

ZOOLOGY (ZOOL)

Course numbers with the # symbol included (e.g. #400) have not been taught in the last 3 years.

ZOOL #808 - Stream Ecology

Credits: 4

Ecological relationships of organisms in flowing water; streams as ecosystems. Lectures on physical and chemical features of streams, floral and faunal communities, and factors controlling populations of benthic invertebrates. Laboratory exercises employ both field and laboratory experimental techniques. Weekly seminars on original research papers. Special fee. (Not offered every year.)

ZOOL 810 - Ichthyology

Credits: 4

An introduction to the evolution, systematics, anatomy, physiology, and ecology of fishes, with an emphasis on New England species. Prereq: principles of biology or equivalent. Lab. (Offered alternate years.) Special fee.

ZOOL 833 - Behavioral Ecology

Credits: 4

Behavioral adaptations of animals to their environment including the evolution of behavior and behavioral genetics; foraging and competition for resources; reproductive ecology, mating systems and parental care; and the evolution of cooperative behavior. Examples include both vertebrates and invertebrates. Emphasis is on critical understanding of concepts as exhibited in oral and written exercises. Students conduct independent investigations. Prereq: animal behavior or ecology or evolution course. Lab. (Offered in alternate years.)

ZOOL 836 - Genes and Behavior

Credits: 4

Genes and behavior examines the genetic underpinnings of animal behavior, and how behavior evolves on a genetic level. The course primarily relies on readings from the primary literature, using examples from laboratory model organisms, animals in their natural habitats, and humans. Topics include aggressiveness, social behavior, personality, parental care, communication, mating behavior, novelty seeking behavior, and foraging. This interdisciplinary course examines these behaviors at multiple levels, including genomics, population genetics, molecular genetics, epigenetics, endocrinology, and neurobiology. Prereq: GEN 604 and ZOOL 713 or equivalent.

ZOOL 845 - Biology and Diversity of Insects

Credits: 4

The lecture examines the unique biologies and structure of insects, the most diverse group of organisms. The laboratory project is based on past public requests for an understanding of aquatic insect biodiversity in streams. Experience in sampling, sorting, and identifying aquatic insects is developed, and an understanding of biodiversity indices is developed for a formal report and presentation. Prereq: BIOL 411 and 412 or equivalent. Special fee. (Not offered every year.)

ZOOL 850 - Biological Oceanography

Credits: 4

Biological processes of the oceans, including primary and secondary production, trophodynamics, plankton diversity, zooplankton ecology, ecosystems and global ocean dynamics. Field trips on R/V Gulf Challenger and to the Jackson Estuarine Laboratory. Prereq: one year of biology or permission of instructor. (Also offered as ESCI 850.) Special fee. Lab. (Not offered every year.)

ZOOL 872 - Fisheries Biology

Credits: 3

Principles of fisheries science, with emphasis on techniques used to assess the biological characteristics of exploited fish populations and the use of such information for fisheries management. Prereq: ZOOL 810; permission. (Not offered every year.)

ZOOL 873 - Physiology of Fish

Credits: 4

Investigation of the physiological processes responsible for maintaining homeostasis in fishes. Focus is on the function and regulation of the major organ systems during stress and environmental adaptation. Topics include reproduction, osmoregulation, digestion, endocrinology and sensory perception.

ZOOL 877 - Neurobiology and Behavior

Credits: 3

Survey of fundamental concepts and recent discoveries in neurobiology. Topics include structure and function of neurons, development, cellular basis of behavior (sensory and motor systems), neuropharmacology, and neural plasticity (learning). Prereq: principles of biology I and II or permission. Physiology also desirable.

ZOOL 895 - Advanced Studies

Credits: 1-4

Independent study in various areas, including but not limited to: animal behavior; departmental biology; ecology; electron microscopy; evolution; genetics; histology; history of biology; invertebrate biology; neurobiology and behavior; physiology; teaching practices; underwater research; vertebrate biology; biological techniques. Course sections for advanced work, individual or group seminar. May include reading, laboratory work, organized seminars, and conferences. Prereq: permission of department chairperson and staff concerned.

ZOOL 899 - Master's Thesis

Credits: 1-10

Prereq: permission of department chairperson and prospective supervisor. May be repeated up to a maximum of 10 credits. Cr/F.

ZOOL 997 - Seminar

Credits: 1-2

Reports on recent zoological literature. Subject fields are those listed under ZOOL 895 and ZOOL 896; not all areas available every semester. Required of graduate students in zoology. Cr/F.

ZOOL 998 - Seminar

Credits: 1-2

Reports on recent zoological literature. Subject fields are those listed under ZOOL 895 and ZOOL 896; not all areas available every semester. Required of graduate students in zoology. Cr/F.

ZOOL 999 - Doctoral Research

Credits: 0

Cr/F.