Botany (BOT)

BOT 1800
Introduction to Horticulture
3

Introduces students to the horticulture industry including plant propagation, landscape management, and greenhouse management. Provides students with information to care for house plants and to design and care for home gardens.

BOT 2050 **BB**
Field Botany
3
* Prerequisite(s): BIOL 1010 or BOT 2400 recommended

Covers the classification, identification, and ecology of woody plants with an emphasis on native trees and shrubs. Includes field trips and laboratory work. Designed for both biology majors and non-majors. Requires student plant collection.Course Lab fee of $97 for transportation applies.

BOT 2100 **BB**
Flora of Utah
3
* Prerequisite(s): BIOL 1010 is recommended

Focuses on vascular plant taxonomy and is intended for botany and biology majors or anyone interested in learning about plants native to Utah. Covers the principles of plant classification, nomenclature, and identification with an emphasis on Utah flowering plants. Includes field trips and weekly laboratory. Requires student plant collection. Course Lab fee of $97 for transportation applies.

BOT 2400 **BB**
Plant Kingdom
4
* Prerequisite(s): BIOL 1010 or BIOL 1610 with a minimum grade of C-

Surveys of the Divisions (Phyla) traditionally studied by botanists, emphasizing structure, reproduction, systematics, and evolution. Completers should be familiar with the morphological features of the major prokaryotic, fungal, algal, and plant groups. Includes a weekly laboratory. Course Lab fee of $50 for supplies applies.

BOT 290R
Special Topics In Botany
1 to 4
* Prerequisite(s): BIOL 1010 or higher or Instructor Approval

Explores and examines special topics relating to the field of Botany. Emphasizes areas of rapid growth in Botany or current importance to society. May be repeated for a total of six credits toward graduation.

BOT 295R
Independent Studies in Botany
1 to 4
* Prerequisite(s): At least 3 credit hours of college level biology, approval of a faculty mentor, and approval of the department chair

Provides individual studies in botany under the direction of a faculty mentor. May include literature reviews, original research, and participation in ongoing departmental projects. Introduces students to the methodology of botany research. Requires written and oral communication of scientific information. May be repeated for up to 4 credits toward graduation.

BOT 3210
Controlled Environment Experiments in Horticulture
3
* Prerequisite(s): BIOL 1610, BIOL 1615, MATH 1050, and University Advanced Standing

Introduces students to conducting greenhouse or growth chamber experiments. Discusses basic greenhouse design and components. Requires students to develop, conduct and analyze basic greenhouse research with the help of the instructor.

BOT 3340
Plant Biology
4
* Prerequisite(s): BIOL 1620 and (CHEM 1120 or CHEM 1220 or higher) with a minimum grade of C- in each, and University Advanced Standing

Covers structure-function interrelationships from the cellular to whole plant level, including aspects of plant anatomy, physiology, reproduction, growth and development with emphasis on the angiosperms (flowering plants). Designed for Biology Education majors and others wishing a one semester upper division combined plant anatomy/plant physiology course. Includes weekly laboratory. Course lab fee of $30 for supplies applies.

BOT 3500
Mycology
4
* Prerequisite(s): University Advanced Standing

Provides an introduction to the fungal kingdom, focusing on understanding evolutionary relationships and adaptations, and in gaining an appreciation for the environmental, industrial, and medical functions that fungi play. Actively explores current primary literature and research methods in mycology. Course Lab fee of $65 for materials applies.

BOT 3710
Plant Propagation
3
* Prerequisite(s): BIOL 1620 and University Advanced Standing. BOT 1800 recommended

Provides students with an understanding of the basic principles of plant propagation. Emphasizes specific techniques for various types of plants in their appropriate environments. Includes propagating from seed, bulbs, layering, vegetative cuttings, grafting and micropropagation. Focuses on the science behind various propagation methods. Course Lab fee of $100 for materials applies.

BOT 3800
Ethnobotany WE
4
* Prerequisite(s): BIOL 1620 with a C- or higher and University Advanced Standing

Analyzes and evaluates interactions between people and plants. Discusses how plants are used in medicine, industry, food, and culture. Covers basic concepts, including literature and field research techniques, phytochemical analysis, and ethical issues such as bioprospecting and conservation. Includes class discussions, student-led activities, oral presentations, and a final project. Course lab fee of $15 applies.

BOT 4050
Plant Ecology
3
* Prerequisite(s): BIOL 1620 with a C- or higher, and University Advanced Standing
* Corequisite(s): BOT 4055

Studies the interrelationships between plants and their environment, including population, community, and ecosystem processes. Specific topics include adaptation to abiotic factors, plant life history patterns, species interactions such as competition and herbivory; community structure, diversity, and dynamics; biome structure and distribution, and energy flow and nutrient cycles in ecosystems. Presents the impact of humans on plant communities and ecological processes.

BOT 4055
Plant Ecology Laboratory
1
* Prerequisite(s): University Advanced Standing
* Corequisite(s): BOT 4050

Laboratory component of Plant Ecology in which students acquire skills in the collection, analysis, and presentation of ecological data. Includes field sampling of plant populations, laboratory and greenhouse experiments, and scientific writing. Field trips, including one weekend field trip, are required. Course Lab fee of $97 for lab, transportation applies.

BOT 4100
Plant Anatomy
4
* Prerequisite(s): BIOL 1620 and BIOL 1625 with a minimum grade of C- in each, and University Advanced Standing

Covers the structure and development of cells, tissues and tissue systems in stems, roots, leaves, and reproductive structures in vascular plants, with emphasis on the angiosperms. Discusses primary and secondary plant body, including wood anatomy. Includes weekly laboratory. Course lab fee of $47 for supplies applies.

BOT 4200
Plant Systematics
3
* Prerequisite(s): (BOT 2050 or BOT 2100), (BIOL 1010 or BIOL 1620) with a C- or better in each course, and University Advanced Standing

Covers the principles of plant classification and the techniques employed in gathering and analyzing taxonomic data. Focuses on the essentials of phylogenetic analysis in plants and on the evolutionary relationships between the major groups of vascular plants. Includes a weekly laboratory. Course Lab fee of $47 for materials applies.

BOT 4300
Native Trees and Shrubs of Utah
3
* Prerequisite(s): BOT 2050 or BOT 2100; University Advanced Standing

Explores the diversity of woody plants of Utah, the plant communities they inhabit, and the ecological roles they play. Requires field trips; may include overnight trips as well as scheduled labs. Course Lab fee of $103 for transportation applies.

BOT 4430
Plant Pathology
3
* Prerequisite(s): BIOL 1610 with a minimum grade of C- and University Advanced Standing

Teaches the fundamental concepts of plant pathology. Describes plant disease symptoms and organisms that cause those diseases and methods of control and diagnosis of diseases. Includes required laboratory. Course fee of $20 applies.

BOT 4500
Introduction to Grasses
3
* Prerequisite(s): BOT 2100 or BOT 2050 (with a C- or better); University Advanced Standing

Discusses grasses and their relatives, grass anatomy, taxonomy, and ecology. Emphasizes identification techniques. Includes heavy lab component and required field trips. Requires student plant collection.

BOT 4600
Plant Physiology WE
3
* Prerequisite(s): BIOL 1620 and CHEM 1220 both with a minimum grade of C-, and University Advanced Standing
* Corequisite(s): BOT 4605

Covers the physiological processes occurring in plants. Includes experimental techniques used in the investigation of processes such as photosynthesis, water and solute transport, tissue culture, growth regulation and responses and plant hormones. Involves problem solving and critical thinking skills.

BOT 4605
Plant Physiology Laboratory
1
* Prerequisite(s): BIOL 1610, BIOL 1615, and University Advanced Standing
* Corequisite(s): BOT 4600

Focuses on laboratory aspects of topics in BOT 4600. Covers experimentational methods for studying plant physiological processes such as respiration, photosynthesis, mineral nutrition, transpiration and tissue-water relations. Course Lab fee of $35 applies.

BOT 4650
Greenhouse Management
3
* Prerequisite(s): CHEM 1220, BIOL 1620, and University Advanced Standing; BOT 1800 recommended

Gives students an in-depth understanding of greenhouse operations, infrastructure and management. Covers greenhouse structures components and controls. Studies plant growth and development within controlled environments. Informs students about plant nutrition, plant substrates, watering, and lighting strategies used in greenhouse management. Course Lab fee of $97 applies.

BOT 4700
Plant Tissue Culture WE
4
* Prerequisite(s): BIOL 1620 with a minimum grade of C- and University Advanced Standing

Teaches principles of plant micro propagation techniques. Prepares the student to design and carry out their own micro propagation systems for the cultivation of a particular plant species. Course lab fee of $60 applies.

BOT 4800
Plant-Herbivore Interactions
3
* Prerequisite(s): BIOL 1620 with a C- or higher, and University Advanced Standing

Studies the diversity of interactions between plants and herbivores, and how these interactions can affect population, community, and ecosystem-level dynamics. Topics include plant defenses, tritrophic interactions, plant succession, and co-evolution. Implications of plant - herbivore interactions to natural resource management are considered.

BOT 481R
Botany Internship
1 to 5
* Prerequisite(s): BIOL 1620 with a C- or higher, Instructor Approval, and University Advanced Standing

Allows biology majors to earn credit while obtaining practical and research experience as an intern in a government, nonprofit, private agency, or with an approved employer. Must be supervised by agency representative and faculty advisor. Department chairperson approval required and written contracts must be completed and signed. May be repeated for a maximum of 5 credits toward graduation. May be graded credit/no credit.

BOT 489R
Student Research
1 to 4
* Prerequisite(s): BIOL 1620, CHEM 1210, Junior or Senior Standing, Instructor Approval, and University Advanced Standing

Provides guided research studies in botany under the direction of a Biology Department faculty mentor. Includes any combination of literature reviews, original research, and/or participation in ongoing departmental projects. Involves students in the methodology of original botanical research. Requires preparation and presentation of oral and/or written reports. May culminate in results that will form the basis of the senior thesis in the major, if thesis option is chosen. May be repeated for 9 credits toward graduation.

BOT 4900
Museum-Based Taxonomy and Biodiversity Research
3
* Prerequisite(s): BIOL 1620 and (BOT 2050 or BOT 2100 or BOT 2400) with a C- or higher, and University Advanced Standing

Focuses on botany and utilizes the UVU natural history museum herbarium and other online natural history resources. Employs museum-based pedagogical tools and will evaluate, define and practice taxonomic applications in biodiversity research, including how floras, faunas and mycotas have been used by scientists. Uses floristics to assess outputs (dissemination) and impacts as well as assess technology on field data collection, uses, potential, and how might collections be used in the future.

BOT 490R
Special Topics in Botany
1 to 4
* Prerequisite(s): BIOL 1620 with a C- or higher, and University Advanced Standing

Explores and examines special topics relating to botany. May emphasize areas of rapid growth in botanical science or areas not covered in other courses. May be repeated for a total of 8 credits toward graduation.

BOT 499R
Senior Thesis
1 to 2
* Prerequisite(s): ENGL 2010, Junior standing, Instructor Approval, and University Advanced Standing

Is for students who are nearing completion of a baccalaureate degree in Botany with the thesis option. Assists students who are writing a thesis based only on library research, or those who have performed laboratory/field research under BIOL 489R or BOT 489R. Provides experience in critically analyzing published literature and, if laboratory/field research was performed, comparing research results with the scientific literature. Is supervised by an appointed faculty member of the Department of Biology. Requires a technically accurate report on one's findings. Includes the opportunity to present the research results to students, faculty and the community at a Department of Biology seminar. May be repeated once for a total of 2 credits toward graduation.