

FISHERIES AND AQUATIC BIOLOGY

Bachelor of Science (BS) - Biology

This degree map is based on the 2025-26 Academic Catalog and is subject to change. Students should meet with their academic advisor each semester and use Degree Works to monitor their individual progress toward degree completion. The time it takes to earn a degree will vary based on several factors including summer/winter enrollment, dual enrollment and number of courses successfully completed each semester. We recommend taking a minimum of 15 credits each fall and spring semester.

Sample 4-Year Plan

First Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 110 Principles of Biology 1	4	BIOL 111 Principles of Biology 2	4
General Education	3	MATH 150 Essentials of Calculus	3
Freshman Seminar	3	BIOL 112 Aquaculture	3
STAT 141 Intro to Statistics	3	General Education	3
BIOL 252 Watershed Ecology Techniques	3		
Semester Total	16	Semester Total	13
Second Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 301 Ecology	4	BIOL 453 Freshwater Entomology	3
BIOL 113 Applied Aquaculture	3	CHEM 122 General Chemistry 2	4
BIOL 201 Intro to Bio Research	3	BIOL 211 Cell Biology	4
CHEM 121 General Chemistry 1	4	EGGS 120 Physical Geology	3
Semester Total	14	Semester Total	14
Optional Summer Course: BIOL 498 Internship in Biology			3
Third Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 209 Genetics	3	BIOL 439 Hum Dim Fish Mngt	3
BIOL 433 Ichthyology	3	Free Elective	3
General Education	3	General Education	3
PHYS 208 Intro to Physics 1 or PHYS 211 General Physics 1	4	General Education	3
Free Elective	3		
Semester Total	13	Semester Total	12
Optional Summer Courses: Specific summer electives			6
Fourth Year			
Fall Courses	Credits	Spring Courses	Credits
BIOL 452 Freshwater Ecology	3	BIOL 438 Environmental Policy and Regulation	3
BIOL 435 Conservation Genetics	3	General Education	3
Free Elective	3	General Education	3
General Education	3	General Education	3
		Free Elective	2
Semester Total	15	Semester Total	14

Winter/Summer College - Optional

While not required, Winter and Summer sessions are offered each year and may help you stay on track or get ahead. You may take up to seven (7) credits during Winter College and up to 14 credits during Summer College.

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Curriculum Checklist

Directed General Education Requirements (15 credits)

- ___ BIOL 110 Principles of Biology 1 (4)
- ___ CHEM 121 General Chemistry 1 (4)^
- ___ PHYS 208 Intro to Physics I (4)^
- ___ STAT 141 Intro to Stats (3)

Biology Core Requirements (18 credits)

- ___ BIOL 111 Principles of Biology 2 (4)
- ___ BIOL 201 Intro to Bio Research (3)
- ___ BIOL 209 Genetics (3)*
- ___ BIOL 211 Cell Biology (4)*
- ___ BIOL 301 Ecology (4)*

Related Core Requirements (10 credits)

- ___ CHEM 122 General Chemistry 2 (4)*
- ___ MATH 150 Essentials of Calculus (3)^
- ___ EGGS 120 Physical Geology (3)

Electives (32 credits)

3cr from courses in skill development in environmental fields (Block A); 3cr from courses demonstrating practical application of knowledge (Block B), 6crs of organismal courses (Block C); 3crs from courses related to ecology/evolution (Block D); 3crs from courses related to conservation/biodiversity (Block E); Additional 14crs from any category (Blocks A, B, C, D, E, and F). Of all elective credits, at least 12cr must have a fisheries component (designated by #) and at least 9cr must have a field component. % Denotes field courses. A single course can meet both the fisheries and field requirements.

BLOCK A Skill Development

- ___ BIOL 438 Environ. Policy & Reg (3)#*
- ___ BIOL 439 Hum. Dim. Fish. Mgt. (3)#*
- ___ BIOL 443 Molecular Biology (3)*
- ___ BIOL 444 Molecular Bio Lab (1)*
- ___ BIOL 446 Immunology (3)*
- ___ BIOL 486 Anal & Comm of Bio Data (3)*
- ___ BIOL 489 Special Topics (3)*

BLOCK B Practical Application

- ___ BIOL 493 Undergrad Res in Bio (1-6cr)*
- ___ BIOL 498 Internship in Biology (3-6cr)*
- ___ BIOL 440 Mgt of Sm Impound (3)#%* (Summer coursework)
- ___ BIOL 441 Mgt of Lg Impound (3)#%* (Summer coursework)
- ___ BIOL 113 Applied Aquaculture (3)#

BLOCK C Organismal Courses

- ___ BIOL 206 Botany (3)*
- ___ BIOL 207 Zoology (3)
- ___ BIOL 213 Intro to Parasitology (3)
- ___ BIOL 314 Comp. Bio of Invertebrates (3)*
- ___ BIOL 315 Comp. Vert. Anatomy (3)*
- ___ BIOL 340 Microbiology (3)*
- ___ BIOL 350 Plant Pathology (3)*
- ___ BIOL 400 Dendrology (3)%*
- ___ BIOL 401 Entomology (3)%*
- ___ BIOL 431 Mycology (3)%*
- ___ BIOL 432 Ornithology (3)%*
- ___ BIOL 433 Ichthyology (3)#%*
- ___ BIOL 434 Herpetology (3)%*
- ___ BIOL 453 Freshwater Entomology (3)#%*
- ___ BIOL 454 Algae of Freshwater Eco. (3)#%*
- ___ BIOL 460 Plants, Animals, Nat, His, of PA (3)%*
- ___ BIOL 473 Environmental Physiology (3)*
- ___ BIOL 477 Plant Physiology (3)*

BLOCK D Ecology/Evolution

- ___ BIOL 430 Evolution (3)*
- ___ BIOL 450 Developmental Biology (3)*
- ___ BIOL 452 Freshwater Ecology (3)#%*
- ___ BIOL 455 Community Ecology (3)%*
- ___ BIOL 461 Animal Behavior (3)*

BLOCK E Conservation/Biodiversity

- ___ BIOL 263 Field Botany (3)%*
- ___ BIOL 419 Ecosystems (3)%*
- ___ BIOL 420 Global Change Biology (3)*
- ___ BIOL 435 Conservation Genetics (3)*
- ___ BIOL 451 Conservation Biology (3)*
- ___ BIOL 456 Environmental Toxicology (3)*
- ___ BIOL 212 Aquaculture (3)#

BLOCK F Free Electives (14crs)

Any course in Blocks A, B, C, D, and E

- ___ BIOL _____
- ___ BIOL _____
- ___ BIOL _____
- ___ BIOL _____

OR choose any course below:

- ___ BIOL 208 Human Genetics (3)*
- ___ BIOL 210 Genetics Lab (3)*
- ___ BIOL 252 Watershed Ecol Techniques (3) #%
- ___ BIOL 337 Basic Virology (3)*
- ___ BIOL 442 Advanced Virology (3)*
- ___ BIOL 448 Advanced Parasitology (3)*

^ Enrollment in course is contingent on an ALEKS math placement score >61 or successful completion of MATH118 College Algebra with a grade of C or better.

Note: Progression through the sequence of all chemistry courses requires achievement of a minimum grade of C in pre-requisite courses.

General Education Requirements (45 credits)

Note: Some requirements may be fulfilled by coursework in your major program including directed Gen Ed courses noted below

- Foundations (15 credits)
 - STAT 141 (3)
- Interconnections (9 credits)
- Citizenship & Responsibility (6 credits from at least two goals)
- Natural World & Technologies (9 credits)
 - BIOL110 Principles of Biology I (4)
 - CHEM 121 General Chemistry 1 (4)^
 - PHYS208 Intro to Physics I (4)^
- Creativity & Expression (6 credits)

Degree Requirements

All students must obtain a minimum of 120 credits (A minimum of 42 credits must be advanced course work), complete all General Education requirements, and all requirements for the selected major. Meet with your advisor and consult Degree Works to monitor your progress and for all graduation requirements.

A minimum GPA of 2.0 in the major and overall are required.

*Denotes advanced coursework

Students must take a minimum of 42 credits of advanced coursework. Advanced coursework can be met in major courses, minor courses, free elective courses, and general education courses. Courses that meet this requirement are designated in Banner.