

Undergraduate Botany Classes, Texas Tech University

Updated Spring 2018

BIOL 1401: Biology of Plants

Instructors: Dr. Nick Smith and Dr. Matt Johnson
Offered: Every Semester
Prerequisites: None
Lab Course

This course, intended for students not majoring in biology, provides a broad survey of plant biology. Students will be able to recognize major plant groups and their characteristics, describe plant structure and its relationship to plant function, and associate the survival of plants with expression of genes controlling plant function. The course includes a lab section and satisfies university lab course requirements.

BIOL 3306: Principles of Plant Biology

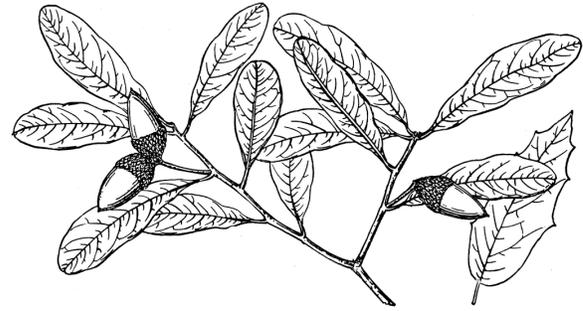
Instructors: Dr. Matt Olson and Dr. Dylan Schwilk
Offered: Every Fall Semester
Prerequisites: BIOL 1404 or BIOL 1401

This course will be a survey of plant diversity, evolution, structure, physiology, and ecology. Students will learn the fundamentals of plant identification and classification, the details of plant reproduction and the variety of reproductive modes, the relationship between plants and their environment, and how plants respond to the environment. As much as possible, we will be incorporating field and hands-on learning activities to teach students how to better understand this important part of earth's biodiversity.

BOT 3404: Evolution of Plants

Instructor: Dr. Matt Johnson
Offered: Spring of Even-Numbered Years
Prerequisites: BIOL 1404 or BIOL 1401
Writing Intensive Course, Lab Course

From the adaptations that allowed the first appearance of plants on land to interactions within existing plant populations, this course covers the major patterns that shaped the evolution of: alternation of generations, pollinator interactions, carnivorous plants, and plant genomes. The lab section will introduce modern methods in plant evolutionary genetics, including extracting, sequencing, and analyzing plant DNA sequences. Upon completion of the course, students will be able to critically read and interpret scientific papers, and conduct molecular genetics research in plant systematics. Students will be assessed by participation in class discussion, by writing two reviews of scientific literature, and by presenting research results in lab section.



BOT 4304: Plant Molecular Biology

Instructor: Dr. Hong Zhang
Offered: Spring of Even-Numbered Years
Prerequisites: BIOL 1403, BIOL 1404, BIOL 3416, BIOL 3320

This course showcases plants from the molecular perspective, including genetics and cell architecture, metabolism and signaling, growth and development, and reproduction and environmental interactions. Students will learn the molecular basis of plant growth, the essential roles that plants play in our lives, and the scientific basis of genetically engineered organisms. Students will be assessed through exams, class discussion, and an oral presentation.

BIOL 4350: Plant Physiology

Instructor: Dr. Nick Smith
Offered: Spring of Odd-Numbered Years
Prerequisites: BIOL 1401 or BIOL 1404

This course will cover the fundamentals of plant physiological processes at multiple scales, from the cellular to whole-plant level. The class will consider physiological responses to a variety of abiotic and biotic conditions across space and time, including responses to expected future global changes. We will examine plant strategies that influence their form, function, and distribution. The course will consider both natural and agricultural contexts. Students will tackle classical literature as well as current topics in plant physiology. Classes will be primarily discussion based.

BOT 4409: Plant Development

Instructor: Dr. Chris Rock
Offered: Spring of Odd-Numbered Years
Prerequisites: BIOL 1403, BIOL 1404, BIOL 3416
Lab Course

Integration of positional, environmental, hormonal, and genetic regulation of plant development; emphasis on model species and comparisons to animals.