

Horticulture (HORT)

Course information contained within the Bulletin is accurate at the time of publication in June 2025 but is subject to change. For the most up-to-date course information, please refer to the Course Catalog.

HORT 1001. Fundamentals of Horticulture. 2 Credit Hours.

Principles of horticultural science; basic techniques of horticulture, including soil management, plant propagation, selection and maintenance of plant materials, and landscape design. NOTE: Horticulture 1001 (0015), unless it is the student's first Landscape Architecture/ Horticulture course or part of a successful credit certificate, is not applicable toward degree credit.

Course Attributes: SI

Repeatability: This course may not be repeated for additional credits.

HORT 1211. Woody Plants I. 3 Credit Hours.

The study of native and introduced trees, shrubs, and vines that are the foundation of our natural and designed landscapes with emphasis on identification, culture, association in plant communities, and appropriate use.

Course Attributes: SI

Repeatability: This course may not be repeated for additional credits.

HORT 1212. Woody Plants II. 3 Credit Hours.

Study of native and introduced trees, shrubs, and vines that are the foundation of our natural and designed landscapes with emphasis on identification, culture, association in plant communities, and appropriate use. The focus of this course is on conifers and broadleaf evergreens.

Course Attributes: SI

Repeatability: This course may not be repeated for additional credits.

HORT 1555. Equipment Maintenance. 3 Credit Hours.

This course covers proper operation, repair, and normal maintenance procedures for motorized equipment, including tractors, mowers, tillers, shredders, sprayers, chain saws, and hand-held trimmers and blowers.

Repeatability: This course may not be repeated for additional credits.

HORT 1566. Horticulture Business Management. 3 Credit Hours.

Emphasis on managerial philosophies and responsibilities including: ethics; development of staff; problem solving; scheduling; budgets; tax laws; personnel recruiting and networking; public relations and marketing; reading specifications and blueprints; estimating and bidding; and writing business plans.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of C- (except where noted) in (MATH 0701, any MATH course numbered 0702 to 4999 (D- or higher; may be taken concurrently), 'Y' in MC3, 'Y' in MC4, 'Y' in MC5, 'Y' in MC6, 'Y' in MC3A, 'Y' in MC6A, 'Y' in MATW, 'Y' in MC3S, 'Y' in MC3D, 'Y' in MC3O, 'Y' in MC3T, or 'Y' in MC6T)

HORT 1651. Art of Floral Design I. 3 Credit Hours.

A lecture-studio course in which students learn the aesthetic principles of design firsthand as they create a series of floral compositions from natural and artificial materials. Development of a critical eye by analyzing and critiquing their own and each other's work. Also considers traditions of floral design as it has been practiced in Eastern and Western cultures. NOTE: This course can be used to satisfy the university Core Arts (AR) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university GenEd requirements. See your advisor for further information.

Course Attributes: AR

Repeatability: This course may not be repeated for additional credits.

HORT 1652. Art of Floral Design II. 3 Credit Hours.

Applies the philosophy of the relationships of nature and creativity to commercial design and compositions for home and exhibition. Also engages students in further study and experimentation in assembling plant materials and found objects indigenous to classical styles as well as considering the influences of avant-garde design from the art world.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 1651.

HORT 2114. Soils. 3 Credit Hours.

The physical, chemical, and biological properties of soils are examined, considering water/mineral, organism/air relationships. Soil morphology, classification, genesis, and geographic distribution are studied. An understanding of soil horizon from textbook to actual site soil pits is developed.

NOTE: This course can be used to satisfy the university Core Science & Technology Second Level (SB) requirement. To determine if this course in combination with another course can satisfy the GenEd Science & Technology requirement, see your advisor.

Course Attributes: SB

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in ((CHEM 1021 and CHEM 1023), EES 1001, or BOT 1111)

HORT 2221. Herbaceous Plants I. 3 Credit Hours.

The identification, culture, and appropriate designs for native and cultivated annuals, perennials, bulbs, and wildflowers; collaboration with nature in designing and maintaining ecologically sound gardens.

Course Attributes: SE, SF

Repeatability: This course may not be repeated for additional credits.

HORT 2222. Herbaceous Plants II. 3 Credit Hours.

Topics include: identification, culture, and creation of environmentally appropriate designs for native and cultivated annuals, perennials, herbs, and roses; cost analysis; designing and maintaining ecologically sound gardens.

Course Attributes: SE, SF

Repeatability: This course may not be repeated for additional credits.

HORT 2256. Interior Landscaping. 3 Credit Hours.

Explores the culture and use of foliage and flowering plants indoors, management of the interior environment for plants, plant identification, and business practices for interior landscapers.

Repeatability: This course may not be repeated for additional credits.

HORT 2323. Greenhouse Management. 3 Credit Hours.

Introduces the basic concepts and principles utilized in greenhouse operation and management. Centers on topics such as greenhouse structure, environmental control, substrate, fertilization, watering, light and temperature, pest and disease control, growth control, and post production management. Focuses on managing the greenhouse environment to maximize the productivity of crops and examines the latest trends in the greenhouse industry.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in BOT 1111.

HORT 2324. Plant Propagation. 3 Credit Hours.

Principles and practices of sexual and asexual methods of propagation, including micropropagation.

Repeatability: This course may not be repeated for additional credits.

HORT 2334. Food Crops I. 3 Credit Hours.

An introductory hands-on course in sustainable food production, handling, and distribution of crops. Food tasting is an integral part of this course.

Course Attributes: SE, SF

Repeatability: This course may not be repeated for additional credits.

HORT 2353. Food Crops II. 3 Credit Hours.

The focus of this course is on Community Supported (Sustainable) Agriculture (CSAs), food co-ops, farmers' markets, and restaurants.

Course Attributes: SE, SF, SS

Repeatability: This course may not be repeated for additional credits.

HORT 2356. Greenhouse Production. 3 Credit Hours.

Considers scheduling greenhouse crop production and cultural requirements of several major floricultural plants, finished plants, liners and plugs, including the latest cultivars used in urban nursery/garden centers. Identification of greenhouse grown plant material and field trips to innovative growers are also components of the course.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 2323.

HORT 2366. Nursery Operation, Management, and Production Techniques. 3 Credit Hours.

Includes an overview of the nursery industry and examines the management and operation of wholesale and retail nurseries, and the production of plants in both container and field-grown conditions.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 1212.

HORT 2552. Trees in the Urban Landscape. 2 Credit Hours.

Urban life is tough on trees - pollution, weather extremes, neglect, traffic accidents, construction, and vandalism all take their toll. This course provides an overview of Western civilization's efforts to integrate trees into the urban landscape, with a particular emphasis on Philadelphia's urban forest. Urban treescapes through the nineteenth and twentieth century are explored from the perspective of social, cultural, economic, political and ecological influences. Philadelphia's Center City and its adjacencies serve as a laboratory for field walks, tree identification exercises, and for exploring urban forestry practices and policies.

Course Attributes: SE, SF, SP, SS

Repeatability: This course may not be repeated for additional credits.

HORT 2554. RejuvINATURE: Improving Health and Well-being. 1 Credit Hour.

The positive effects of natural environments on the health and well-being of humans is becoming well documented. This unique course combines overviews and discussions about relevant theories and research on the role of nature in health, as well as experiential learning via visits to the Ambler Arboretum and other self-chosen nature excursions. Students will read important works that span from early advocates for the natural environments and conservation such as Thoreau and Muir to modern areas of research on mood and psychological well-being. Students will explore the effect of natural environments on their own well-being and will write about their experiences.

Repeatability: This course may not be repeated for additional credits.

HORT 2555. Arboriculture. 3 Credit Hours.

Basic biology and care of trees; diagnosis of common pests, diseases, mechanical, nutritional, and environmental problems. Types and use of proper equipment for climbing, pruning, maintenance, and structural requirements. Professional training includes insurance, liability, tree evaluation, job estimates, tree inventories, record keeping, and working with municipalities and community groups.

Course Attributes: SI

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 1211.

HORT 2556. Introduction to Beekeeping. 3 Credit Hours.

Introduces students to the science and art of keeping honey bees and the critical role played by honey bees in sustaining our environment by pollinating food crops and wild flowers. Topics include: establishment of colonies; seasonal management; honey production; and environmental challenges to honey bee health, including pests, diseases, and insecticides/herbicides. The laboratory portion makes use of the apiary located on the Ambler Campus, allowing hands-on application of course topics.

Course Attributes: SE, SF

Repeatability: This course may not be repeated for additional credits.

HORT 2565. Turf Management. 3 Credit Hours.

The establishment and maintenance of turf grasses under varying soil and environmental conditions, particularly urban conditions. The identification of species and newer strains of grasses and their appropriate uses. An environmental approach to lawn maintenance and the responsible use of fertilizers, pesticides, and herbicides is stressed.

Repeatability: This course may not be repeated for additional credits.

HORT 2575. Introduction to Public Horticulture. 3 Credit Hours.

Introduction to principles of horticultural management and administration in the public realm. Examines the activities of botanic gardens and societies, arboreta, zoos, community garden groups, and parks departments. Covers the basic principles of botanic garden management, plant curatorship, collection care, public education, facility design, business management, and long-range planning. NOTE: Designed for students considering a career in public horticulture and those already associated with non-profit institutions who would like to learn more about the field.

Repeatability: This course may not be repeated for additional credits.

HORT 2653. Art of Floral Design III. 3 Credit Hours.

Deeper exploration of the principles of composition and the study of symbolism, periods, and movements of design, as well as construction with plant materials, found objects, lighting, and other media.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 1652.

HORT 2655. Flower Shop Management. 3 Credit Hours.

The business management of the retail flower shop; design of unusual floral displays; handling flowers, plants, and accessories; and making corsages, sprays, bouquets, and wedding decorations.

Repeatability: This course may not be repeated for additional credits.

HORT 2666. Designing with Perennials. 3 Credit Hours.

Perennial designs involve an understanding of the site, respect for adjacent areas, maintenance concerns, and client desires. Student's knowledge of herbaceous plants is used as a basis for developing creative, ecologically sensitive design solutions.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 2221.

HORT 2753. Introduction to Horticultural Therapy. 3 Credit Hours.

Definition and history of Horticultural Therapy (HT). Presentation of HT programs, such as social, therapeutic and vocational. HT population types are discussed including physically and developmentally disabled, older adults, children, visually impaired, incarcerated populations, and those in healthcare settings. Design of therapeutic spaces, garden design characteristics, universal design and site assessment. Overview of the profession.

Repeatability: This course may not be repeated for additional credits.

HORT 2754. Horticultural Therapy Skills. 3 Credit Hours.

Developing horticulture skills and techniques for use in therapy programs for diverse client populations. HT programming to include: setting goals and objectives; assessment and evaluation; use of adaptive tools and devices; use of plant materials and supplies for HT programs.

Repeatability: This course may not be repeated for additional credits.

HORT 2755. Horticultural Therapy Program Management. 3 Credit Hours.

Examines Horticultural Therapy programs and the impact of gardening, plants, and nature on diverse client populations. Site visits to local facilities. Research into funding sources, writing proposals for programs, developing program budgets, and grant writing.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in (HORT 2753 or HORT 2754)

HORT 2850. Special Topics in Horticulture/Landscape Architecture I. 3 Credit Hours.

Study of topics and problems in horticulture, landscape architecture, and related disciplines. NOTE: Students may obtain a description of the current version at the department office and in the schedule of classes. This course may be repeated for credit.

Repeatability: This course may be repeated for additional credit.

HORT 2860. Special Topics in Horticulture/Landscape Architecture II. 3 Credit Hours.

Study of topics and problems in horticulture, landscape architecture, and related disciplines. NOTE: Students may obtain a description of the current version at the department office and in the schedule of classes. This course may be repeated for credit.

Repeatability: This course may be repeated for additional credit.

HORT 2870. Special Topics. 1 to 3 Credit Hour.

Variable offerings from semester to semester of selected topics not part of the regular listing of courses. The topic can be in an area of specialization of a faculty member or an examination of a current development in the field. NOTE: Students may obtain a description of the current version at the department office and in the schedule of classes. This course may be repeated for credit.

Repeatability: This course may be repeated for additional credit.

HORT 2881. Cooperative Education. 3 Credit Hours.

A program of full-time summer work in horticulture or landscape design for a minimum of seven weeks. Cooperative Education gives the student the opportunity to integrate academic learning with practical work experience, thereby broadening his or her skills and perspectives.

Repeatability: This course may be repeated for additional credit.

HORT 2883. Directed Studies in Horticulture. 1 to 3 Credit Hour.

Specialized topics from various areas of horticulture in which individuals will work independently and be supervised by a faculty member.

Repeatability: This course may be repeated for additional credit.

HORT 2982. Honors Projects in Horticulture. 1 to 3 Credit Hour.

For exceptional students interested in pursuing independent, in-depth study. Credits based on the quantity and quality of work fulfilling the established course outline.

Course Attributes: HO

Repeatability: This course may be repeated for additional credit.

HORT 3256. Advanced Plant Materials. 3 Credit Hours.

Advanced studies in woody and herbaceous plants, including identification of less commonly used material, late spring and summer aspects of garden design, maintenance, and restoration. Practical aspects of this course include weekly field trips, actual garden seed sowing, and garden maintenance.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in (HORT 1212 and HORT 2221)

HORT 3423. Applied Entomology. 3 Credit Hours.

In lecture and laboratory, students learn the basic diagnostic skills for identifying pest problems. Integrated Pest Management (IPM) is emphasized as the approach for managing pests of plants grown in stressful environments.

Course Attributes: SF

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 1212.

HORT 3424. Applied Plant Pathology. 3 Credit Hours.

Explores plant pathological theories and practices. The causes of plant diseases, such as fungi, bacteria, virus, nematodes, plant parasites, as well as environmental stresses, also are examined. Diagnostic skills for determining causes and current management measures are highlighted through lectures and laboratory work. Prepares students to solve horticultural pathology problems.

Course Attributes: SI

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in BOT 1111.

HORT 3456. Tree Pathology. 3 Credit Hours.

A study of tree health and management. Infectious and noninfectious diseases of shade trees are studied in lectures and in-depth field trips. Emphasizes the effects of urban stress, economically important diseases, and complex tree declines.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in BOT 1111.

HORT 3514. Landscape Restoration. 3 Credit Hours.

Develops an ecologically based understanding of how to establish, restore, and manage meadows, forest, and wetland systems. Emphasizes natural processes and integrating the built landscape with our natural systems, and also explores plant communities and wildlife habitats of Southeastern Pennsylvania. Students participate in the management of natural landscapes on the Ambler campus and nearby parkland.

Course Attributes: SE, SF

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 1212.

HORT 3523. Landscape Management. 3 Credit Hours.

Students develop an understanding and practical experience with professional, innovative, and appropriate landscape management topics. Major focus is given to site analysis, pruning, pest identification and management, nutrition, watering and irrigation, and other maintenance techniques. Hands-on practical experience and theory combine in project-based educational opportunities.

Course Attributes: SI

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of D- in HORT 1212.

HORT 3882. Independent Study. 1 to 3 Credit Hour.

Explorative study or research not met in any established course. Initiated by the student, the project must be sponsored by a faculty member with an approved agreement outlining the content and requirements, including readings, meetings, and papers. NOTE: Special authorization required for all students. Students must have the agreement of a faculty sponsor and must submit a formal proposal to this faculty member and Department before registering for the course.

Repeatability: This course may be repeated for additional credit.

HORT 3885. Internship. 1 Credit Hour.

A minimum of one semester or 350 hours of employment is required in an area related to the student's horticultural field of interest. Should provide a meaningful work experience. NOTE: The internship should be taken between the sophomore and junior years.

Repeatability: This course may be repeated for additional credit.

HORT 4896. Senior Seminar. 3 Credit Hours.

Using a broad range of critical thinking skills derived from previous course experiences, students write and present an in-depth research paper on a horticultural topic. In preparation for graduation, students develop a cover letter, resume, and curriculum vitae and discuss professional internships. NOTE: Fulfills the capstone writing intensive requirement for the B.S. in Horticulture.

Course Attributes: WI

Repeatability: This course may be repeated for additional credit.

Pre-requisites: Minimum grade of C- in BOT 2121.

HORT 8261. Native Plant Ecology. 3 to 4 Credit Hours.

This course focuses on native and introduced hardy (naturalized) trees, shrubs, vines, and herbaceous plants that comprise plant communities and serve as the foundation of natural, designed, and restored landscapes. Students distinguish between native, naturalized, and non-native plant communities and identify vital characteristics associated with plant community health. The course emphasizes identification, culture, association, appropriate use of plant communities, and on-site propagation during restoration. Students develop an ecologically based understanding of how to establish, restore, and manage healthy plant communities. Field trips allow students to observe and document plants and plant communities in situ. Note: Prior to Fall 2024, this course was titled "Native Woody Plant Identification."

Course Attributes: SF

Repeatability: This course may not be repeated for additional credits.

HORT 8514. Landscape Restoration. 3 Credit Hours.

Students develop an ecologically based understanding of how to establish, restore, and manage meadows, forests, and wetland systems. The course emphasizes natural processes and how to integrate the built landscape with natural systems. Students also explore plant communities and wildlife habitats of Southeastern Pennsylvania. By the end of the course, students know the components of a restoration plan and have developed a plan for a real site.

Course Attributes: SF

Repeatability: This course may not be repeated for additional credits.

Pre-requisites: Minimum grade of C- in HORT 8261.