

Biology

BIOL 125. Plant Taxonomy (3)

Prerequisites: BIOL 1A and 1B or permission of instructor. Principles of plant classification; local flora. (1 lecture, 6 lab or field hours)* (Formerly BOT 144)

BIOL 130. Invertebrate Zoology (4)

Prerequisites: BIOL 1A and 1B. Systematics and phylogeny (based primarily upon external and internal anatomy) and general ecology of free-living invertebrates (excluding insects). Includes field studies of marine and occasionally freshwater habitats. (2 lecture, 3 lab or field hours)* (Formerly ZOO 141)

BIOL 131. Parasitology (4)

Prerequisites: BIOL 1A and 1B and CHEM 1A or 3A. A study of the biology of parasitic organisms, including those of humans. Lecture topics: life history strategies, infectious processes, epidemiology, ecology, parasite evolution and phylogeny, diagnosis and treatment. Laboratory and field exercises: identification and sampling techniques, taxonomy, investigation of biological processes. (3 lecture, 3 lab hours*) (Formerly ZOO 148)

BIOL 132. General Entomology (3)

Prerequisites: BIOL 1A and 1B. Anatomy, physiology, life history, and classification of insects and other arthropods. (2 lecture, 3 lab or field hours)* (Formerly ZOO 120)

BIOL 133. Natural History of Vertebrates (4)

Prerequisite: BIOL 101. 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 hours)* (Formerly ZOO 150)

BIOL 134. Ichthyology (3)

Prerequisite: BIOL 101. 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)* (Formerly ZOO 171)

BIOL 135. Biology of Reptiles and Birds (4)

Prerequisite: BIOL 101. Ecology, ethology, and evolution of the reptiles and birds of the world. Encompasses the traditional areas of herpetology and ornithology. (3 lecture, 3 lab or field hours)* (Formerly ZOO 174)

BIOL 136. Mammalogy (3)

Prerequisite: BIOL 101. Ecology, evolution, and diversity of the mammals of the world. (2 lecture, 3 lab or field hours)* (Formerly ZOO 177)

BIOL 140. Plant Anatomy (3)

Prerequisites: BIOL 1A and 1B or permission of instructor. Structure and development of flowering plants at the cellular and tissue levels. (2 lecture, 3 lab hours) (Formerly BOT 133)

BIOL 141. Histology (4)

Prerequisites: BIOL 103. Identification and study of vertebrate cells, tissues, and organs. (2 lecture, 6 lab hours) (Formerly PHYAN 134)

BIOL 142. Vertebrate Embryology (4)

Prerequisites: BIOL 1A and 1B. Morphogenesis of vertebrates from gamete formation through organogenesis, including physiological and experimental aspects of development. Laboratory emphasis on frog, chick, and pig. (2 lecture, 6 lab hours) (Formerly PHYAN 135)

BIOL 143. Comparative Vertebrate Morphology (4)

Prerequisites: BIOL 1A and 1B. Comparative structure of vertebrate organ systems; laboratory study of representative vertebrates. (2 lecture, 6 lab hours) (Formerly ZOO 132)

BIOL 144. Neuroanatomy (4)

Prerequisites: BIOL 33 or 64 or 65. Macroscopic and microscopic study of the structure and functional relationships of the human nervous system. (3 lecture, 3 lab hours) (Formerly PHYAN 130)

BIOL 150. Molecular Biology (3)

Prerequisites: BIOL 102 and 103; CHEM 150 or 155. The study of genome structure and fluidity, prokaryotic and eukaryotic gene expression, and genomics. If GENET 142 was taken prior to fall 2005, it is equivalent to BIOL 150 and 151. (Formerly GENET 142)

BIOL 151. Bioinformatics (2)

Prerequisites: BIOL 102 and 103; CHEM 150 or 155. Recommended prerequisite or corequisite: BIOL 150. Priority enrollment given to MCD option majors. Practical use and application of computational tools for the analysis of nucleic acids and proteins. Genomic database searching, sequence alignment, molecular phylogenetic analysis, and secondary and tertiary structure modeling of biological macromolecules. No credit if GENET 142 taken prior to fall 2005. (1 lecture, 3 lab hours) (Formerly GENET 142 lab component, GENET 143)

BIOL 152. Experimental Molecular Genetics (4)

Prerequisite: BIOL 102 and 103. The nature of genetic information, its mutation, transfer, and recombination in cells. (2 lecture, 6 lab hours) (Formerly GENET 171)

BIOL 153. Microbial Genetics (4)

Prerequisite: BIOL 102 and 120 or permission of instructor. Genetic variation, gene transfer, and regulation of gene expression in model microbial systems and medically and industrially important microbes. (3 lecture hours, 3 lab hours) (Formerly GENET 182)

BIOL 155. Developmental Biology (4)

Prerequisite: BIOL 102 and 103. Investigations concerning the variety of mechanisms acting during the several stages of development of the living organism, from gamete formation to morphological and biochemical differentiation of organ systems; emphasis on differential genetic control. (3 lecture, 3 lab hours) (Formerly GENET 172)

BIOL 156. Plant Growth and Development (3)

Prerequisites: BIOL 102 or permission of instructor. Processes involved in plant growth with emphasis on the development of form in higher plants and the experimental approach. (2 lecture, 3 lab hours) (Formerly BOT 137)

BIOL 157. Immunology (3)

Prerequisites: BIOL 102 required. BIOL 103 and CHEM 150 or 155 highly recommended. Principles of mammalian immune response, featuring the molecular and cellular interactions involved in both humoral and cell-mediated immunity. Regulatory controls and adverse clinical conditions involving immune functions are addressed. Experimental basis of inquiry is emphasized. (Formerly PHYAN 160)

BIOL 157L. Immunology Laboratory (2)

Prerequisites: BIOL 157 and either BIOL 103 and 104 or BIOL 120. Experimental illustration of immune response; classical and contemporary immunology techniques; interpretation and presentation of experimental outcomes. (6 lab hours) (Formerly PHYAN 160L)

BIOL 160. Microbial Physiology (4)

Prerequisite: BIOL 120. Structure, function, energy metabolism, growth, and regulatory mechanisms of microorganisms. (2 lecture, 6 lab hours) (Formerly MICRO 161)

BIOL 161. Plant Physiology (4)

Prerequisites: BIOL 1A and 1B (or BIOL 11); CHEM 1A or 3A; CHEM 3B or 8 or 128A; or permission of instructor. General metabolism (photosynthesis, water relations, respiration, nutrient use, etc.) of plants and functional integration with structure. (3 lecture, 3 lab hours) (Formerly BOT 130)

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