

BIOLOGY (BIOL)

BIOL 50500 Parasitology (LA)

Advanced study of parasitism throughout the animal kingdom, with special attention to parasites important to human and veterinary medicine. Topics include systematics, morphology, and life cycles of parasites; coevolution of hosts and their parasites; the use of parasites and parasitoids as biological control agents of pest species; and the influence of parasites on population biology and community structure of host species. Prerequisites: Graduate student in good standing or permission of instructor. (F, E)

3 Credits

BIOL 54000 Inquiry and the Nature of Science for the Science Teacher

Considers issues pertaining to the nature and practice of science, especially as they relate to science education. Explores aspects that distinguish scientific inquiry from other forms of inquiry. Examines safety issues of teaching science in a classroom, and teaching science in the context of the community. Cross-listed with CHEM 54000, ENVS 54000, and PHYS 54000. Students can receive credit for only one of: BIOL 54000, CHEM 54000, ENVS 54000, and PHYS 54000. Prerequisites: Graduate student in good standing. (IRR)

3 Credits

BIOL 54100 Science Topics Every Science Teacher Should Know (LA)

Review of the major science topics all science teachers should know as recommended by the National Science Teachers Association. Cross-listed with CHEM 54100, ENVS 54100, and PHYS 54100. Students can receive credit for only one of: BIOL 54100, CHEM 54100, ENVS 54100, PHYS 54100. Prerequisite: Graduate student in good standing. (F, Y)

3 Credits

BIOL 56100 Ecophysiology (LA)

Advanced study of the function and performance of animals and plants in their environment. This course integrates information from molecular biology through organismal physiology to understand the mechanisms that allow organisms to survive in their physical, chemical, and biological environments. This information is analyzed to understand how these small-scale processes affect higher levels of organization, from biotic communities up to global-level issues. Topics include adaptations to extremes in temperature, energy availability, moisture, and nutrients. Examples will be taken from organisms living in a wide variety of environments including deserts, the Arctic, temperate forests, marine environments, and rain forests. Prerequisite: Graduate student in good standing or permission of instructor. (S, E)

3 Credits

BIOL 57600 Endocrinology (LA)

Advanced study of the mechanisms by which hormones control their targets and provide background on the major vertebrate hormones. The course then covers current research in endocrinology, analyzing topics such as weight control, growth, gender differentiation, reproduction, the stress response, and environmental endocrine disrupters. Lecture and discussion with an emphasis placed on reading and analyzing the scientific literature. Prerequisite: Graduate student in good standing or permission of instructor. (S,O)

3 Credits

BIOL 57800 Evolution (LA)

Advanced study of the field of evolutionary biology that includes the study of both microevolutionary and macroevolutionary change and the mechanisms of change. Specific topics of focus will include the nature of natural selection, population genetics, molecular evolution, adaptation, mechanisms of speciation, phylogenetic analysis, sexual selection, and the evolution of social behavior. Prerequisite: Graduate student in good standing or permission of instructor. (F, O)

3 Credits

BIOL 57900 Aquatic Ecology (LA)

Advanced study of the biological, chemical, and physical features of lakes and streams, features that are related to general ecological concepts and environmental concerns. Focuses on the invertebrate and fish communities, and the physiological adaptations of species to the aquatic environment. Theoretical approaches and practical techniques will be addressed. Prerequisite: Graduate student in good standing or permission of instructor. (S, O)

3 Credits

BIOL 60000 Independent Study in Biology

One-semester course in which a student may pursue a topic of interest in biology, supervised by a member of the department. Course may be repeated for credit, up to a maximum of Offered on demand only. Prerequisite: Permission of instructor. (IRR)

3 Credits

BIOL 60200 Independent Research in Biology

Original research participation with a faculty member in a specialized field. Designed to strengthen the student's understanding of the nature of science, science research methodology, and the scientific literature. Course may be repeated for credit, up to a maximum of Offered on demand only. Prerequisite: Permission of instructor. (IRR)

3-6 Credits

BIOL 69800 Education Research for the Science Teacher (LA)

Original research participation with a science education faculty member. Designed to strengthen student understanding of science education research methodology and the science education research literature. Cross-listed with CHEM 69800, ENVS 69800, and PHYS 69800. Students can receive credit for only one of: BIOL 69800, CHEM 69800, ENVS 69800, PHYS 69800. Offered on demand only. Prerequisite: Graduate student in good standing. (IRR)

3 Credits