Plant Biology (P B)

P B 380C Advanced Conservation Biology 3 Hours
Explore principles and concepts of ecology to the preservation of wild plant and animal species and to the preservation, management, and restoration of natural and semi-natural ecosystems. Focus on biological aspects of issues such as endangered species protection, invasive species, preserve design, and forest management, via a set of case studies.

P B 380E Advanced Microbial Ecology 3 Hours
Examine microbial population, community, and ecosystem ecology.

P B 380P Population Genetics 3 Hours
Introduction to population genetics. Focus on quantitative understanding of evolutionary change caused by selection, drift, mutation, and migration. Explore phenotypic and molecular evolution.

P B 180R, 280R, 380R Advanced Readings in the Biological Sciences 1-3 Hours

P B 380T Topics in Current Biology Concepts 3 Hours
Designed for beginning graduate students seeking a review of modern biological concepts.

P B 381E Ecology Seminar 3 Hours
Listen to and discuss presentations ranging from research progress reports to practice conference talks and well-versed presentations of long term research programs.

P B 381P Advanced Plant Physiology 3 Hours
Explore general principles of mineral nutrition, water relations, metabolic activities, growth, and development of green plants.

P B 182, 282, 382, 682, 982 Advanced Study and Research 1,2,3,6,9 Hours

P B 382K Topics in Computational and Statistical Biology 3 Hours

P B 382K.4 Numerical Ecology in R 3 Hours
Examine basic concepts and methods of laboratory and field analysis in various fields of biology. Explore systematics and ecology of natural populations.

P B 382K.5 Meta Analysis 3 Hours
Explore a quantitative approach for synthesizing results from diverse research studies that address a similar hypothesis.

P B 382K.6 Programming for Biology 3 Hours
Explore programming skills that are relevant to research in the biological sciences, including but not limited to programming in Python, R, Perl, C++.

P B 382K.7 Ecological Theory and Modeling 3 Hours
Explore concepts and methods of modeling ecological systems including populations, communities, and ecosystems. Focus on the methodology and utility of ecological theory and modeling. Examine the basic techniques and classic insights derived from differential equation, statistical, and individual based models with emphasis on the ability to interpret and evaluate models in the literature.

P B 382K.8 Introduction to Biology for Data Science 3 Hours
Explore biological concepts and methods (including its assumptions and limitations), particularly in the areas of systems biology, medical and evolutionary genomics, and neuroscience. Focus on approaches that produce a lot of data but are analysis-challenged.

P B 384K Topics in Ecology, Evolution, and Behavior 3 Hours
Examine basic concepts and methods of laboratory and field analysis in various fields of biology. Explore systematics and ecology of natural populations.

P B 384K.1 Chemical Ecology 3 Hours
Explore the breadth of chemical ecology, from its historical focus on pheromonal communication, plant-insect interactions, and coevolution to new frontiers, including novel methods in metabolomics and the community and ecosystem effects of chemically mediated species interactions.

P B 384K.2 Recent Advances in Ecosystem Ecology 3 Hours
Explore recent advances in ecosystem ecology.

P B 384K.3 Recent Advances in Ecological and Evolutionary Genetics 3 Hours
Discuss and analyze current and classic literature related to ecological and evolutionary genetics.

P B 384L Issues in Population Biology 3 Hours
Analyze currently active areas of research in population biology.

P B 386K Topics in Plant Sciences 3 Hours

P B 386K.1 Advanced Subjects in Plant Systematics 3 Hours

P B 387J Advanced Plant Anatomy 3 Hours
Examine plant anatomy in relation to development and differentiation, systematics, and evolution.

P B 187L Laboratory in Advanced Plant Anatomy 1 Hour
Review cellular details and tissue systems of plant organs and discuss the preparation of plant materials for histological examination.

P B 388D Current Research in Plant Biology 3 Hours
Introduction to various fields of plant biology. Attend seminars, faculty research presentations, and other meetings.

P B 388E Plant Growth and Development 3 Hours
Focus on whole plant physiology, especially growth and development, water relations, and mineral nutrition of vascular plants.

P B 388M Plant Molecular Biology 3 Hours
Explore the fundamentals of plant molecular biology, including structure and expression of the chloroplast and mitochondrial genomes.

P B 389D Subjects and Skills for Graduate Students in Plant Biology 3 Hours
Designed for first-year graduate students in ecology, evolution, and behavior. Introduction to the writing, presentation and appraisal skills needed to excel in all fields of biological research.

P B 390C Fundamentals of Evolution 3 Hours
Introduction to major principles and questions in evolutionary biology. Explore population genetics, genetic diversity, adaptation, origin of species, phylogenetics, molecular evolution, and macroevolution. Focus on identifying open questions, analysis and interpretation of data, and gaining familiarity with the primary scientific literature.

P B 390E Fundamentals of Ecology 3 Hours
Explore the fundamentals of ecology, ranging from organism physiology to population, species, community, and ecosystem-level processes across landscapes and biomes.

P B 698 Thesis 6 Hours

P B 398R Master's Report 3 Hours
Prepare a report to fulfill the requirement for the master's degree under the report option.

P B 399W, 699W, 999W Dissertation 3,6,9 Hours