

# Botany (BOT)

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**BOT 194. Individual Study. 1-3 Credits.**

**BOT 196. Field Experience. 1-15 Credits.**

**BOT 199. Special Topics. 1-5 Credits.**

**BOT 291. Seminar. 1-3 Credits.**

**BOT 292. Study Abroad. 1-15 Credits.**

**BOT 294. Individual Study. 1-5 Credits.**

**BOT 299. Special Topics. 1-5 Credits.**

**BOT 314. Plant Systematics. 3 Credits.**

Plant identification, nomenclature and classification are aspects of plant systematics. Modern plant systematics uses molecular approaches in addition to visual traits such as morphology to order plants in accordance with our current understanding of evolution and the 'Tree of Life'. Prereq: BIOL 151, 151L.

**BOT 315. Genetics. 3 Credits.**

Study of the basis of heredity with emphasis on structure and function of DNA and Mendelian genetics. 3 lectures. Cross-listed with BIOL 315, PLSC 315 and ZOO 315. F, S.

**BOT 315L. Genetics Laboratory. 1 Credit.**

Study of the basis of heredity with emphasis on structure and function of DNA and Mendelian genetics. 1 two-hour laboratory. Cross-listed with BIOL 315L, PLSC 315L, and ZOO 315L. F, S.

**BOT 372. Structure and Diversity of Plants and Fungi. 4 Credits.**

We will focus on structure and morphology of plants and fungi, as well as explore the diversity or adaptations plants and fungi have acquired to overcome a variety of environmental and habitat challenges.

**BOT 379. Study Tour Abroad. 1-6 Credits.**

**BOT 380. Plant Physiology. 3 Credits.**

Broad coverage of plant growth and metabolism including water relations, mineral nutrition, photobiology, carbon fixation, metabolic processes, stress responses, developmental biology, and growth regulation. Prereq: BIOL 150.

**BOT 391. Seminar. 1-3 Credits.**

**BOT 392. Study Abroad. 1-15 Credits.**

**BOT 393. Undergraduate Research. 1-5 Credits.**

**BOT 394. Individual Study. 1-5 Credits.**

**BOT 399. Special Topics. 1-5 Credits.**

**BOT 431. Intermediate Genetics. 3 Credits.**

Expansion of classical and molecular concepts of genetics; basic concepts of Mendelian, quantitative, population, molecular, and evolutionary genetics. 2 lectures. Prereq: PLSC 315. Cross-listed with PLSC 431 and ZOO 431. F {Also offered for graduate credit - see BOT 631.}.

**BOT 450. Range Plants. 3 Credits.**

Identification, distribution, and forage value of important U.S. range plants. 1 lecture, 2 two-hour laboratories. Prereq: BOT 314. Cross-listed with RNG 450. F {Also offered for graduate credit - see BOT 650.}.

**BOT 460. Plant Ecology. 3 Credits.**

Ecological structure, processes, and patterns observed with plant communities and populations as influenced by environmental conditions. Illustrations provided with local fieldwork. Prereq: BIOL 151, BIOL 151L. Cross-listed with RNG 460. {Also offered for graduate credit - see BOT 660.}.

**BOT 491. Seminar. 1-5 Credits.**

**BOT 492. Study Abroad. 1-15 Credits.**

**BOT 494. Individual Study. 1-5 Credits.**

**BOT 496. Field Experience. 1-15 Credits.**

**BOT 499. Special Topics. 1-5 Credits.**

**BOT 631. Intermediate Genetics. 3 Credits.**

Expansion of classical and molecular concepts of genetics; basic concepts of Mendelian, quantitative, population, molecular, and evolutionary genetics. 2 lectures. Cross-listed with PLSC 631 and ZOO 631. F {Also offered for undergraduate credit - see BOT 431.}.

**BOT 650. Range Plants. 3 Credits.**

Identification, distribution, and forage value of important U.S. range plants. 1 lecture, 2 two-hour laboratories. Cross-listed with PLSC 650. F {Also offered for undergraduate credit - see BOT 450.}.

**BOT 660. Plant Ecology. 3 Credits.**

Ecological structure, processes, and patterns observed with plant communities and populations as influenced by environmental conditions. Illustrations provided with local fieldwork. Cross-listed with RNG 660. {Also offered for undergraduate credit - see BOT 460.}.

**BOT 690. Graduate Seminar. 1-3 Credits.**

**BOT 695. Field Experience. 1-15 Credits.**

**BOT 696. Special Topics. 1-5 Credits.**

**BOT 716. Agrostology. 3 Credits.**

Identification and description of U.S. grasses and grass-like plants. 2 lectures, 2 two-hour laboratories. Cross-listed with RNG 716. F (even years).

**BOT 717. Aquatic Vascular Plants. 3 Credits.**

Identification of major aquatic vascular plants in the Northern Great Plains, utilization of major plant identification keys for the region, and descriptions of ecological roles of species for utilization in assessment, monitoring, and delineation. 1 lecture, 2 two-hour laboratories. Cross-listed with RNG 717. F (odd years).

**BOT 790. Graduate Seminar. 1-3 Credits.**

**BOT 791. Temporary/Trial Topics. 1-5 Credits.**

**BOT 793. Individual Study/Tutorial. 1-5 Credits.**

**BOT 795. Field Experience. 1-15 Credits.**

**BOT 796. Special Topics. 1-5 Credits.**

**BOT 797. Master's Paper. 1-3 Credits.**

**BOT 798. Master's Thesis. 1-10 Credits.**

**BOT 820. Advanced Cell Biology. 3 Credits.**

In-depth survey of cell biology, including studies of membranes, secretion cytoskeleton, cellular movement organelles, and gene regulation. Prereq: BIOC 702. Cross-listed with ZOO 820.

**BOT 862. Environment and Adaptation. 3 Credits.**

Environmental factors and responses evidenced with life-history patterns, genetic variation, population dynamics, species-interactions, and physiological processes.

**BOT 864. Ecological Processes. 3 Credits.**

Ecosystem dynamics (short-term, successional, evolutionary), component interactions, ecological energetics, and biogeochemical transfers, with consideration of anthropogenic aspects. Historical and theoretical viewpoints included.

**BOT 899. Doctoral Dissertation. 1-15 Credits.**