Horticulture (HORT)

Courses

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.
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 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.
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.
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.
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.
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.
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.
This course addresses issues and practices involved in production of quality woody nursery crops (e.g. trees and shrubs produced in open field 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.
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.
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.
Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Corequisite: HORT 5803. (Typically offered: Spring Even Years)
HORT 5803. 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 or HORT 5703 (formerly HORT 4703). (Typically offered:
Spring Even 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.