

Zoology (Zool)**10. Animal Biology (3)**

Not open to students with credit in BioSc 1B. Structural and functional comparison of animals; principles and human implications of inheritance, evolution, and ecology; physiology as applied to man. General Education BREADTH, Division 2. (2 lecture, 2 lab hours)

120. General Entomology (3)

Prerequisite: BioSc 1A-B. Anatomy, physiology, life history, and classification of insects and other arthropods. (2 lecture, 3 lab or field hours)* (Former Ent 101)

122. Economic Entomology (3)

(Same as Pl Pr 103). Prerequisite: Bot 10 or Zool 10. General and economic entomology; taxonomy of the principal orders of insects; life histories, habits, recognition, and control of the principal agriculture insect pests of the San Joaquin Valley. (2 lecture, 3 lab hours) (Former Ent 106)

132. Comparative**Vertebrate Morphology (4)**

Prerequisite: BioSc 1A-B. Comparative structure of vertebrate organ systems; laboratory study of representative vertebrates. (2 lecture, 6 lab hours) (Former Zool 103)

141. Invertebrate Zoology (3)

Prerequisite: BioSc 1A-B. Systematics, general ecology, and phylogeny of free living invertebrates (excluding insects), and including field studies of marine intertidal habitats. (2 lecture, 3 lab or field hours)* (Former Zool 114)

147. Medical Parasitology (3)

Prerequisite: BioSc 1A-B. Epidemiology, pathogenesis, and identification of the parasites of man. (2 lecture, 3 lab hours) (Former Zool 107)

148. Parasitology (4)

Prerequisite: BioSc 1A-B; general chemistry. A study of the general biology of symbiotic organisms of animal hosts including man. Lecture topics include life histories, epidemiology, infection and disease processes, physiology, and treatment. Laboratory exercises include a study of biological processes as well as parasite identification and diagnosis. (3 lecture, 3 lab hours) (Former Zool 108)

150. Natural History of Vertebrates (4)

Prerequisite: BioSc 130. Systematics, distribution, morphology, behavior, and ecology of fish, amphibians, reptiles, birds, and mammals. Fieldwork includes capture and sampling techniques, species identification and habitat analysis, and may require

weekend field trips to coastal, desert, and mountain environments. (3 lecture, 3 lab or field hours)* (Former Zool 113)

152. Animal Behavior (3)

Prerequisite: BioSc 130; one additional course in ecology or natural history recommended. Principles of ethology with emphasis on mechanisms of behavior. (2 lecture, 3 lab hours)* (Former Zool 130)

171. Ichthyology (3)

Prerequisite: BioSc 130. Ecology, evolution, and diversity of the fish of the world with emphasis on California fish, freshwater and marine. (2 lecture, 3 lab or field hours)* (Former Zool 140)

172. Herpetology (3)

Prerequisite: BioSc 130. Ecology, evolution, and diversity of the reptiles and amphibians of the world. (2 lecture, 3 lab or field hours)* (Former Zool 137)

174. Ornithology (3)

Prerequisite: BioSc 130. Ecology, ethology, evolution, and diversity of the birds of the world. (2 lecture, 3 lab or field hours)* (Former Zool 165)

177. Mammalogy (3)

Prerequisite: BioSc 130. Ecology, evolution, and diversity of the mammals of the world. (2 lecture, 3 lab or field hours)* (Former Zool 135)

(See also *Ecol 171, 172; Micro 171; and PhyAn courses.*)

GRADUATE COURSES

(See Course Numbering System.)

Biology (Biol)**204. Biology of Speciation (2)**

Prerequisite: BioSc 140A-B and 180. Evolution of the species as a unit of biological organization.

206. Biological Systematics (2)

Prerequisite: at least one upper-division or graduate course having a phylogenetic component. Classification, nomenclature, and taxonomic theory as applied to living organisms, their evolution, and phylogeny.

207. Radiotracer Methodology in the Natural Sciences (3)

(Same as Chem 207 and Phys 207.) Prerequisite: graduate standing; two semesters undergraduate physics recommended. For students in biology, chemistry, physics, or other areas using radioisotopes. Covers radiation detection, radiation safety, gamma ray spectroscopy, liquid scintillation, radioimmunoassay, and biological applications in living systems. Team taught. (2 lecture, 3 lab hours) (Former N Sci 207)

208. Biological Field**Studies (1-6; max total 6)**

Prerequisite: permission of instructor. Integrated studies or specialized topics, including botanical, environmental, microbiological, or zoological field studies.* Approved for *SP* grading.

210. Parasitic Protozoa (3)

Prerequisite: Zool 148. A systematic survey of parasitic protozoa. (2 lecture, 3 lab hours)

212. Helminthology (3)

Prerequisite: Zool 148. A systematic survey of parasitic helminths. (2 lecture, 3 lab hours)

240. Systems Ecology (3)

Prerequisite: BioSc 130, Math 70. Quantitative approach to the analysis of whole ecosystems including data acquisition and statistical treatment, conceptual and mathematical ecosystem modeling, and computer simulations in FORTRAN or BASIC. No programming experience needed. (2 lecture, 3 lab hours)

241A-B. Molecular Biology I-II (3-3)

(Same as Chem 241A-B.) Prerequisite: BioSc 140A-B, Chem 150 or 155, and permission of instructor. Biol/Chem 241A is prerequisite for Biol/Chem 241B. Seminar covering current topics in molecular biology. Topics include: protein and nucleic acid structure, DNA replication, transcription, translation, bacterial and animal viruses, prokaryotic and eukaryotic regulation, mechanisms of exchange of genetic material, and recombinant DNA technology.

242. Techniques in Protein**Purification and Analysis (3)**

(Same as Chem 242.) Corequisite: Biol/Chem 241A. Deals with the technologies relevant to protein isolation, purification, analysis, immobilization, and modification in micro and macro quantities. (1 lecture, 6 lab hours)

243. Nucleic Acid Technology Lab (3)

(Same as Chem 243.) Prerequisite: Biol/Chem 241A and 242. Corequisite: Biol/Chem 241B. A lecture/laboratory course focusing on the technologies used in nucleic acid chemistry, specifically synthesis, translation, mutagenesis, and genetic engineering. (1 lecture, 6 lab hours)

244. Cell Culture and Hybridoma (2)

(Same as Chem 244.) Prerequisite: Micro 185 or PhyAn 160. The theory and practice of *in vitro* propagation of eukaryotic cells, including growth characteristics, metabolic

* Late afternoon, Saturday and/or overnight field trips may be required.