

Undergraduate and Graduate Credit

BIOL 513 - Physiological Adaptations of Animals Credits: 4

Integration of physiological mechanisms as the basis for adaptive responses of animals to different environments.

BIOL 515 - Behavioral Ecology Credits: 3

Study of the social, environmental, genetic, and evolutionary processes that affect animal behavior. Topics include: evolution of social organization, spacing and group behavior, mating systems and parental care, sexual selection, communication, aggression, habitat selection, and foraging. Research project required.

BIOL 520 - Evolution Credits: 3

A study of the theory of evolution including its historical and social implications.

BIOL 529 - Ecology Credits: 3

Interdisciplinary examination of organisms and their interaction with the environment, ecosystem structure and function, population ecology and demography, community structure and dynamics, and basic ecological principles and their relevance to contemporary environmental issues.

BIOL 542 - Ichthyology Credits: 3

Systematics, morphology, physiology, distribution, and natural history of fishes.

BIOL 612 - Freshwater Ecology Credits: 4

Basic ecological principles of aquatic environments and environmental applications. Plants and animals of local streams, rivers, ponds, and reservoirs are used to demonstrate the interaction of biological processes with the chemical and physical features of natural aquatic environments.

BIOL 632 - Ecology Laboratory Credits: 1

Laboratory and field experiences with ecological problems.

BIOL 640 - Population Biology Credits: 3

An introduction to the theories of quantitative population biology including dynamics, demography and genetics. Emphasis on spatio-temporal variation within and among populations and species.

BIOL 642 - Principles of Conservation Biology Credits: 3

Biological diversity and the factors contributing to loss of biodiversity. Scientific principles of biological conservation emphasizing the application of ecological theory and population genetics to the conservation of threatened populations, species and ecosystems.

BIOL 682 - Fish Ecology Credits: 3

The interaction between fish and their environment. Exploring fundamental ecological processes in aquatic systems at individual, population, community and ecosystem scales.

BIOL 687 - Microbial Ecology Credits: 3

The ecology of aquatic, terrestrial, animal and plant host-associated microorganisms in their natural environments.

BIOL 696 - Fisheries Management and Techniques Credits: 4

Historical and contemporary issues in the management and conservation of exploited fishes. Methods for managing fisheries resources in streams, lakes, and ponds including estimating abundances, quantifying age and growth, manipulating populations, modeling population dynamics, culturing fishes, and improving aquatic habitat.

Graduate Credit

BIOL 810 - Analysis of Ecological Gradients Credits: 3

An introduction to analytical methods and conceptual approaches to evaluate patterns of communities across environmental gradients. Multivariate statistical techniques will be used to analyze data and quantify species abundance patterns in a variety of environments.

BIOL 818 - Advanced Aquatic Ecology Credits: 3

A study of advanced issues and methodology in limnological sciences, including a workshop on algal taxonomy, and an applied group project.

BIOL 822 - Landscape Ecology Credits: 4

Effect of spatial pattern on ecological processes. Course will emphasize how spatial complexity emerges and is maintained in ecological systems, the analysis of spatial pattern, scaling issues, the ecological consequences of spatial pattern and applications for conservation and ecosystem management in both aquatic and terrestrial systems.

BIOL 823 - Demographic Methods Credits: 3

Theory and methods of quantitative approaches for the study of population dynamics. Advances in matrix methods and mark-recapture statistics will be emphasized.

BIOL 826 - Nutrient Dynamics Credits: 3

The cycling of elements in ecosystems with emphasis on macronutrients such as nitrogen, phosphorous, and major cations, and the influence of variables such as acid rain on nutrient dynamics.

BIOL 863 - Professional Skills and Ethics Credits: 3

An introduction for graduate students in the mechanics of becoming a scientist and professional biologist. Students actively participate in learning professional skills such as proposal writing and reviewing, professional oral and poster presentations, communicating science to the general public, abstract and manuscript preparation, and other topics. Ethical conduct in research and professional settings is discussed throughout the course.

BIOL 875 - Evolutionary Ecology Credits: 3

A study of the evolution of population, community, and ecosystem structure.

BIOL 890 - Advanced Topics in Biology Credits: 1-6

BIOL 891 - Advanced Problems in Biology Credits: 1-8

BIOL 898 - Master's Research in Biology Credits: 1-9

BIOL 998 - PhD Research in Biology Credits: 1-18