

130. Plant Physiology (4)

Prerequisites: BIOSC 1A and 1B; CHEM 1A or 3A; or permission of instructor; organic chemistry recommended. General metabolism and related processes. (2 lecture, 6 lab hours)

131. Vascular Plants (4)

Prerequisites: BIOSC 1A and 1B or permission of instructor. Morphology, reproduction, and evolution of the major groups of vascular plants (both living and extinct). Emphasis placed upon the seed plants. (2 lecture, 6 lab hours)

132. Nonvascular Plants (3)

Prerequisites: BIOSC 1A and 1B or permission of instructor. Comparative structure and phylogeny of the fungi, algae, mosses, and liverworts. (2 lecture, 3 lab hours)

133. Plant Anatomy (3)

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

137. Plant Growth and Development (3)

Prerequisites: BIOSC 140A 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)

142. Phycology (4)

Prerequisites: BIOSC 1A and 1B or permission of instructor. Morphology, cytology, ecology, physiology, economic importance, and cultivation of the algae. (2 lecture, 6 lab or field hours)*

144. Plant Taxonomy (4)

Prerequisites: BIOSC 1A and 1B or permission of instructor. Principles of plant classification; local flora. (1 lecture, 9 lab or field hours)*

Ecology (ECOL)

135. Marine Biology (3)

Prerequisite: BIOSC 1B or ZOOL 10. Introduction to the marine environment with emphasis on the biological aspects; systematics, ecology, and morphological and physiological adaptations of marine organisms, especially intertidal and shallow water forms; pollution; utilization of marine resources. (One field trip required)

151. Terrestrial Ecology (4)

Prerequisite: BIOSC 130. The interaction of organisms and communities with the physical and biotic environment, with emphasis on the biotic communities of Central California. (3 lecture, 3 lab or field hours)*

152. Aquatic Ecology (4)

Prerequisite: BIOSC 130. Physical-chemical features of inland waters as related to their biology; community structure and function, ecological interactions, adaptations, and identification of aquatic organisms. (3 lecture, 3 lab or field hours)*

162. Microbial Ecology (4)

Prerequisites: BIOSC 130 and MICRO 140. Physiological ecology of microorganisms; interactions of microorganisms with abiotic and biotic factors in the environment; microbial habitats including soil, water, and organisms; techniques of microbial ecology (field and laboratory). (3 lecture, 3 lab hours)*

171. Fisheries Biology and Management (3)

Prerequisite: BIOSC 130; statistics strongly recommended. Ecology and management of fisheries; techniques for studying fish populations; quantitative methods for assessing fish stocks; environmental requirements and habitat improvement methods; acquisition and application of information to obtain maximum benefit from fishery resources. Inland fisheries emphasized. (2 lecture, 3 lab or field hours)*

172. Wildlife Biology and Management (4)

Prerequisite: BIOSC 130. Ecological theory and its use in the management of wildlife resources. Field and laboratory exercises designed for the application of techniques used in research and in making management decisions. (2 lecture, 6 lab or field hours)*

(See also *BOT*, *MICRO*, *ZOOL* courses.)

174. Systematic Biology (3)

Prerequisite: BIOSC 1A and 1B; BIOSC 140A-B recommended. Modern theory and methods of phylogenetic analysis applied to the study of biodiversity and evolution. (2 lecture, 3 lab hours) (Formerly BIOL 189T)

Genetics (GENET)

120. Introduction to Genetics (3)

Not open to biology majors and students with credit in BIOSC 140A. Prerequisites: BIOSC 1A and 1B or BOT 10. Principles of biological inheritance, including gene structure, gene function, statistical methods, problem solving, and human genetics.

142. Molecular Biology (4)

Prerequisites: BIOSC 140A-B; CHEM 150 or 155. The study of genome structure and fluidity, prokaryotic and eukaryotic gene expression, genomics, and bioinformatics. (3 lecture, 3 lab hours)

170. Seminar in Cellular and Molecular Biology (1)

Prerequisites: GENET 142 or permission of instructor. Trends and breakthroughs in cellular and molecular biology accessed through the primary literature. (1 seminar hour)

171. Experimental Molecular Genetics (4)

Prerequisite: BIOSC 140A-B. The nature of genetic information, its mutation, transfer, and recombination in cells. (2 lecture, 6 lab hours)

172. Developmental Biology (4)

Prerequisite: BIOSC 140A-B. 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)

182. Microbial Genetics (4)

Prerequisite: BIOSC 140A or BIOSC 140B or CHEM 150 or CHEM 155 or MICRO 140. Students not meeting the above prerequisite should not enroll in GENET 182. 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)

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