

Department of Biological Sciences

Bachelor of Science

Major in Biology - Environmental Biology Concentration

I. General Information

- A. A minimum of 45 hours of biological sciences is required. You must satisfy all biology core and concentration requirements plus 23-25 hours of physical sciences/math/statistics.
- B. General Education requirements must be fulfilled as outlined in the class schedule published each term for all bachelor degrees in the College of Liberal Arts and Sciences.
- C. At least 45 hours of college credit must be earned in courses numbered 300 or above and you must have a cumulative GPA of 2.0 to meet university graduation requirements.
- D. You must have minimum GPA of 2.2 for all required biology courses to graduate as a biology major.
- E. A basic understanding of mathematics, physical sciences, and evolution is essential to all biologists. It is strongly recommended that courses in these areas, including GB 725 (Evolution), be elected in addition to those required.
- F. You are expected to confer with your academic advisor each term to review progress towards graduation and to discuss the biology courses you should take the next term. In consultation with your advisor, you must prepare and submit an undergraduate application for degree during the junior year. This contract must be signed by the student, advisor, and department chair.
- G. Note that Chemistry I is a prerequisite for MC 316-317, and MA 110 is a prerequisite for GB 425. Note also that PY 520 does not meet the General Education requirement for math, and that PH 140-141 is offered only in the fall. Some required courses are taught either during alternate terms or years, so you should plan ahead to avoid delaying graduation.
- H. Persons seeking certification as fisheries scientists by the American Fisheries Society must complete a minimum of 4 courses in aquatic and fisheries science, 2 courses in calculus/statistics, 9 hours of communication, and 6 hours of human dimensions. See details at www.fisheries.org
- I. Persons seeking certification as Associate Wildlife Biologists by The Wildlife Society may do so by supplementing the required coursework in the Environmental Biology concentration with necessary electives. For details, consult with your advisor and see www.wildlife.org/professional/index.cfm
- J. It is recommended that you enroll in EB 409PB - Environmental Biology Project during the junior year and no later than the first semester of the senior year. To enroll in EB 409PB, you must have written approval of the faculty member who will supervise your research.

(Updated October 16, 2007)

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II. Requirements

A. <u>Biology core</u>	<u>Hours</u>
GB 140-141 Principles of Biology and Lab.....	4
BO 212-213 Biology of Plants and Lab.....	4
ZO 214-215 Biology of Animals and Lab.....	4
MC 316-317 Microbiology and Lab.....	4
GB 425 General Genetics.....	3
EB 480 Principles of Ecology.....	3
	<u>22</u>
B. <u>Concentration courses</u>	
EB 481 ^H Field Ecology.....	2
EB 409PB ^{I*} Environmental Biology Project.....	2
BO 542-543 Plant Taxonomy and Lab.....	4
ZO 556-557 Natural History of Vertebrates and Lab.....	4
One invertebrate course.....	4
ZO 546-547 Invertebrate Zoology and Lab	OR
ZO 590-591 Parasitology and Lab	OR
ZO 440-441 Entomology and Lab	
UPPER DIVISION ELECTIVES IN BIOLOGY	
(Must cover at least two of the three sub-areas, D, E, and F).....	<u>7</u>
	<u>23</u>
C. <u>Physical sciences, math, and statistics requirements</u>	
CH 123-124 Chemistry I and Lab.....	5
CH 126-127 Chemistry II and Lab.....	5
CH 370-371 General Organic Chemistry and Lab.....	5
PH 140-141 College Physics I and Lab.....	5
One course in math or statistics.....	<u>3-5</u>
MA 165 Basic Calculus	OR
MA 161 Calculus I	OR
PY 520 Statistics I	OR
GB750 Research Design and Analysis	
	23-25
D. <u>Aquatic ecology electives</u>	
GB 510-511 ^H Aquatic Biology and Lab.....	4
EB 496 ^I Stream Ecology and Lab.....	4
ZO 472-473 ^H Ichthyology and Lab.....	4
E. <u>Terrestrial ecology electives</u>	
BO 338-339 Trees and Shrubs and Lab.....	3
BO 765-766 ^{HH} Grasses and Lab.....	4
GB 539 ^H Soil Science and Lab.....	4
ZO 459 Herpetology and Lab.....	4
ZO 480-481 ^H Ornithology and Lab.....	4
ZO 490-491 ^H Mammalogy and Lab.....	4
F. <u>Applied ecology electives</u>	
BO 748 ^I Range Management and Lab.....	4
EB 536-537 ^I Wildlife Management and Lab.....	4
EB 353 Environmental Biology.....	3
EB 351 Introduction to Geospatial Analysis.....	3
EB 538 ^I Wildlife Management Policies.....	2
EB 710 ^I Conservation Biology.....	3
EB 459 ^I Biogeography.....	3
ZO 530-531 ^H Animal Behavior and Lab.....	4
ZO 762 ^{HH} Environmental Physiology.....	3
EB 474-475 ^I Fisheries Management and Lab.....	4

*Should enroll in junior year and not later than senior year. Advisor approval required.

^HEB 480 (Ecology) required as a co-requisite or prerequisite.

^IEB 480 (Ecology) required as a prerequisite.

EB 480 (Ecology) required as a co-requisite or prerequisite, or permission of instructor.

For more information, see the ESU Undergraduate Catalog, and the Department of Biological Sciences website
<http://biology.emporia.edu>