

Biology Curriculum Guides

The following are curriculum guides for a four-year Biology degree program and is subject to change without notice. Students should consult a Biology program advisor to ensure that they have the most accurate and up-to-date information available about a particular four-year degree option.

- Biology Major with Emphasis in Animal Biology Curriculum Guide Example
- Biology Major with Emphasis in Aquatic Ecology and Fisheries Curriculum Guide Example
- Biology Major with Emphasis in Biology for Educators Curriculum Guide Example
- Biology Major with Emphasis in Cell/Molecular Biology Curriculum Guide Example
- Biology Major with Emphasis in Ecology & Conservation Biology Curriculum Guide Example
- Biology Major with Emphasis in Microbiology Curriculum Guide Example
- Biology Major with Emphasis in Pre-Vet Curriculum Guide Example

Biology Major with Emphasis in Animal Biology

An example: Four year plan for **Biology Major with Emphasis in Animal Biology**

120 credits necessary to graduate.

Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	4
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
MATH 104 or General Ed		
Credits		13
Spring		
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 260	Introductory Statistics	4
General Ed		3
Credits		16
Sophomore		
Fall		
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory (or Biology 302)	4
WF 105	Research and Rhetoric	3
General Ed		3
General Ed		3
Elective		3
Credits		16
Spring		
BIOLOGY 303	Genetics	3
BIOLOGY 309	Evolutionary Biology	3
General Ed		3
General Ed		3
Elective		3
Credits		15
Junior		
Fall		
BIOLOGY 306	Principles of Ecology	4
Biology Elective		3-4
General Ed		3
Elective		3

Elective		3
Credits		16-17
Spring		
BIOLOGY 346	Comparative Physiology (Or BIOLOGY 311 in Fall)	3
Biology Elective		3-4
Biology Elective		3-4
General Ed		3
Elective		3
Credits		15-17
Senior		
Fall		
BIOLOGY 490	Biology Seminar (Fall or Spring)	1
BIOLOGY 498 or BIOLOGY 497	Independent Study (Recommended) or Internship	1-4
Biology Elective		3-4
General Ed		3
Elective		3
Elective		3
Credits		14-18
Spring		
Biology Elective		3-4
Elective		3
Elective		3
Elective		3
Elective		3
Credits		15-16
Total Credits		120-128

Biology Major with Emphasis in Aquatic Ecology & Fisheries

An example: Four year plan for **Biology Major with Emphasis in Aquatic Ecology & Fisheries**

120 credits necessary to graduate.

Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	4
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed		3
Credits		16
Spring		
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
CHEM 212	Principles of Chemistry II	4
CHEM 213	Principles of Chemistry I Laboratory	1
MATH 260	Introductory Statistics	4
General Ed		3
Credits		16
Sophomore		
Fall		
BIOLOGY 303	Genetics	3
MATH 104 or MATH 202	Precalculus or Calculus and Analytic Geometry I	4
WF 105 or INFO SCI 390	Research and Rhetoric or Technical Writing	3
General Ed		3
General Ed		3
Credits		16

Junior		
Fall		
BIOLOGY 360	Early Life History of Fish	4
BIOLOGY 469	Conservation Biology	4
ENV SCI 403 or ENV SCI 401	Limnology or Stream Ecology	4
General Ed		3
Credits		15
Spring		
BIOLOGY 341	Ichthyology	4
BIOLOGY 322	Environmental Microbiology	4
BIOLOGY 346	Comparative Physiology	3
BIOLOGY 370	Fisheries Research and Management	3
General Ed		3
Credits		17
Senior		
Fall		
BIOLOGY 490	Biology Seminar	1
ENV SCI 467	Capstone in Environmental Science	4
Major Elective		3-4
Major Elective		3-4
General Ed		3
Credits		14-16
Spring		
BIOLOGY 401	Fish and Wildlife Population Dynamics	4
BIOLOGY 449	Wetland Ecology	3
Major Elective		3-4
Major Elective		3-4
Credits		13-15
Total Credits		107-111

Biology Major with Emphasis in Cell/Molecular

An example: Four year plan for **Biology Major with Emphasis in Cell/Molecular**

120 credits necessary to graduate.

Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	4
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
MATH 104 or General Ed		3
Credits		16
Spring		
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 260	Introductory Statistics	4
General Ed		3
Credits		16
Sophomore		
Fall		
BIOLOGY 323 & BIOLOGY 324	Principles of Microbiology and Principles of Microbiology Laboratory	4
WF 105	Research and Rhetoric	3
General Ed		3
General Ed		3

Elective		3
Credits		16
Spring		
BIOLOGY 303	Genetics	3
BIOLOGY 309	Evolutionary Biology	3
General Ed		3
General Ed		3
Elective		3
Credits		15
Junior		
Fall		
BIOLOGY 306	Principles of Ecology	4
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory	4
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I (or CHEM 300 in Spring)	4
General Ed		3
Credits		15
Spring		
BIOLOGY 346	Comparative Physiology (Or BIOLOGY 311 in Fall)	3
CHEM 300 & CHEM 301	Bio-Organic Chemistry and Bio-Organic Chemistry Laboratory (or Organic I in Fall)	4
BIOLOGY 407	Molecular Biology	3
General Ed		3
Elective		3
Credits		16
Senior		
Fall		
BIOLOGY 490	Biology Seminar (fall or spring)	1
Biology Elective		3-4
General Ed		3
Elective		3
Elective		3
Elective		3
Credits		16-17
Spring		
Biology Elective		3-4
Elective		3
Elective		3
Elective		3
Credits		12-13
Total Credits		122-124

Biology Major with Emphasis in Ecology & Conservation

An example: Four year plan for **Biology Major with Emphasis in Ecology and Conservation Biology**
120 credits necessary to graduate.

Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	4
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
MATH 104 or General Ed		3
Credits		16
Spring		
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4

CHEM 212	Principles of Chemistry II	4
CHEM 214	Principles of Chemistry II Laboratory	1
MATH 260	Introductory Statistics	4
General Ed		3
Credits		16
Sophomore		
Fall		
BIOLOGY 323 & BIOLOGY 324 or BIOLOGY 307 or BIOLOGY 322	Principles of Microbiology or Cell Biology or Environmental Microbiology	4
WF 105	Research and Rhetoric	3
MATH 202 or General Ed		3
General Ed		3
General Ed		3
Credits		16
Spring		
BIOLOGY 303	Genetics	3
BIOLOGY 306	Principles of Ecology	4
BIOLOGY 322 or BIOLOGY 323 or BIOLOGY 307	Environmental Microbiology or Principles of Microbiology or Cell Biology	4
General Ed		3
General Ed		3
Credits		17
Junior		
Fall		
BIOLOGY 307 & BIOLOGY 308 or BIOLOGY 322 or BIOLOGY 323	Cell Biology or Environmental Microbiology or Principles of Microbiology	4
BIOLOGY 309	Evolutionary Biology	3
BIOLOGY 311	Plant Physiology (or BIOLOGY 346 in spring)	4
General Ed		3
Elective		
Credits		14
Spring		
BIOLOGY 346	Comparative Physiology (Or BIOLOGY 311 in Fall)	3
Biology Elective		3-4
Biology Elective		3-4
General Ed		3
Elective		3
Credits		15-17
Senior		
Fall		
BIOLOGY 490	Biology Seminar (fall or spring)	1
BIOLOGY 498 or BIOLOGY 497	Independent Study (Recommended) or Internship	2-3
Biology Elective		3-4
General Ed		3
Elective		3
Elective		3
Credits		15-17
Spring		
Biology Elective		3-4
Elective		3
Elective		3
Elective		3
Credits		12-13
Total Credits		121-126

Biology Major with Emphasis in Biology for Educators

An example: Four year plan for **Biology Major with Emphasis in Biology for Educators**

120 credits necessary to graduate.

Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	4
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed		3
Credits		16
Spring		
BIOLOGY 201 & BIOLOGY 204	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Organisms and Evolution	4
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 260	Introductory Statistics	4
General Ed		3
Credits		16
Sophomore		
Fall		
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory (or Biology 302)	4
MATH 202	Calculus and Analytic Geometry I	4
WF 105	Research and Rhetoric	3
General Ed		3
General Ed		3
Credits		17
Spring		
BIOLOGY 303	Genetics	3
BIOLOGY 309	Evolutionary Biology	3
General Ed		3
General Ed		3
Elective		3
Credits		15
Junior		
Fall		
BIOLOGY 306	Principles of Ecology	4
Biology Elective		3-4
Biology Elective		3-4
General Ed		3
Elective		3
Credits		16-18
Spring		
BIOLOGY 346 or BIOLOGY 311	Comparative Physiology or Plant Physiology	3-4
Biology Elective		3-4
Biology Elective		3-4
General Ed		3
Elective		3
Credits		15-18
Senior		
Fall		
BIOLOGY 490	Biology Seminar (fall or spring)	1
General Ed		3
General Ed		3
Elective		3

Elective		3
Elective		3
	Credits	16
Spring		
Elective		3
Elective		3
Elective		3
Elective		3
	Credits	12
	Total Credits	123-128

Biology Major with Emphasis in Microbiology

An example: Four year plan for **Biology Major with Emphasis in Microbiology**

120 credits necessary to graduate.

Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	4
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed (or Math 104)		3
	Credits	16
Spring		
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 260	Introductory Statistics	4
General Ed		3
	Credits	16
Sophomore		
Fall		
BIOLOGY 323 & BIOLOGY 324 or BIOLOGY 322	Principles of Microbiology or Environmental Microbiology	4
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	4
WF 105	Research and Rhetoric	3
General Ed (or Math 202)		3
General Ed		3
	Credits	17
Spring		
BIOLOGY 303	Genetics	3
BIOLOGY 309	Evolutionary Biology	3
CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	4
General Ed		3
General Ed		3
	Credits	16
Junior		
Fall		
BIOLOGY 311	Plant Physiology (or BIOLOGY 346 in Spring, or Biology elective)	4
BIOLOGY 402	Advanced Microbiology	4
General Ed		3
Elective		3-4
Elective		3-4
	Credits	17-19

Spring		
BIOLOGY 306	Principles of Ecology	4
Biology Elective		3-4
General Ed		3
Elective		3-4
Elective		3-4
Credits		16-19
Senior		
Fall		
BIOLOGY 490	Biology Seminar (Fall or Spring)	1
BIOLOGY 498 or BIOLOGY 497	Independent Study (recommended) or Internship	1-4
General Ed		3
Biology Elective		3-4
Elective		3-4
Elective		3-4
Credits		14-20
Spring		
Biology Elective		3-4
Elective		3-4
Elective		3-4
Elective		3-4
Credits		12-16
Total Credits		124-139

Biology major with Emphasis in Pre-Veterinary

An example: Four year plan for **Biology Major with Emphasis in Pre-Veterinary**
120 credits necessary to graduate.

Plan is a representation and categories of classes can be switched. Check with your advisor.

Course	Title	Credits
Freshman		
Fall		
BIOLOGY 203 & BIOLOGY 204	Principles of Biology: Organisms and Evolution and Principles of Biology Lab: Organisms and Evolution	4
CHEM 207	Laboratory Safety	1
CHEM 211 & CHEM 213	Principles of Chemistry I and Principles of Chemistry I Laboratory	5
First Year Seminar		3
General Ed (or Math 104)		3
Credits		16
Spring		
BIOLOGY 201 & BIOLOGY 202	Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes	4
CHEM 212 & CHEM 214	Principles of Chemistry II and Principles of Chemistry II Laboratory	5
MATH 260	Introductory Statistics	4
General Ed (or Physics)		3
Credits		16
Sophomore		
Fall		
BIOLOGY 303	Genetics	3
CHEM 302 & CHEM 304	Organic Chemistry I and Organic Chemistry Laboratory I	4
WF 105	Research and Rhetoric	3
General Ed (or Physics)		3
General Ed		3
Credits		16
Spring		
BIOLOGY 307 & BIOLOGY 308	Cell Biology and Cell Biology Laboratory	4
BIOLOGY 309	Evolutionary Biology	3

CHEM 303 & CHEM 305	Organic Chemistry II and Organic Chemistry Laboratory II	4
General Ed (or Physics)		3
General Ed		3
Credits		17
Junior		
Fall		
BIOLOGY 306	Principles of Ecology	4
CHEM 330	Biochemistry	3
PHYSICS 103 or PHYSICS 201	Fundamentals of Physics I or Principles of Physics I	4
General Ed		3
Elective		3-4
Credits		17-18
Spring		
BIOLOGY 346	Comparative Physiology	3
PHYSICS 104 or PHYSICS 202	Fundamentals of Physics II or Principles of Physics II	4
Biology Elective		3-4
General Ed		3
Elective		3-4
Credits		16-18
Senior		
Fall		
BIOLOGY 490	Biology Seminar (Fall or Spring)	1
BIOLOGY 498 or BIOLOGY 497	Independent Study (recommended) or Internship	1-4
Biology Elective		3-4
General Ed		3
Elective		3-4
Elective		3-4
Credits		14-20
Spring		
Biology Elective		3-4
Elective		3-4
Elective		3-4
Elective		3-4
Credits		12-16
Total Credits		124-137