

2009-2010

B.S. in Biology

College of Sciences and Technology

What Is the Study of Biology?

Biology is the study of living things, an academic endeavor with a basic research focus on seeking answers to questions rather than on applying biological knowledge to solve problems. As scientists, Biologists have two prime motivations: (1) intellectual curiosity about biological systems, and (2) the philosophy that creating and disseminating reliable knowledge has intrinsic worth. Thus, we intend for our intensive academic program in Biology to stimulate our students' curiosity and appetite for life-long learning about Biology.

The Biology curriculum provides an effective combination of knowledge in areas that students can apply to many careers. The supporting courses for the Biology major in Math, Physics, and Chemistry, along with the core curriculum at the 200-level and 300-level, plus one 400-level course in Evolution, fulfill the goals of a liberal arts education. But the in-depth 400-level courses are where students not only pursue interests more specifically, but begin to integrate and apply knowledge, and develop the skills and abilities to pursue careers of their choosing.

Hence, the integrated conceptual foundation in Biology, the critical thinking skills, quantitative problem-solving abilities, leadership with team-building skills, and scientific research skills students obtain from lecture and laboratory courses in the Biology B.S. curriculum ultimately are critical for post-baccalaureate studies and future job performance. We expect that students who graduate with a B.S. or B.A. in Biology can apply their learning to a variety of jobs and across careers.

Why Should I Consider This Major?

Do you want to know all about the life that you see, hear, touch, taste and smell and how this affects us? Do you want to work outside in the field or in a laboratory? Are you enthusiastic, intelligent, open-minded, and precise? Are you willing to work hard and challenge yourself intellectually? Consider a biology major!

A biology major will allow you to learn more about one of these areas: Botany (EEO), Zoology (EEO), Cellular Biology, Ecology (EEO), Marine Biology, or provide you with the background for Secondary Teaching of Biology.

How to Declare:

Declare your Biology major as soon as you think you may want to major in biology. Contact Kim Kolb Ayre in the Biology Department Office, BI 315 for details. Freshmen, your first quarter is not too soon.

Mid-Program Checkpoint:

Students intending to complete a Bachelor's of Science degree in Biology within four years should complete the following courses by the start of their junior year. Students are expected to follow all prerequisite requirements for courses and seek early departmental advisement.

Coursework:

CHEM 121, 122, 123

BIOL 204, 205, 206

MATH 124

Other Activities:

Attend Biology Seminars.

Contact Information:

Biology Department Website:
<http://www.biol.wvu.edu/biology/>

Department Chair:
Dr. Joann Otto
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Undergraduate Advisor:
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Sample Careers:

Botanist
Ecologist
Biology Educator
Marine Scientist
Biotechnologist
Bioinformatics
Genetic Counseling
Geneticist
Taxonomist
Curator
Naturalist
Medical Doctor
Dentist



B.S. in Biology Major Requirements: 90-95 Credits

Supporting Courses: 37* required credits

CHEM 121, 122, 123 General Chemistry I, II, III (5, 5, 4)

Or CHEM 125, 126 & 225 General Chemistry Honors (5 each)

CHEM 351, 352 Organic Chemistry (4, 4)

[CHEM 353 Organic Chemistry (3) & CHEM 354 Organic Chemistry Lab I (2) recommended]

PHYS 114, 115 Principles of Physics I, II (5, 5)

[PHYS 116 Principles of Physics III (5) recommended]

Or PHYS 121, 122, 123 Physics with Calculus I, II, Electricity & Magnetism

MATH 124 Calculus and Analytic Geometry (5)

Or MATH 134 Honors Calculus I (5)

[MATH 125 Calculus and Analytic Geometry (5)

Or Math 135 Honors Calculus II (5) recommended]

*For Marine Biology:

GEOL 211 Physical Geology (5)

[GEOL 212 Historic Geology (4) recommended]

Required Biology Courses: 32-33 credits

BIOL 204 Introduction to Evolution, Ecology and Biodiversity (4)

BIOL 205 Introduction to Cellular and Molecular Biology (5)

BIOL 206 Introduction to Organismal Biology (5)

BIOL 321 Genetics (4)

BIOL 323 Cellular and Molecular Biology (4)

BIOL 325 Ecology (3)

BIOL 340 Biometrics*

BIOL 432 Evolutionary Biology (4)

*For Cellular Emphasis only: MATH 240 Statistics (4)

Depth Requirements: 12-19 credits

Depth Requirements differ based on your choice of Emphasis; see advisor for details.

Students must be admitted to Phase II

EMPHASES:

- Cell Emphasis (90 total credits)
- Ecology, Evolution and Organismal Biology (EEO) (90 total credits)
- Marine Emphasis (95 total credits)
- General Emphasis (90 total credits)
- Secondary Teaching Emphasis - Biology Endorsement (90 total credits plus certification program)

Elective Requirements: 0-7 credits to make a total of 53 credits when combined with the basic, breadth and depth courses.

Other Biology Options:

B.A. Biology (74 credits)

B.A. Anthropology/Biology (89)

B.A. Behavioral Neuroscience (110-111 credits)

B.S. Biology/Anthropology (101-104 credits)

B.S. Biology/Mathematics (104-105 credits)

B.S. Cellular and Molecular Biology/Biochemistry (106 credits)

B.A.Ed. Biology/Chemistry—Secondary (103-107 credits plus certification program)

Minor in Biology (43 credits)

These courses are required (or advised) for this major and may be used to satisfy GUR or Writing Proficiency requirements.

QSR: MATH 124 or 134

LSCI: CHEM 121, 122, 123;

BIOL 204, 205, 206;

PHYS 114, 115, 116 or 121, 122, 123

WP: Three Writing Proficiency points are required for graduation (they are noted as WP1, WP2, and WP3).

Check [Classfinder](#) or [Online Timetable](#) for departmental offerings each quarter.