BIOLOGY MAJOR: MOLECULAR AND CELLULAR BIOLOGY TRACK

15 course units, including:

BIO 1204	Integrated Concepts of Biology: Molecules and Cells
BIO 1206	Integrated Concepts of Biology: Organisms and Ecosystems
BIO 2042	Biologists' Toolkit
BIO 4432	Capstone in Biology

6 biology courses, at least 3 from the following:

BIO 3026	Developmental Biology
BIO 3034	Molecular Genetics of Eukaryotes
BIO 3044	Molecular Genetics of Bacteria
BIO 3046	Microbiology
BIO 3056	Bacterial Pathogenesis
BIO 4144	Immunology
BIO 4304	Advanced Cell Biology
MATH 1304	Calculus I
PHYS 2115	University Physics I

BIOLOGY MINOR:

$6^{1}/_{2}$ course units, including:

BIO 1204	Integrated Concepts of Biology: Molecules and Cells
BIO 1206	Integrated Concepts of Biology: Organisms and Ecosystems
BIO 2042	Biologist's Toolkit

3 additional biology courses, at least 1 from the 3000-level or above

Allied Course (1 of the following):

CHEM 1004	Chemistry in Society
CHEM 1055	Principles of Chemistry I
CS 1124	Foundations of Computer Science
MATH 1144	Elementary Statistics
PHYS 1014	Conceptual Physics

BIOLOGY

TRANSYLVANIA UNIVERSITY

Office of Admissions
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TRANSYLVANIA UNIVERSITY

ADM1391-0116

ABOUT THE MAJOR:

The biology program prepares students for traditional fields of study as well as emerging fields such as biophysics, bioinformatics and molecular genetics.

In our small lab sessions, you'll be encouraged to sharpen your investigative skills by undertaking independent research. You'll gain first-hand knowledge of subjects through field trips to destinations such as Kentucky's Red River Gorge and Daniel Boone National Forest. May term travel courses have enabled students to study invertebrates in Florida, tropical ecology in Belize and Hawaii, native plants and animals in the forests of eastern Kentucky and public health issues in the Philippines.

The science of biology plays a central role in important issues like global climate change, stem cell research and ecological restoration, as well as global health issues such as avian influenza, tuberculosis and HIV/AIDS. Transylvania's biology graduates actively engage these issues, both as researchers in the laboratory and as medical personnel on the front lines.

Transylvania students have a variety of opportunities to conduct research, both independently and with professors. Research projects may receive funding from the university or from outside organizations such as the National Institutes of Health. Current faculty research interests include evolution and behavioral ecology of cannibalism, physiological and other correlates of avian personality and ecology of non-native plant invasions.

FACULTY:

Belinda Sly, Program Director
Associate Professor of Biology
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Sarah Bray, Associate Professor of Biology
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Paul Duffin, Assistant Professor of Biology
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Rebecca Fox, Associate Professor of Biology
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Brianna Hartman, Adjunct Professor of Biology
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James Wagner, Professor of Biology
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COURSES OF SPECIAL INTEREST:

Molecular Genetics
Entomology
Animal Behavior
Neurobiology
Public Health
Immunology
Tropical Ecology
Field Botany

WHERE OUR GRADUATES HAVE WORKED:

National Oceanic and Atmospheric Administration
Smithsonian Institution
Mount Sinai Hospital
National Rehabilitation Hospital in Washington, D.C.
Boston Medical Center

WHERE OUR GRADUATES HAVE STUDIED:

Harvard University (doctoral program in maternal and child health)
Texas A&M Veterinary School
University of Kentucky Dental School
University of North Carolina–Chapel Hill

POSSIBLE CAREER OPTIONS:

Environmental protection agent
Medical doctor
Research scientist
Teacher

COURSES:

BIOLOGY MAJOR:

15 course units, including:

BIO 1204	Integrated Concepts of Biology: Molecules and Cells
BIO 1206	Integrated Concepts of Biology: Organisms and Ecosystems
BIO 2042	Biologist's Toolkit
BIO 4432	Capstone in Biology

9 additional electives, including:
6 Biology courses at the 3000-level or above
Remaining 3 electives may come from biology, chemistry, computer science, environmental studies, mathematics or physics excluding BIO 1164, BIO 2014 and BIO 2104.

Allied Courses

CHEM 1055	Principles of Chemistry I
CHEM 1065	Principles of Chemistry II
MATH 1304	Calculus I *or*
MATH 1144	Elementary Statistics

To become certified to teach biology, students must complete the Biology Major and the Education Minor for Secondary Certification.

BIOLOGY MAJOR: ECOLOGY, EVOLUTION, AND BEHAVIOR TRACK

15 course units, including:

BIO 1204	Integrated Concepts of Biology: Molecules and Cells
BIO 1206	Integrated Concepts of Biology: Organisms and Ecosystems
BIO 2042	Biologists' Toolkit
BIO 3204	Animal Behavior
BIO 3314	Evolution
BIO 4144	Ecology
BIO 4432	Capstone in Biology

3 courses from the following:

BIO 2124	Field Botany
BIO 2144	Tropical Ecology
BIO 2164	Ornithology
BIO 2504	Entomology
BIO 3016	Comparative Vertebrate Anatomy
BIO 3065	Animal Physiology

3 electives from BIO, CHEM, CS, ENVS, MATH or PHYS

Continued on back

"Our biology program provides foundational courses useful for a number of disciplines as well as diverse specialized courses such as Biology of Climate Change, Bacterial Pathogenesis and the Natural History of Kentucky. We stress content as well as critical thinking, problem-solving and data analysis."

Belinda Sly, associate professor of biology