

Molecular Environmental Biology: Areas of Concentration

Area of Concentration Requirement: Select 12 units within ONE of the concentrations below. Up to 4 units of relevant independent or honors research may count toward this requirement. Area of concentration courses may not overlap with Upper Division Biology requirement courses.

1. ANIMAL HEALTH & BEHAVIOR

Anthro 135: Paleoethnobotany: Archaeological Methods and Laboratory Techniques [4]
ESPM C103 /IB C156: Principles of Conservation Biology [4] F Beissinger, Moritz
ESPM 106: American Wildlife: Identification and Conservation (3) F Barrett (includes a lab)
ESPM 110: Primate Ecology [3] Milton
ESPM 114: Wildlife Ecology (3) SP Brashares
ESPM 145: Arthropod-Borne Zoonotic Diseases: Basic Principles and Methods (2) SP, odd-numbered years. Lane
ESPM 146: Medical/Veterinary Entomology (3) SP, even-numbered years. Lane
ESPM 146L: Medical and Veterinary Entomology Laboratory (1) SP, even-numbered years. Lane
ESPM 186: Management of Grassland and Woodlands [4] F Huntsinger, Bartolome, Allen-Diaz
ESPM 188: Case Histories in Wildlife Management (2) SP
IB 104 & L: Natural History of the Vertebrates (3,2) SP McGuire
IB C143A /Psych C113: Biological Clocks: Physiology and Behavior (3)
IB C143B /Psych C116: Hormones and Behavior (3) SP Kriegsfeld
IB C144 /Psych C115B: Animal Behavior (4) F Caldwell
IB 146: Behavioral Ecology (3)
IB 148: Comparative Animal Physiology (3)
IB 184 & L: Morphology of the Vertebrate Skeleton (1,2)
IB 186: Evolution of Hominid Behavior [4]
Psych 121: Animal Cognition (3)

2. BIODIVERSITY

ESPM C103 /IB C156: Principles of Conservation Biology [4] F Beissinger, Moritz
ESPM 106: American Wildlife: Identification and Conservation [3] F Barrett (includes a lab)
ESPM 108A: Trees: Taxonomy, Growth and Structures (3) F Dodd (includes a lab)
ESPM 115B: Biology of Aquatic Insects [3] Offered odd-numbered years. F Resh
ESPM 132 & L: Spider Biology [4] SP Gillespie
ESPM 140: General Entomology (4) SP (includes a lab)
ESPM 147: Field Entomology: "Ants," "Beetles," and "Spiders" (1 unit each) SP. All three courses must be completed to equal one "lab course".
IB 102 & L: Introduction to California Plant Life [2, 2] SP Carlson
IB 103 & L: Invertebrate Zoology (3,2) SP, Patek
IB 104 & L: Natural History of the Vertebrates (3,2) SP, McGuire
IB 160: Evolution [4] F Padian
IB 166: Evolutionary Biogeography [4] SP Barnosky
IB 168 & L: Systematics of Vascular Plants (2,2)
IB 173 & L: Mammalogy [2, 3] SP, Lacey
IB 174 & L: Ornithology [2, 2]
IB 175 & L: Herpetology [2, 2] SP Mc Guire
IB 183: Evolution of the Vertebrates (3)
IB 183L: Laboratory in Vertebrate Evolution [1] Offered alternate years. SP
PB C102 & L / IB C101 & L: Diversity of Plants and Fungi (2,2)
PB 110 & L: Biology of Fungi (2,2)
PB 113: California Mushrooms (3) F (includes a lab)
PB C116 /MCB C116: Microbial Diversity (3) F
PB 120 & L Biology of Algae (2,2) SP

3. ECOLOGY

ESPM 102A: Resource Ecology (4)
ESPM C103 /IB C156: Principles of Conservation Biology (4) F Beissinger, Moritz
ESPM 110: Primate Ecology (4) Milton
ESPM C104/EEP C115: Modeling and Management of Biological Resources (4)
ESPM C107/IB C158/Geog C142/: Bio. & Geomorphol. Trop. Islands (13) F, admission by application only *
ESPM 111: Ecosystem Ecology (3) SP Silver
ESPM 112: Microbial Ecology (3) SP Almeida
ESPM 113: Insect Ecology (2) SP Welter
ESPM 114: Wildlife Ecology (3) SP Brashares
ESPM 115B: Aquatic Insects (3) Resh
ESPM 116B: Range Ecology (3) F
ESPM 116C: Tropical Forest Ecology (3) SP Silver
ESPM 117: Urban Garden Ecosystems (4) F
ESPM 118: Agricultural Ecology (3) F Altieri
ESPM 119: Chemical Ecology (2) F Kubo
ESPM 131: Soil Microbiology (3) SP Pallud
ESPM 134: Fire, Insects, and Diseases in Forest Ecosystems (3) SP Bruns
ESPM 146 & L: Medical/Veterinary Entomology (3,1)
ESPM 147: Field Entomology: "Ants," "Beetles," and "Spiders" (1 unit each) SP. Taking all three courses = one lab course.
ESPM C149 /IB C149: Molecular Ecology (4) Offered alternate years. SP Mortiz, Palsboll, Roderick
ESPM 172: Photogrammetry and Remote Sensing (3) F Gong
ESPM C180: Air Pollution (3) (F) Goldstein
ESPM 181: Wildland Fire Science (3) SP Stephens
ESPM 188: Case Histories in Wildlife Management (2) SP Barrett
PB 180: Environmental Plant Biology (2) SP Terry
CE 113N: Ecological Engineering for Water Quality Improvement (3) F Nelson
IB 102 & L: Introduction to California Plant Life [2, 2] SP Carlson
IB 151 (3) Physiological Ecology of Plants
IB 153: Population and Community Ecology (3) F Ackerly
IB 154 & L: Plant Ecology (2,2)

* For the 13-unit ESPM C107: Biology & Geomorphology of Tropical Islands, a maximum of 4 units can be applied to an area of concentration. This course can also satisfy for one laboratory course. Students can petition for having some units fulfill additional requirements.

4. ENVIRONMENT & HUMAN HEALTH

ESPM C138/ (PB)C114: Introduction to Comparative Virology (4) SP Volkman, Jackson
ESPM 145: Arthropod-Borne Zoonotic Diseases: Basic Principles and Methods (2) SP, odd-numbered years. Lane
ESPM 146L: Medical and Veterinary Entomology Laboratory (1) SP Offered even-numbered years. Lane
ESPM C148 /NS C114: Pesticide Chemistry and Toxicology (3) SP Casida
ESPM C159: Human Diet (4) F Milton
ESPM 162: Bioethics (4) SP Winickoff
ESPM 167: Environmental Health and Development (3) F Morello-Frosch
IB 117: Medical Ethnobotany [2] F, SU Carlson
IB 117L: Medical Ethnobotany Laboratory [2] F, SU Carlson
IB 128: Sports Medicine (3) SP McLaughlin
IB 131: General Human Anatomy (3) F, SU Diamond
IB 131L: General Human Anatomy Lab (2) F, SU Diamond
IB 137: General Endocrinology (4) F Hayes
IB 140: Biology & Sociobiology of Human Reproduction (4) SP Carlson
IB C143A /Psych C113: Biological Clocks: Physiology and Behavior (3)
IB C143B /Psych C116: Hormones and Behavior (3) SP Kriegsfeld
IB C144 /Psych C115B: Animal Behavior (4) F Caldwell
IB N116: Medical Parasitology (4) [Summer Session]
MCB 135 A-K: Topics in Cell and Developmental Biology (3-4) F, SP Various instructors
MCB 150: Molecular Immunology (4) F, SP Schlissel F/ Beatty SP
MCB 165: Molecular Neurobiology (3) SP Presti
NS 103: Nutrient Function and Metabolism (3) F Fleming
NS 106: Intro to Food Science (3) F De Lumen
NS 110: Food Toxicology (3) F Bjeldanes
NS C119: Advanced Toxicology (3) SP Smith
NS 160: Human Nutrition (3) SP Stahl

NS 166: Nutrition in the Community (3) F Crawford
PB C103 /MCB C103: Bacterial Pathogenesis (3) SP Portnoy
PH 103: Drugs, Health and Society (2)
PH 104A, B: Health Promotion in a College Setting (2,2)
PH 105: Policy, Planning, and Evaluation of Health Promotion in a College Setting (3) F, SP Griego
PH 114: Issues in Personal and Community Health Promotion (3)
PH 116: Seminar on Social, Political and Health Issues in Health and Medicine (2) F, SP
PH 150B: Introduction to Environmental Health Sciences (3) SP Spear, K. Smith
Psych 110: Introduction to Biological Psychology (3)

5. INSECT BIOLOGY

NOTE: ESPM 140: General Entomology is required for this concentration.

ESPM 113: Insect Ecology (2) SP Welter
ESPM 115B: Aquatic Insects (3) Resh
ESPM 132: Spider Biology (4) SP Gillespie (includes a lab)
ESPM 134: Fire, Insects, and Diseases in Forest Ecosystems (3) SP Bruns
ESPM 140: General Entomology (4) SP O'Grady (includes a lab)
ESPM 144: Insect Physiology (3) SP Tanouye
ESPM 145: Arthropod-Borne Zoonotic Diseases: Basic Principles and Methods (2) SP, odd-numbered years. Lane
ESPM 146 & L: Medical/Veterinary Entomology (3,1)
ESPM 147: Field Entomology: "Ants," "Beetles," and "Spiders" (1 unit each) SP. Taking all three courses = one lab course.
ESPM 148: Pesticide Chemistry and Toxicology (3)
ESPM 172: Photogrammetry and Remote Sensing (3) F Gong

6. MICROBIOLOGY

CE 114: Environmental Microbiology (3) F Sedlak
ESPM 112: Microbial Ecology (3) SP Almeida
ESPM 131: Soil Microbiology (2) SP Pallud
ESPM C138/PB C114/MCB C114 : Intro to Comparative Virology (4)
MCB 113: Applied Microbiology and Biochemistry (2) SP Nikaido
NS 113: Food Microbiology (2)
PB C103/ MCB C103/ PH C102 Bacterial Pathogenesis (3)
PB C112/ MCB C112: General Microbiology (4), FA Ryan
PB C112L/MCB C112L: General Microbiology Lab (2) FA Kusty
PB C116/MCB C116: Microbial Diversity (3) F
PH 162A, 162L: Public Health Microbiology (3, 1) F, SU Coates