BIOLOGY

BOT 6276C Phylogenomics 4 Credits
Grading Scheme: Letter Grade
Acquaints graduate students with the mathematical theory and methods underlying modern phylogenetic analyses, particularly those that involve "big" data sets, either in terms of taxa or markers. Covers advanced phylogenetic methods, including comparative methods and the multi-species coalescent.
Prerequisite: BOT 6726C with a minimum grade of C-.

BOT 6656 Plant Symbiosis 3 Credits
Grading Scheme: Letter Grade
Examines the crucial role of symbioses in shaping the diversity of life. Topics include generalities among symbioses, origins and establishment of symbioses, and coevolution and cospeciation, as well as specifics of well-studied exemplars of bacterial, fungal, animal, and plant symbioses with plants.
Prerequisite: BSC2010 (C) & BSC2010L (C) & BSC2011 (C) & BSC2011L (C)

BSC 6038 Broader Impacts of Science on Society 2 Credits
Grading Scheme: Letter Grade
Explores ways in which scientists can increase impacts to society and emphasize the relevance of scientific work. Topics include broadening scientific impacts through exhibits, working with teachers, social media, serving underrepresented groups, and more.

BSC 6451 Computational Tools for Research in Biology 3 Credits
Grading Scheme: Letter Grade
Introduces computational tools for research: Linux command line, Python scripting, databases. Prepares students to conduct large-scale data analysis on high performance computing resources.

BSC 6895 AI in Biology 3 Credits
Grading Scheme: Letter Grade
Examines how Artificial Intelligence has rapidly become ubiquitous in daily life and been applied to diverse areas of Biology. Focuses on machine learning approaches as well as deep learning methods, including transformers. Covers machine learning methods for tabular data, computer vision, transfer learning, natural language processing, and transformer based architectures. Classes are typically applied coding with Jupyter Notebooks on HiPerGator. Prior Python coding experience required.
Prerequisite: BSC 4452 or BSC 6451 or BSC 2891 or other Python programming experience.

PCB 6675C Evolutionary Biogeography 3 Credits
Grading Scheme: Letter Grade
Interpretation of biological data sets in a biogeographical context. Topics and methods in historical and ecological biogeography will be discussed.
Prerequisite: Permission of instructor.

PCB 6685 Population Genetics 4 Credits
Grading Scheme: Letter Grade
Provides a comprehensive introduction to the mathematical theory of allele and genotype frequency dynamics within and between populations and will serve as a springboard to more advanced topics in evolutionary biology. Topics covered include deterministic and stochastic processes in evolution and an introduction to classical quantitative genetics theory.
Prerequisite: Graduate status.

ZOO 6930 Seminar in Molecular Evolution 2 Credits
Grading Scheme: Letter Grade
A seminar course in evolution, genetics, and genomics. The class provides each student the opportunity to lead discussion and to exchange ideas with others on various student-selected topics in any area of the broad interdisciplinary fields of evolution, genetics, and genomics.
Prerequisite: Graduate student standing or permission of the instructor.