

Horticulture (HORT)

Courses

HORT 1103. Plants, People and You. 3 Hours.

Plants, People and You is a course designed to introduce students to the world of horticulture, with an emphasis on how plants can be used for food, fun, health, economic value or environmental contribution. (Typically offered: Fall)

HORT 1303. Introduction to Floral Design. 3 Hours.

Students in this introductory class in Floral Design will learn basic design elements such as line, form, mass, balance, texture and color as used in floral art. Students will gain an appreciation of the various types and species of flowers and foliage used in various floral arrangements such as bouquets and centerpieces. In addition, students will learn common post-harvest handling techniques of fresh cut floral plant material to prolong vase-life from the purchasing stage to the final design. Corequisite: Lab component. (Typically offered: Spring)

HORT 2003. Principles of Horticulture. 3 Hours.

A course introducing students to the biological and technologies underlying the propagation, production, handling and use of horticultural crops, turf and landscape plants. Students will be introduced to the various disciplines and commodities of horticulture. The use of plants for the benefit of humankind because of their aesthetic and nutritional value will be explored. Previous instruction in Plant Science, Plant Biology, or general Botany is strongly encouraged. Corequisite: Lab component. (Typically offered: Spring)

HORT 2101. Horticultural Career Development. 1 Hour.

A course which presents concepts necessary for developing a career and becoming a professional in horticulture industries or businesses. Concepts of goal setting, effective communication and interpersonal skills, behaviors and performance, portfolio and resume, development and job hunting skills will be presented. (Typically offered: Spring)

HORT 2303. Introduction to Turfgrass Management. 3 Hours.

An introductory course in turfgrass management emphasizing turfgrass growth, adaptation, and management. Methods for establishment, fertilization, mowing, cultivation, irrigation, and pest management are presented, and their impact on culture of lawns, golf courses, athletic fields, and other managed turf areas discussed. (Typically offered: Fall)

HORT 3103. Woody Landscape Plants. 3 Hours.

Identification, climatic adaptation and landscape design values of woody ornamental trees, shrubs and vines. Lecture 2 hours per week. Corequisite: Lab component. (Typically offered: Fall)

HORT 3113. Herbaceous and Indoor Plant Materials. 3 Hours.

Identification, culture, and use of annuals, perennials in landscapes and foliage plants in interiors. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. (Typically offered: Spring Odd Years)

HORT 3123. International Horticulture. 3 Hours.

Considerable globalization of agriculture has occurred over the past several decades, especially in the area of horticultural crops. This course provides a base of knowledge of the international horticulture industry focusing on principles and practices of development and trade of horticultural crops. (Typically offered: Spring)

HORT 3203. Sustainable Landscape Practices. 3 Hours.

New methods of landscape management are required to restore or protect the ecological services provided by developed landscapes. This course is focused on methods for sustainable land management. Included as part of the curriculum is a survey of sustainable management as it applies to site resources, including water, nutrients, energy and biodiversity. Retrofitting existing development, organic lawn, tree, and shrub care, successional landscapes, permaculture, sustainable material selection, and best available equipment will be covered in depth. Prerequisite: HORT 2003. (Typically offered: Fall)

HORT 3303. Vegetable Crops. 3 Hours.

General course in vegetable crops with attention to the principles underlying methods of production and handling related to yields and quality of the products. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: HORT 2003 and CSES 2203. (Typically offered: Fall Odd Years)

HORT 3403. Turfgrass Management. 3 Hours.

Cultural and management practices of commercial and residential lawns. Principles and practices of mowing, fertilizing, irrigating, and control of weed, disease, and insects. Identification of turfgrass; equipment selection. Corequisite: Lab component. Prerequisite: HORT 2303. (Typically offered: Spring Even Years)

HORT 3503. Sustainable and Organic Horticulture. 3 Hours.

This course will provide a base of knowledge of the principles and practices of sustainable, organic, and alternative horticulture management systems. The class will review and evaluate topics including soil biological processes (compost, humus and fertility), pest management, alternative farming systems, and organic agriculture. After this foundation information is studied, the class will study applications of sustainable agriculture principles to production systems such as greenhouse vegetable production, ornamental production, fruit production, and landscape and turf management. (Typically offered: Fall Even Years)

HORT 400V. Special Problems. 1-6 Hour.

Original investigations on assigned problems in horticulture. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HORT 401V. Special Topics in Horticulture, Turf or Landscape. 1-6 Hour.

Topics related to horticulture, turfgrass or landscape science or management not covered in other courses or a more intensive study of a specific topic. (Typically offered: Irregular) May be repeated for degree credit.

HORT 402V. Horticulture Judging and Competition Activity. 1-6 Hour.

Training for and participation on horticultural identification, judging and competitive teams. Prerequisite: HORT 2003. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HORT 4033. Professional Landscape Installation and Construction. 3 Hours.

Principles and practices involved in landscape installation and construction. Topics covered include sequencing construction activities, protecting existing trees, landscape soils, selecting plants, planting and transplanting plant materials, wood construction, cement and masonry construction, and low-voltage lighting. Lecture 3 hours per week. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003. (Typically offered: Fall Even Years)

HORT 4043. Professional Landscape Management. 3 Hours.

Principles and practices of landscape management and maintenance. Topics include low maintenance and seasonal color design, pruning and hazard tree management, water and fertilizer management, pesticide use, and other maintenance activities. Basic elements of marketing, specifications and contracts, estimating, personnel management, and equipment selection and acquisition relevant for landscape services will be introduced. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003 and HORT 3103. (Typically offered: Fall Odd Years)

HORT 4103. Fruit Production Science and Technology. 3 Hours.

The management technologies and cultural practices of fruit crops including (but not limited to) blueberries, blackberries, raspberries, strawberries, grapes, peaches, and apples will be presented. The underlying scientific principles of crop genetics, nutrition, and physiology will be presented as a basis for making management decisions in fruit crop productions. Corequisite: Lab component. Prerequisite: HORT 2003. (Typically offered: Spring Odd Years)

HORT 4153. Sustainable Techniques in Urban Horticulture. 3 Hours.

Sustainable Techniques in Urban Horticulture is a practicum based course where the student will learn basic techniques in sustainable production of horticultural crops in an urban or small-scale environment. Crops may include vegetables, cut flowers, or small fruits. This course is intended for students who do not have an agricultural production background or for those students wanting to learn more about the production of high-value horticultural crops under sustainable production systems. (Typically offered: Summer)

HORT 4403. Plant Propagation. 3 Hours.

Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: HORT 2003. (Typically offered: Spring)

HORT 4403H. Honors Plant Propagation. 3 Hours.

Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: HORT 2003 and honors standing. (Typically offered: Spring)

This course is equivalent to HORT 4403.

HORT 4413. Horticulture Physiology. 3 Hours.

This course provides students with a background into the physiological processes of plants with an emphasis on horticultural crops and how the processes relate to horticultural crop production practices. Among the topics covered are photosynthesis, respiration, water relations and morphogenesis. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Spring)

HORT 4503. Sustainable Nursery Production. 3 Hours.

This course addresses issues and practices involved in production of quality woody nursery crops (e.g. trees and shrubs produced in open filed and containerized systems). (Typically offered: Spring Even Years)

HORT 4603. Practical Landscape Planning. 3 Hours.

Ornamental planting design and landscape planning concepts. Preparing planting plans, materials sheets, and cost estimates for residential properties. Prerequisite: HORT 3103. (Typically offered: Spring Even Years)

HORT 462V. Horticulture, Landscape, Turf Sciences Internship Experience. 1-6 Hour.

A supervised practical work experience in a horticulture, landscape design, or turf business or research program to gain professional competence and insight into employment opportunities. Prerequisite: COMM 1313 and HORT 2101. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HORT 4701L. Greenhouse Management and Controlled Environment Horticulture Laboratory. 1 Hour.

Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Corequisite: HORT 4703. (Typically offered: Fall Odd Years)

HORT 4703. Greenhouse Management and Controlled Environment Horticulture. 3 Hours.

Operation and management of greenhouses and other controlled environments used in horticultural production. Emphasis on system design and construction, control of light intensity and photoperiod, heating and cooling systems, substrates, mineral nutrition, water quality and irrigation systems. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Fall)

HORT 472V. Horticulture, Landscape, Turf Sciences Internship Assessment. 1-6 Hour.

The objective of the HORT 472V Internship Assessment is for the student to gain mastery in written and oral communication skills and critical thinking skills by reflection and analysis of ideas, artifacts, and events gained from a prior internship experience. The student is expected to master specific skills in the context, content development, syntax and mechanics and purpose of writing in a visual presentation relating to the internship experience. The student will also master skills in the organization, central message, language, and delivery of an oral presentation related to the internship experience. The student will master critical thinking skills through the explanation of issues, personal perspective, evidence presentation, and conclusions and outcomes related to the internship experience. Prerequisite: HORT 462V. (Typically offered: Fall, Spring and Summer)

HORT 4801L. Greenhouse Crops Production Laboratory. 1 Hour.

Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Corequisite: HORT 4803. (Typically offered: Spring Even Years)

HORT 4803. Greenhouse Crops Production. 3 Hours.

Principles and practices of production and marketing of crops commonly grown in controlled environments including flowering containerized herbaceous species, geophytes, annual and perennial bedding plants, hydroponic vegetables and herbs. Prerequisite: HORT 4703. (Typically offered: Spring Even Years)

HORT 4903. Golf and Sports Turf Management. 3 Hours.

Turf management techniques for golf courses, and athletic fields including species selection, root-zone construction and modification, fertilization, mowing, irrigation and pest control. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L and (HORT 2303 or HORT 3403). (Typically offered: Fall Odd Years)

HORT 4913. Rootzone Management for Golf and Sports Turf. 3 Hours.

An overview of the fundamental concepts of the physical and chemical properties of rootzones as related to construction and turfgrass management. Corequisite: Lab component. Prerequisite: HORT 2303 and CSES 2203. (Typically offered: Spring Odd Years)

HORT 4921. Golf Course Operations. 1 Hour.

This course is designed to cover specific aspects of golf course operations that would not be included in traditional turfgrass management courses. Topics will include budgeting, personnel management, tournament setup and operation, dealing with golf club committees, communication, and other relevant topics related to managing a golf course maintenance operation. Prerequisite: HORT 4903. (Typically offered: Fall Even Years)

HORT 4932. Turf Best Management Practices. 2 Hours.

The course covers the impacts of turfgrass management practices on turf quality and the environment. In addition, the identification, biology, and control practices for the major insects, diseases, and weeds that infest turf will be covered. Emphasis will be placed on management strategies that include both chemical and non-chemical approaches to the prevention and control of common turfgrass pests. Prerequisite: HORT 4903. (Typically offered: Spring Odd Years)

HORT 5001. Seminar. 1 Hour.

Review of scientific literature and oral reports on current research in horticulture. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

HORT 501V. Special Topics in Horticulture, Turf or Landscape. 1-6 Hour.

(Formerly HORT 401V.) Topics related to horticulture, turfgrass or landscape science or management not covered in other courses or a more intensive study of a specific topic. Graduate degree credit will not be given for both HORT 401V and HORT 501V. (Typically offered: Irregular) May be repeated for degree credit.

HORT 502V. Horticulture Judging and Competition Activity. 1-6 Hour.

(Formerly HORT 402V.) Training for and participation on horticultural identification, judging and competitive teams. Graduate degree credit will not be given for both HORT 402V and HORT 502V. Prerequisite: HORT 2003. (Typically offered: Irregular) May be repeated for up to 6 hours of degree credit.

HORT 503V. Special Problems Research. 1-6 Hour.

Original investigations on assigned problems in horticulture. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HORT 5043. Advanced Plant Breeding. 3 Hours.

Application of genetic principles to the improvement of crop plants. Presentation of conventional plant breeding methods and special techniques such as polyploidy, interspecific hybridization and induced mutation. Lecture 3 hours per week. Prerequisite: BIOL 2323 and BIOL 2321L or (ANSC 3123 and CSES 4103). (Typically offered: Spring Odd Years)

HORT 5103. Plant Growth and Development. 3 Hours.

This course will focus on environmental and developmental processes of plant growth and development. A student completing this course should have an understanding of the developmental processes of plant growth and how environmental factors interact to affect and control plant growth and development. (Typically offered: Fall)

HORT 5113. Fruit Production Science and Technology. 3 Hours.

(Formerly HORT 4103.) The management technologies and cultural practices of fruit crops including (but not limited to) blueberries, blackberries, raspberries, strawberries, grapes, peaches, and apples will be presented. The underlying scientific principles of crop genetics, nutrition, and physiology will be presented as a basis for making management decisions in fruit crop productions. Graduate degree credit will not be given for both HORT 4103 and HORT 5113. Corequisite: Lab component. Prerequisite: HORT 2003. (Typically offered: Spring Odd Years)

HORT 5143. Professional Landscape Management. 3 Hours.

Principles and practices of landscape management and maintenance. Topics include low maintenance and seasonal color design, pruning and hazard tree management, water and fertilizer management, pesticide use, and other maintenance activities. Basic elements of marketing, specifications and contracts, estimating, personnel management, and equipment selection and acquisition relevant for landscape services will be introduced. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003 and HORT 3103. (Typically offered: Fall Odd Years)

HORT 5153. Sustainable Techniques in Urban Horticulture. 3 Hours.

Student will learn basic techniques in sustainable production of horticultural crops in an urban or small-scale environment. Crops may include vegetables, cut flowers, or small fruits. This course is intended for students who do not have an agricultural production background or for those students wanting to learn more about the production of high-value horticultural crops under sustainable production systems. For graduate credit, students will be expected to design a four-year crop rotation scheme using sustainable techniques. The student will also develop a plan addressing issues such as post-harvest handling and or food safety issues. (Typically offered: Summer)

HORT 5203. Temperature Stress Physiology. 3 Hours.

This course will teach students how to apply biological, chemical and physical principles to models of how plants are damaged by temperature extremes and how they change to increase resistance. Student will apply these principles to better understand plant responses to other environmental challenges, including both biotic and abiotic stresses. (Typically offered: Spring)

HORT 530V. Special Problems. 1-6 Hour.

(Formerly HORT 400V.) Original investigations on assigned problems in horticulture. Graduate degree credit will not be given for both HORT 400V and HORT 530V. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

HORT 5333. Professional Landscape Installation and Construction. 3 Hours.

(Formerly HORT 4033.) Principles and practices involved in landscape installation and construction. Topics covered include sequencing construction activities, protecting existing trees, landscape soils, selecting plants, planting and transplanting plant materials, wood construction, cement and masonry construction, and low-voltage lighting. Lecture 3 hours per week. Preparatory training in agribusiness or business is suggested. Graduate degree credit will not be given for both HORT 4033 and HORT 5333. Prerequisite: HORT 2003. (Typically offered: Fall Even Years)

HORT 5403. Plant Propagation. 3 Hours.

(Formerly HORT 4403.) Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Graduate degree credit will not be given for both HORT 4403 and HORT 5403. Corequisite: Lab component. Prerequisite: BIOL 1613 and BIOL 1611L. (Typically offered: Spring)

HORT 5413. Horticulture Physiology. 3 Hours.

(Formerly HORT 4413.) This course provides students with a background into the physiological processes of plants with an emphasis on horticultural crops and how the processes relate to horticultural crop production practices. Among the topics covered are photosynthesis, respiration, water relations and morphogenesis. Graduate degree credit will not be given for both HORT 4413 and HORT 5413. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Spring)

HORT 5503. Sustainable Nursery Production. 3 Hours.

(Formerly HORT 4503.) This course addresses issues and practices involved in production of quality woody nursery crops (e.g. trees and shrubs produced in open filed and containerized systems). Graduate degree credit will not be given for both HORT 4503 and HORT 5503. (Typically offered: Spring Even Years)

HORT 5701L. Greenhouse Management and Controlled Environment Horticulture Laboratory. 1 Hour.

(Formerly HORT 4701L.) Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Graduate degree credit will not be given for both HORT 4701L and HORT 5701L. Corequisite: HORT 5703. (Typically offered: Fall Odd Years)

HORT 5703. Greenhouse Management and Controlled Environment Horticulture. 3 Hours.

(Formerly HORT 4703.) Operation and management of greenhouses and other controlled environments used in horticultural production. Emphasis on system design and construction, control of light intensity and photoperiod, heating and cooling systems, substrates, mineral nutrition, water quality and irrigation systems. Graduate degree credit will not be given for both HORT 4703 and HORT 5703. Prerequisite: HORT 2003 and CHEM 1073. (Typically offered: Fall)

HORT 5801L. Greenhouse Crops Production Laboratory. 1 Hour.

(Formerly HORT 4801L.) Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Graduate degree credit will not be given for both HORT 4801L and HORT 5801L. Corequisite: HORT 5803. (Typically offered: Spring Even Years)

HORT 5803. Greenhouse Crops Production. 3 Hours.

(Formerly HORT 4803.) Principles and practices of production and marketing of crops commonly grown in controlled environments including flowering containerized herbaceous species, geophytes, annual and perennial bedding plants, hydroponic vegetables and herbs. Graduate degree credit will not be given for both HORT 4803 and HORT 5803. Prerequisite: HORT 4703 or HORT 5703 (formerly HORT 4703). (Typically offered: Spring Even Years)

HORT 5903. Golf and Sports Turf Management. 3 Hours.

(Formerly HORT 4903.) Turf management techniques for golf courses, and athletic fields including species selection, root-zone construction and modification, fertilization, mowing, irrigation and pest control. Graduate degree credit will not be given for both HORT 4903 and HORT 5903. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L and (HORT 2303 or HORT 3403). (Typically offered: Fall Odd Years)

HORT 5913. Rootzone Management for Golf and Sports Turf. 3 Hours.

(Formerly HORT 4913.) An overview of the fundamental concepts of the physical and chemical properties of rootzones as related to construction and turfgrass management. Graduate degree credit will not be given for both HORT 4913 and HORT 5913. Corequisite: Lab component. Prerequisite: HORT 2303. (Typically offered: Spring Odd Years)

HORT 5921. Golf Course Operations. 1 Hour.

(Formerly HORT 4921.) This course is designed to cover specific aspects of golf course operations that would not be included in traditional turfgrass management courses. Topics will include budgeting, personnel management, tournament setup and operation, dealing with golf club committees, communication, and other relevant topics related to managing a golf course maintenance operation. Graduate degree credit will not be given for both HORT 4921 and HORT 5921. Prerequisite: HORT 4903 or HORT 5903 (formerly HORT 4903). (Typically offered: Fall Even Years)

HORT 5932. Turf Best Management Practices. 2 Hours.

(Formerly HORT 4932.) The course covers the impacts of turfgrass management practices on turf quality and the environment. In addition, the identification, biology, and control practices for the major insects, diseases, and weeds that infest turf will be covered. Emphasis will be placed on management strategies that include both chemical and non-chemical approaches to the prevention and control of common turfgrass pests. Graduate degree credit will not be given for both HORT 4932 and HORT 5932. Prerequisite: HORT 2303, PLPA 3003 and ENTO 3013. (Typically offered: Spring Odd Years)

HORT 5993. Global Horticulture and Human Nutrition to Enhance Community Resilience and Food Security. 3 Hours.

This course covers three broad areas (Global Horticulture, Sustainable International Development, Human Health and Nutrition) and experts on three campuses created the instruction. The course is intended to be multi-disciplinary, and students should use their contextual knowledge to add to weekly discussions. Prerequisite: Graduate standing. (Typically offered: Spring Even Years)

This course is cross-listed with AGED 5993, FDSC 5993.

HORT 600V. Master's Thesis. 1-6 Hour.

Master's Thesis. Prerequisite: Graduate standing. (Typically offered: Fall, Spring and Summer) May be repeated for degree credit.

HORT 602V. Special Topics in Horticulture. 1-3 Hour.

Discussion and advanced studies on selected topics in genetics, plant breeding, physiology and culture of horticultural crops. Prerequisite: Graduate standing. (Typically offered: Irregular) May be repeated for degree credit.

HORT 6033. Molecular Plant Breeding. 3 Hours.

In-depth study of genetic improvement and techniques. Covers both current and classical literature. Topics to be discussed: haploidy, genetic control of pairing, somatic instability, tissue culture and protoplast fusion, and male sterility. Lecture discussion 3 hours per week. Prerequisite: BIOL 2323 and BIOL 2321L (or ANSC 3123 and CSES 4103 or equivalent). (Typically offered: Fall)

HORT 700V. Doctoral Dissertation. 1-18 Hour.

Doctoral Dissertation. May be repeated for degree credit. Prerequisite: Graduate Standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 18 hours of degree credit.