-74**

1 Satisfied with an ACT English score of 32 or higher