

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 Aquaculture Curriculum Guide Example
- Biology Major with Emphasis in Aquatic Ecology and Fisheries Curriculum Guide Example
- Biology Major with Emphasis in Ecology & Conservation Biology Curriculum Guide Example
- Biology Major with Emphasis in Cell/Molecular Biology Curriculum Guide Example
- Biology Major with Emphasis in Biology for Educators 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. Assumes an 18-credit interdisciplinary minor.

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

| Course | Title | Credits |
|------------------------------|--|-----------|
| Freshman | | |
| Fall | | |
| BIOLOGY 201 & BIOLOGY 202 | Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes | 4 |
| CHEM 211 & CHEM 213 | Principles of Chemistry I and Principles of Chemistry I Laboratory | 5 |
| First Year Seminar | | 3 |
| General Ed | | 3 |
| | Credits | 15 |
| Spring | | |
| BIOLOGY 203 & BIOLOGY 204 | Principles of Biology: Organisms, Ecology, and Evolution and Principles of Biology Lab: Organisms, Ecology, 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 / Core Minor | | 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 / Core Minor | | 3 |
| General Ed | | 3 |
| | Credits | 17 |
| Spring | | |
| BIOLOGY 303 | Genetics | 3 |
| BIOLOGY 309 | Evolutionary Biology | 3 |
| General Ed | | 3 |
| General Ed | | 3 |

| | | |
|-------------------------------|------------------------------------|----------------|
| Core Minor | | 3 |
| | Credits | 15 |
| Junior | | |
| Fall | | |
| BIOLOGY 306 | Principles of Ecology | 4 |
| General Ed | | 3 |
| Biology Elective | | 3-4 |
| Biology Elective | | 3-4 |
| Elective / Minor | | 3 |
| | Credits | 16-18 |
| Spring | | |
| BIOLOGY 346 | Comparative Physiology | 3 |
| General Ed | | 3 |
| Biology Elective | | 3-4 |
| Biology/Minor Elective | | 3-4 |
| Elective | | 3 |
| | Credits | 15-17 |
| Senior | | |
| Fall | | |
| BIOLOGY 490 | Biology Seminar (fall or spring) | 1 |
| BIOLOGY 498 or BIOLOGY 497 | Independent Study or Internship | 2-3 |
| General Ed | | 3 |
| Biology Elective | | 3 |
| Elective for Minor | | 3 |
| Elective | | 3 |
| | Credits | 15-16 |
| Spring | | |
| BIOLOGY 490 | Biology Seminar (fall or spring) | 1 |
| Biology Elective | | 3-4 |
| Elective for Minor | | 3-4 |
| Elective | | 3-4 |
| Elective | | 3-4 |
| | Credits | 13-17 |
| | Total Credits | 122-131 |

Biology Major with Emphasis in Aquaculture

| Course | Title | Credits |
|--------------------|--|-----------|
| Freshman | | |
| Fall | | |
| BIOLOGY 201 | Principles of Biology: Cellular and Molecular Processes | 3 |
| BIOLOGY 202 | Principles of Biology Lab: Cellular and Molecular Processes | 1 |
| CHEM 211 | Principles of Chemistry I | 4 |
| CHEM 213 | Principles of Chemistry I Laboratory | 1 |
| First Year Seminar | | 3 |
| General Ed | | 3 |
| | Credits | 15 |
| Spring | | |
| BIOLOGY 203 | Principles of Biology: Organisms, Ecology, and Evolution | 3 |
| BIOLOGY 204 | Principles of Biology Lab: Organisms, Ecology, and Evolution | 1 |
| 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 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 |
| Spring | | |
| BIOLOGY 306 | Principles of Ecology | 4 |
| BIOLOGY 307 & BIOLOGY 308 | Cell Biology and Cell Biology Laboratory | 4 |
| BIOLOGY 323 & BIOLOGY 324 | Principles of Microbiology and Principles of Microbiology Laboratory | 4 |
| BIOLOGY 309 | Evolutionary Biology | 3 |
| General Ed | | 3 |
| Credits | | 18 |
| Junior | | |
| Fall | | |
| BIOLOGY 469 | Conservation Biology | 4 |
| ENV SCI 403 or ENV SCI 401 | Limnology or Stream Ecology | 4 |
| BIOLOGY 360 | Early Life History of Fish | 3 |
| General Ed | | 3 |
| Credits | | 14 |
| 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 | | -4 |
| Major Elective | | 3-4 |
| Credits | | 10-15 |
| Total Credits | | 120-127 |

Biology Major with Emphasis in Aquatic Ecology & Fisheries

| Course | Title | Credits |
|-------------------------------|--|----------------|
| Freshman | | |
| Fall | | |
| BIOLOGY 201 | Principles of Biology: Cellular and Molecular Processes | 3 |
| BIOLOGY 202 | Principles of Biology Lab: Cellular and Molecular Processes | 1 |
| CHEM 211 | Principles of Chemistry I | 4 |
| CHEM 213 | Principles of Chemistry I Laboratory | 1 |
| CHEM 207 | Laboratory Safety | 1 |
| First Year Seminar | | 3 |
| General Ed | | 3 |
| | | Credits |
| | | 16 |
| Spring | | |
| BIOLOGY 203 | Principles of Biology: Organisms, Ecology, and Evolution | 3 |
| BIOLOGY 204 | Principles of Biology Lab: Organisms, Ecology, and Evolution | 1 |
| 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 | 3 |
| BIOLOGY 469 | Conservation Biology | 4 |
| ENV SCI 403 or ENV SCI 401 | Limnology or Stream Ecology | 4 |
| General Ed | | 3 |
| | | Credits |
| | | 14 |
| 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 | | 106-110 |

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. Assumes an 18-credit minor.

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

| Course | Title | Credits |
|------------------------------|--|-----------|
| Freshman | | |
| Fall | | |
| BIOLOGY 201 & BIOLOGY 202 | Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes | 4 |
| CHEM 211 & CHEM 213 | Principles of Chemistry I and Principles of Chemistry I Laboratory | 5 |
| First Year Seminar | | 3 |
| General Ed | | 3 |
| Credits | | 15 |
| Spring | | |
| BIOLOGY 203 & BIOLOGY 204 | Principles of Biology: Organisms, Ecology, and Evolution and Principles of Biology Lab: Organisms, Ecology, 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 / Core Minor | | 3 |
| Credits | | 16 |
| Sophomore | | |
| Fall | | |
| BIOLOGY 323 & BIOLOGY 324 | Principles of Microbiology and Principles of Microbiology Laboratory | 4 |
| MATH 202 | Calculus and Analytic Geometry I | 4 |
| WF 105 | Research and Rhetoric | 3 |
| General Ed | | 3 |
| Elective | | 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 307 & BIOLOGY 308 | Cell Biology and Cell Biology Laboratory | 4 |
| CHEM 302 & CHEM 304 | Organic Chemistry I and Organic Chemistry Laboratory I (or Bio- Organic in Spring) | 4 |
| General Ed | | 3 |
| | | Credits 15 |
| Spring | | |
| BIOLOGY 346 | Comparative Physiology | 3 |
| CHEM 330 & CHEM 301 | Biochemistry and Bio-Organic Chemistry Laboratory (or Organic I in Fall) | 4 |
| BIOLOGY 407 | | |
| General Ed | | 3 |
| Elective | | 3 |
| Elective | | 3 |
| | | Credits 16 |
| Senior | | |
| Fall | | |
| BIOLOGY 490 | Biology Seminar (fall or spring) | 1 |
| Elective | | 3 |
| General Ed | | 3 |
| Biology Elective | | 3 |
| Elective for Minor | | 3 |
| Elective | | 3 |
| | | Credits 16 |
| Spring | | |
| BIOLOGY 490 | Biology Seminar (fall or spring) | 1 |
| Biology Elective | | 3-4 |
| Elective for Minor | | 3-4 |
| Elective | | 3-4 |
| Elective | | 3-4 |
| | | Credits 13-17 |
| | | Total Credits 123-127 |

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. Assumes an 18-credit minor.

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

| Course | Title | Credits |
|--------------------|---|-------------------|
| Freshman | | |
| Fall | | |
| BIOLOGY 201 | Principles of Biology: Cellular and Molecular Processes | 3 |
| BIOLOGY 202 | Principles of Biology Lab: Cellular and Molecular Processes | 1 |
| CHEM 211 | Principles of Chemistry I | 4 |
| CHEM 213 | Principles of Chemistry I Laboratory | 1 |
| First Year Seminar | | 3 |
| General Ed | | 3 |
| | | Credits 15 |

| | | |
|----------------------------|--|----------------|
| Spring | | |
| BIOLOGY 203 | Principles of Biology: Organisms, Ecology, and Evolution | 3 |
| BIOLOGY 204 | Principles of Biology Lab: Organisms, Ecology, and Evolution | 1 |
| 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 307 & BIOLOGY 308 | Cell Biology and Cell Biology Laboratory | 4 |
| MATH 202 | Calculus and Analytic Geometry I | 4 |
| WF 105 | Research and Rhetoric | 3 |
| General Ed/Core Minor | | 3 |
| General Ed | | 3 |
| | | Credits |
| | | 17 |
| Spring | | |
| BIOLOGY 303 | Genetics | 3 |
| BIOLOGY 306 | Principles of Ecology | 4 |
| General Ed | | 3 |
| General Ed | | 3 |
| Core Minor | | 3 |
| | | Credits |
| | | 16 |
| Junior | | |
| Fall | | |
| BIOLOGY 323 & BIOLOGY 324 | Principles of Microbiology and Principles of Microbiology Laboratory | 4 |
| BIOLOGY 309 | Evolutionary Biology | 3 |
| BIOLOGY 469 | Conservation Biology | 4 |
| General Ed | | 3 |
| Elective / Minor | | 3 |
| | | Credits |
| | | 17 |
| Spring | | |
| General Ed | | 3 |
| Biology Elective | | 3-4 |
| Biology/Minor Elective | | 3-4 |
| Elective | | 3 |
| Elective | | 3 |
| | | Credits |
| | | 15-17 |
| Senior | | |
| Fall | | |
| BIOLOGY 490 | Biology Seminar (fall or spring) | 1 |
| BIOLOGY 498 or BIOLOGY 497 | Independent Study or Internship | 2-3 |
| General Ed | | 3 |
| Biology Elective | | 3 |
| Elective for Minor | | 3 |
| Elective | | 3 |
| | | Credits |
| | | 15-16 |
| Spring | | |
| BIOLOGY 490 | Biology Seminar (fall or spring) | 1 |
| Biology Elective | | 3-4 |
| Elective for Minor | | 3-4 |

| | |
|----------|------------------------------|
| Elective | 3-4 |
| Elective | 3-4 |
| | Credits 13-17 |
| | Total Credits 124-131 |

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. Assumes an 18-credit interdisciplinary minor.

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

| Course | Title | Credits |
|------------------------------|--|-----------|
| Freshman | | |
| Fall | | |
| BIOLOGY 201 & BIOLOGY 202 | Principles of Biology: Cellular and Molecular Processes and Principles of Biology Lab: Cellular and Molecular Processes | 4 |
| CHEM 211 & CHEM 213 | Principles of Chemistry I and Principles of Chemistry I Laboratory | 5 |
| First Year Seminar | | 3 |
| General Ed | | 3 |
| | Credits | 15 |
| Spring | | |
| BIOLOGY 203 & BIOLOGY 204 | Principles of Biology: Organisms, Ecology, and Evolution and Principles of Biology Lab: Organisms, Ecology, 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 / Core Minor | | 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 / Core Minor | | 3 |
| General Ed | | 3 |
| | Credits | 17 |
| Spring | | |
| BIOLOGY 303 | Genetics | 3 |
| BIOLOGY 309 | Evolutionary Biology | 3 |
| General Ed | | 3 |
| General Ed | | 3 |
| Core Minor | | 3 |
| | Credits | 15 |
| Junior | | |
| Fall | | |
| BIOLOGY 306 | Principles of Ecology | 4 |
| General Ed | | 3 |
| Biology Elective | | 3-4 |
| Biology Elective | | 3-4 |

| | | |
|-------------------------------|---|----------------------|
| Elective / Minor | | 3 |
| | | Credits |
| | | 16-18 |
| Spring | | |
| BIOLOGY 346 or BIOLOGY 311 | Comparative Physiology or Plant Physiology | 3-4 |
| General Ed | | 3 |
| Biology Elective | | 3-4 |
| Biology / Minor Elective | | 3-4 |
| 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 | | |
| BIOLOGY 490 | Biology Seminar (fall or spring) | 1 |
| Elective | | 3 |
| Elective | | 3 |
| Elective | | 3 |
| Elective | | 3 |
| | | Credits |
| | | 13 |
| | | Total Credits |
| | | 123-128 |