

# Botany

## LOWER DIVISION

**BOT 105. General Botany** (4). Structure, function, reproduction, life cycles, and phylogenetic relationships of major plant groups. Relationships of plants to other organisms and to human activities. [Weekly: 3 hrs lect, 3 hrs lab. GE.]

**BOT 198. Supplemental Instruction** (1). Collaborative work for students enrolled in introductory botany. [CR/NC. Rep.]

## UPPER DIVISION

**BOT 300. Plants & Civilization** (3). Plants that have played important roles in our economic, social, and cultural development. Ethnobotanical aspects of edible, medicinal, and psychoactive plants. [Prereq: completed lower division life science GE. Cannot be used to satisfy major requirements of biological sciences majors. GE.]

**BOT 310. General Plant Physiology** (4). Plant growth, development, reproduction, metabolism, photosynthesis, soil/water relations, inorganic nutrition, and translocation. Quantitative analysis of physiological functions. [Prereq: BIOL 105, BOT 105, and PHYX 106, or their equivalents. All with a grade of C- or higher. Weekly: 2 hrs lect, 6 hrs lab.]

**BOT 322/BOT 522. Developmental Plant Anatomy** (4). Plant structure and development, emphasis on seed plants; cells, tissues, and organs. Cell fate determination tissue patterning. Descriptive anatomy and molecular mechanisms. Applications of plant anatomy. Primary literature surveys, scientific communication. [Prereq: BOT 105 and BIOL 105.]

**BOT 330. Plant Ecology** (2). Principles governing structure and dynamics of plant populations and communities. Topics include community sampling, interspecific interactions, population viability analysis, and conservation issues. [Prereq: BIOL 330 or WLDF 301 or WLDF 310 or FOR 231 with a grade of C- or higher.]

**BOT 330L. Plant Ecology Lab** (1). Apply concepts and methods from BOT 330. [Prereq: BOT 330 (C).]

**BOT 350. Plant Taxonomy** (4). Identify ferns, gymnosperms, and flowering plants. Recognize families and key plants in the local flora. [Prereq: BIOL 105 and BOT 105, or their equivalents. Both with a grade of C- or higher. Weekly: 2 hrs lect, 6 hrs lab or field trip.]

**BOT 354. Agrostology** (4). Taxonomy, identification, and relationships of grasses of North America. [Prereq: BIOL 105 and BOT 105, or their equivalents. Weekly: 2 hrs lect, 6 hrs lab.]

**BOT 355. Lichens & Bryophytes** (4). Biology, ecology, natural history, and taxonomy of lichens, liverworts, hornworts, and mosses. Emphasis: epiphytic habitats. [Prereq: BOT 105 with a grade of C- or higher. Weekend field trips. Weekly: 2 hrs lect, 6 hrs lab.]

**BOT 356 / BOT 556. Phycology** (4). Biology and evolution of photosynthetic eukaryotes. Marine algal ecology. Field trips, identification skills, micro- and macroalgal sampling, data analysis, scientific writing. [Prereq: BOT 105, STAT 109, BIOL 105. Weekly: 2 hrs lect, 6 hrs lab.]

**BOT 358. Biology of the Microfungi** (2). Morphology, genetics, classification, ecology, and economic importance of yeasts and molds. Emphasis on isolation, culture, and lab techniques. [Prereq: BOT 105 with a grade of C- or higher or IA. Weekly: 1 hr lect, 3 hrs lab.]

**BOT 359. Biology of the Ascomycetes & Basidiomycetes** (2). Morphology, anatomy, classification, genetics, ecology, physiology, and economic importance of ascomycetes and basidiomycetes. [Prereq: BOT 105 with a grade of C- or higher or IA. Weekly: 1 hr lect, 3 hrs lab/fieldwork.]

**BOT 360. Biology of the Fleshy Fungi** (2). Systematics, ecology, toxicity, biological interactions, and culturing of mushrooms, polypores, chanterelles, boleti, and puffballs. Emphasis: Northern California fungi. [Prereq: BOT 105 with a grade of C- or higher or IA.]

**BOT 360L. Biology of the Fleshy Fungi Lab** (2). [Prereq: BOT 360 (C) or IA. Weekly: 6 hrs lab/fieldwork.]

**BOT 372 / BOT 572. Evolutionary Morphology of Plants** (4). Organismal biology, phylogeny, and evolution of vascular plants. Morphology, anatomy, development of extant and fossil plants. Cladistic theory and data analysis, survey of primary literature, scientific communication. [Prereq: BOT 105 and BIOL 105.]

**BOT 394. Forest Pathology** (3). Biology of diseases affecting trees in the forest and forest nursery. Emphases: fungi, mistletoes. [Prereq: BOT 105 with a grade of C- or higher or IA. Weekly: 1 hr lect, 6 hrs lab/fieldwork.]

**BOT 399. Supplemental Work in Botany** (1-3). For transfer student whose prior coursework is not equivalent to corresponding courses at HSU. Directed study. [Prereq: DA. Rep once.]

**BOT 450. Advanced Plant Taxonomy** (3). Field-oriented. Firsthand experience with flora of Northern California. Recognize important genera, use identification keys, and prepare herbarium specimens. [Prereq: BOT 350 or equivalent. Weekly: 2 hrs lect, 3 hrs lab.]

**BOT 458. Pollination Biology** (3). Pollinator diversity and behavior; plant mating systems; coevolution. Basic lab and field methods. Develop plans for senior thesis. [Prereq: BIOL 330 or WLDF 300 with a grade of D or better; plus any taxonomy course. Weekly: 2 hrs lect, 3 hrs lab.]

## GRADUATE

**BOT 520. Plant Tissue Culture** (4). Culture, somatic genetics, molecular biology, and genetic engineering of plant cells. Applications in plant biotechnology. Lab experience in callus and suspension cultures, haploid and diploid regeneration, protoplast fusion. [Prereq: BOT 310 and BIOL 340. Weekly: 2 hrs lect, 6 hrs lab. Must enroll concurrently in 1 unit of independent study.]

**BOT 521. Paleobotany** (3). Principles of reconstructing past terrestrial landscapes, environments, and plant communities. Techniques for finding, analyzing, and interpreting fossil evidence. [Prereq: BOT 105, GEOL 109; plus at least one of the following: FOR 230, FOR 231, BOT 350, GEOL 332, GEOL 350, GEOL 423, or IA.]

**BOT 522 / BOT 322. Developmental Plant Anatomy** (4). Plant structure and development, emphasis on seed plants; cells, tissues, and organs. Cell fate determination tissue patterning. Descriptive anatomy and molecular mechanisms. Applications of plant anatomy. Primary literature surveys, scientific communication. [Prereq: BOT 105 and BIOL 340 (C).]

**BOT 531. Advanced Plant Ecology** (4). Advanced concepts in plant ecology with emphasis on primary literature. Topics include population viability analysis, community ecology, invasive species, and disease ecology. [Prereq: BOT 330. Northern California and southern Oregon field trips included.]

**BOT 535. Forest Canopy Ecology** (3). Survey rapidly growing subdiscipline of ecology. Emphasis on research approaches in temperate and tropical forest canopies. Excursions to a variety of native forests. [Prereq: BOT 105, BOT 330, BIOL 330 (or their equivalents); and IA. Weekly: 2 hrs lect, 3 hrs lab. Frequent field trips, including weekends. Service fee.]

**BOT 553. Marine Macrophyte Ecology** (3). Ecology of marine algae and seagrasses. Lectures: from evolutionary ecology to diversity and ecosystem health. Labs: methods, student projects. [Prereq: BIOL 330 and BOT 356.]

**BOT 555. Lichenology** (4). Lichen morphology, life histories, classification, and ecology. Field and lab work recognizing local species. Epiphyte ecology. [Prereq: BOT 355 or equivalent. Weekly: 2 hrs lect, 6 hrs lab. Frequent field trips.]

**BOT 556 / BOT 356. Phycology** (4). Biology and evolution of photosynthetic eukaryotes. Marine algal ecology. Field trips, identification skills, micro- and macroalgal sampling, data analysis, scientific writing. [Prereq: BOT 105 and BIOL 330. Weekly: 2 hrs lect, 6 hrs lab.]

**BOT 572 / BOT 372. Evolutionary Morphology of Plants** (4). Organismal biology, phylogeny, and evolution of vascular plants. Morphology, anatomy, development of extant and fossil plants. Cladistic theory and data analysis, survey of primary literature, scientific communication. [Prereq: BOT 105 and BIOL 307 (C).]

**BOT 580 / BOT 580L. Selected Topics in Botany** (1-3). Topics on current advances as demand warrants. [Prereq: grad standing and IA. Rep.]