

Biology

Requirements for a B.S. Major: 64 units

The Biology department offers four options leading to a Bachelor of Science degree in biology – a general track providing a comprehensive introduction to all areas of biology, and three more specialized tracks, each emphasizing one of the following: 1) cellular and molecular biology; 2) ecology, evolution and natural history, 3) genomics and bioinformatics. Each track comprises lower-division courses in biology, mathematics and physical sciences, plus a variety of required and elective upper-division courses.

Ecology, Evolution and Natural History Track: 64 units

Supporting Science Courses: 20 units

CHM 005, 006 General Chemistry I, II (4,4)

MA 005 Statistics (4)

Additional Courses in physical or other cognate sciences (8) to be selected from the following:

CHM 101, 102 Organic Chemistry I, II (4,4)

ENV 001 Introduction to Environmental Studies (4)

MA 009, 010 Calculus I, II (4,4)

MA 015 Discrete Mathematics (4)

PHY 011, 013 Physics for Life Sciences I, II (4,4)

PHY 021, 023 General Physics I, II (4,4)

Other environmental courses offered at Westmont field programs (*e.g.* Environmental Chemistry, Field Geology, Land Resources, Sustainable Development, Environmental Sociology, Land Stewardship Ecology)

Required Biology Courses: 38-41 units

BIO 005, 006 General Biology I, II (4,4)

BIO 114 Genetics (4)

BIO 125 General Ecology (4)

BIO 131 Evolution (4)

One of the following courses: (4)

BIO 102 Physiology (4)

BIO 110 Microbiology (4)

BIO 128 Comparative and Environmental Physiology (4)

BIO 132 Molecular Biology (4)

BIO 142 Marine Mammal Ecophysiology (4)

Molecular Tools for the Field Biologist (Au Sable)

Three Field Courses: (12)

At least one course must be taken from each of the following three areas. Courses listed include Westmont courses that would meet the requirement, as well as representative courses of those offered at field stations with which our program has affiliation. No more than two upper division courses may be taken for credit toward the major at off-campus field programs.

1) Plant Systematics or Field Studies

BIO 151 Plant Classification (4)

Woody Plants, Field Botany or Forest Ecology (Au Sable)

2) Animal Systematics or Field Studies

BIO 108 Animal Diversity (4)

BIO 141 Ornithology/Herpetology (4)

BIO 142 Marine Mammal Ecophysiology (4)

Marine Mammals, Animal Ecology, Field Ecology of Birds, *or* Insect Ecology (Au Sable)

3) Upper Division Field Course

BIO 104 Marine Biology (4)

BIO 120 Behavioral Ecology (4)

BIO 129 Tropical Ecology (4)

Aquatic Biology, Alpine Ecology, Conservation Biology, Restoration Ecology, Limnology, Ecological Agriculture (Au Sable), or other upper-division field courses, excluding those that satisfy the Plant or Animal Systematics courses listed above

Courses at a Biological Field Station

Two courses (but not more than two) for the major may be taken in residence at a biological field station.

One course from the following: (1-4)

BIO 191 Environmental Practicum (1)

BIO 195 Seminar in Biological Literature (1)

BIO 098/198 Research (1)

BIO 199 Major Honors (4)

One integrative course from the following: (1-4)

BIO 124 Biology, Values, and the Developing World (4)

BIO 196 Seminar in Bioethics (1)

BIO 197 Biology and Faith

Additional Courses chosen from the following for a total of 64 units: 4-9 units

Upper-division BIO

Upper-division CHM

MA 009, 010 Calculus I, II (4,4)

MA 015 Discrete Mathematics (4)

PSY 125 Behavioral Neuroscience (4)

No more than 2 units of Practicum: BIO 190, 191 or 192.

No more than 4 units Research: BIO 198 or CS 198