

Biology (BIOL)

Using evolution as its paradigm, the Biology Department provides a supportive, challenging, and stimulating environment in which students are able to acquire a strong foundation in biology. This foundation includes instruction, development of critical thinking skills, and training on cutting-edge equipment to prepare students for transfer to four-year institutions or provide access to fulfilling careers in medical, nursing, radiological sciences and other biology-related areas. We also wish to promote natural history both locally and internationally.

Merritt College offers the following certificate program in Biology:

Natural History and Resources

- Certificate of Achievement
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Natural History and Resources Certificate of Achievement

DESCRIPTION



The Natural History and Resources Certificate of Achievement educates students on the biodiversity of the Bay Area and beyond and how that biodiversity interacts with humans in different ecosystems and scales. Coursework provides a foundation on local flora, fauna, and geology, as well as an ecosystem-driven approach to explore natural resources such as water, forests, and ecosystem services. Graduates of the program can expect to be prepared for entry-level employment in the field of natural resources and the environment.

In the Natural History and Resources Program, students will...

- Discover the vast diversity of animals, plants, fungi, and microscopic organisms through courses in botany, ornithology, entomology, herpetology, and more.
- Learn the principles of biogeography and the interplay between biology and geology.
- Participate in field trips and field courses around the Bay Area and beyond.

CAREER OPPORTUNITIES

The Natural History and Resources Certificate of Achievement prepares students for careers focused on organismal diversity and ecosystem functioning, specifically the positions of biological technician, ecological technician, ecological restoration technician, nature interpreter, field technician, biological consultant, and environmental consultant working for natural resource government agencies, environmental non-profits, and environmental consulting firms.

PROGRAM LEARNING OUTCOMES

Upon successful completion of this program, students will be able to:

1. Provide an overview of the form and function of local biodiversity (flora and fauna) and understand the ecological roles of these organisms.
2. Demonstrate an understanding of the various ecosystems and natural resources in the Bay Area and their importance.
3. Demonstrate practical skills, such as species identification, field documentation, and environmental impact report preparation, used by professionals in the field.

PROGRAM REQUIREMENTS

SUBJECT #	TITLE	UNITS
Major Core Courses		
BIOL 29	Introduction to Biodiversity	4
ENVMT 1	Environmental Careers	1
ENVMT 2	Introduction to Sustainable Environmental Systems	3
ENVMT 2L	Introduction to Sustainable Environmental Systems Lab	1
GEOG 1	Physical Geography	3
AFRAM 38	Environmental Racism and Justice	3
or		
ENVMT 12	Environmental Racism and Justice	3
Major Elective Courses		
<i>Select courses for a minimum of 9 units from the following:</i>		
ART 166	Beginning Botanical Drawing	2
BIOL 9	Marine Biology	4
BIOL 15	Environmental Biology	3
BIOL 60A	Natural History of the Bay Area: The Local Parks	0.5
BIOL 60B	Natural History of the Bay Area: Mt. Diablo State Park	0.5-3
BIOL 60C	Natural History of the Bay Area: Herpetology	2
BIOL 61E	Natural History of the Tide Pools of the Greater Bay Area	0.5
BIOL 61G	Natural History: Mammals of the Greater Bay Area	2
BIOL 61H	Natural History of the Bay Area: Butterflies and Moths	2
BIOL 61I	Natural History of the Bay Area: Bryophytes	2

TABLE CONTINUES ►

Natural History and Resources Certificate of Achievement

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SUBJECT #	TITLE	UNITS
BIOL 61K	Natural History of the Bay Area: Lichens	2
BIOL 62S	Natural History of the Islands of California	2
BIOL 80A	Raptors of Central California and the Bay Area	0.5
BIOL 80B	Bird Singing: The Ecology of Bird Songs and Identification by Ear	0.5
BIOL 80C	Fundamentals of Ornithology and Birding in Central California/Bay Area	0.5
BIOL 80D	Ecology of the California Condor	1.5
GEO 1	Introduction to Physical Geology	4
GEO 12	Environmental Geology	3
GEO 21	Bay Area Field Studies	1
LANHT 2 or	Plant Materials: Tree ID and Culture with Lab (Day)	3
LANHT 2E	Plant Materials: Tree ID and Culture with Lab (Evening)	3
LANHT 5A or	Plant Materials: Fall Native Plant ID and Culture with Lab (Day)	3
LANHT 5EA	Plant Materials: Fall Native Plant ID and Culture with Lab (Evening)	3
LANHT 5B or	Plant Materials: Spring Native Plant ID and Culture (Day)	3
LANHT 5EB	Plant Materials: Spring Native Plant ID and Culture (Day)	3
LANHT 10	Insect Pests	3
LANHT 16	Soil Management	3
LANHT 23	Plant Terminology	2.5
LANHT 45A	Mushroom Cultivation	2
LANHT 50	Plant Taxonomy	3
NATAM 76E	California Indian Ecology of the Central Coast	1.5
Interdisciplinary Elective Courses		
<i>Select one course for 2-4 units from the following:</i>		
COPE 476F	Occupational Work Experience in Environmental Management and Technology	1-4
ENVMT 5	Oakland Food Culture	3
ENVMT 8	Introduction to Outdoor Education	3
ENVMT 11	Sustainable Urban and Regional Planning	3
ENVMT 14	Environmental Impact Reports	2
ENVMT 35	Introduction to Urban Agroecology	3
ENVMT 40	From Tree to Sea: A Bay Area Environmental Cross Section	3
ENVMT 44	Introduction to Creek and Watershed Restoration	3
ENVMT 55	Principles of Conservation and Land Management	3
ENVMT 56	Management of Public Parks and Natural Resources	3
ENVMT 57	Park Operations Practice and Skills	4
LANHT 81	Arborist Equipment Fundamentals	2
Total Units		26

Natural History and Resources Certificate of Achievement**RECOMMENDED TWO-YEAR COURSE SEQUENCE**

Students can use the following pattern to complete a Natural History and Resources Certificate of Achievement. This is only one possible pattern. It maps a sequence of courses to help students complete their certificate, regardless of the semester they begin class. This map does not replace consulting with a counselor. Students are advised to meet with a counselor at least once each semester to develop their individual Student Education Plan (SEP) and plan for their educational goals.

SUBJECT #	TITLE	UNITS
1st Semester		
BIOL 29	Introduction to Biodiversity	4
GEOG 1	Physical Geography	3
1st Semester Units		7
2nd Semester		
ENVMT 2	Introduction to Sustainable Environmental Systems	3
ENVMT 2L	Introduction to Sustainable Environmental Systems Lab	1
Major Elective Course(s)		4
2nd Semester Units		8
3rd Semester		
ENVMT 1	Environmental Careers	1
ENVMT 12	Environmental Racism and Justice	3
or		
AFRAM 38	Environmental Racism and Justice	3
Major Elective Course(s)		2
Interdisciplinary Elective Course(s)		2
3rd Semester Units		8
4th Semester		
Major Elective Course(s)		3
4th Semester Units		3
Total Units		26