HORT 100  Introduction to Horticulture  credit: 3 Hours.  
Basic principles of plant growth and development as they apply to the production, marketing, and utilization of fruits, vegetables, and ornamental plants.

HORT 105  Vegetable Gardening  credit: 3 Hours.  
The science and art of growing vegetables and the connection between gardening and food. Topics include nutrient and pest management, history, folklore, growing requirements, and quality characteristics of vegetables. Lecture and laboratory. Additional fees may apply. See Class Schedule. Credit is not given to Crop Sciences majors in the Horticultural Food Systems Concentration.

HORT 106  The Sustainable Home Garden  credit: 3 Hours.  
Create inviting and sustainable indoor and outdoor living spaces with plants, whether your landscape is several acres or a few containers on an urban balcony. This blended-format class meets 1 hour per week for lecture and discussion with additional instruction presented through independent learning activities including virtual field trips, on-line lectures, and instructional videos. Learn the fundamentals of environmentally sound resource use when designing with and maintaining flowering, fruit and vegetable plants, lawns, trees and shrubs around your home. Become a savvy horticultural consumer and develop a healthy lifestyle that supports positive physical and mental well-being by including greenspace activities in your daily life. Prerequisite: Not open to students in the Crop Sciences major in the Horticultural Food Systems Concentration.

HORT 107  Introduction to Floral Design  credit: 2 Hours.  
Introduces the art of arranging flowers, foliages, and accessories according to the principles of design. Additional fees may apply. See Class Schedule.

HORT 180  Medicinal Plants and Herbolgy  credit: 3 Hours.  
The use of cultivated and wild plants in medicines and health products according to Eastern and Western medical traditions. Consideration of herbal medicine use from ancient times to the present, important medicinal chemicals produced by plants, and the evaluation of plant chemical products as potential human medicines. Same as CPSC 180.

HORT 199  Undergraduate Open Seminar  credit: 1 to 5 Hours.  
Experimental course on a special topic in horticulture. Topic may not be repeated except in accordance with the Code. May be repeated in the same or subsequent terms. No more than 12 hours may be counted toward graduation.

HORT 205  Local Food Networks  credit: 3 Hours.  
Prepares students to be leaders and facilitators in local food networks. The focus is on providing the knowledge and skills to initiate and manage community food gardens, school gardens and curricula, institutional buying programs, farmers markets, community supported agriculture, and urban farm networks. Requires a group food network project and an experience with a local food organization. Prerequisite: An introductory course in HORT or CPSC or consent of instructor.

HORT 226  Introduction to Weed Science  credit: 3 Hours.  
Same as CPSC 226. See CPSC 226.

HORT 240  Plant Propagation  credit: 3 Hours.  
Examines theories and methods employed in propagation of plants, emphasizing anatomical, physiological, and ecological principles involved in sexual propagation (seeds) and asexual propagation (division, cuttings, budding, grafting, tissue culture, etc.) Prerequisite: IB 103.

HORT 261  Biotechnology in Agriculture  credit: 3 Hours.  
Same as CPSC 261. See CPSC 261. 
This course satisfies the General Education Criteria for: Nat Sci Tech - Life Sciences

HORT 293  Professional Internship  credit: 1 to 4 Hours.  
Off-campus experience in a field directly pertaining to a subject matter in horticulture. Approved for S/U grading only. May be repeated to a maximum of 4 hours.

HORT 294  Resident Internship  credit: 1 to 4 Hours.  
Supervised, on-campus, learning experience with faculty engaged in research. Approved for S/U grading only. May be repeated to a maximum of 4 hours. For registration in this course, students should contact the Department Teaching Coordinator.

HORT 295  Undergrad Research or Thesis  credit: 1 to 4 Hours.  
Individual research, special problems, thesis, development and/or design work under the supervision of an appropriate member of the faculty. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisite: Junior standing, cumulative GPA of 2.5 or above at the time the activity is arranged, and consent of instructor.

HORT 298  Undergraduate Seminar  credit: 1 to 3 Hours.  
Group discussion on a special topic in a field of study directly pertaining to subject matter in horticulture. May be repeated to a maximum of 12 hours. Prerequisite: Junior standing.

HORT 301  Woody Landscape Plants I  credit: 4 Hours.  
Systematic approach to the identification, ornamental characters, culture, and use of woody landscape deciduous trees and shrubs with special emphasis on cultivated varieties. Prerequisite: IB 103.

HORT 341  Greenhouse Mgmt and Production  credit: 4 Hours.  
The course focuses on how controlled environments can be managed to obtain optimal plant growth. Lectures cover greenhouse operations, management, and production, including: greenhouse design, location, glazing, heating, cooling, environmental control, irrigation systems, light control, root media, fertilization, watering, integrated pest management, and automation. The course also has a large laboratory component, in which students conduct experiments in the greenhouse. A required all-day field trip to nearby greenhouse operations rounds out the course experience. Additional fees may apply. See Class Schedule. Prerequisite: NRES 201 and HORT 100.

HORT 344  Planting for Biodiversity and Aesthetics  credit: 3 Hours.  
As the demand for food increases, plants in ornamental landscapes will need to provide not only beauty but also species biodiversity critical for supporting sustainable food production. Course emphasizes species identification (predominantly herbaceous perennials), management, and planting design principles. Designing for multiple contexts, such as residential and community gardens, and large scale production sites, to provide multiple ecosystem services, especially supporting human aesthetic preferences, and habitat for pollinators. Prerequisite: IB 103.
HORT 360  Vegetable Crop Production  credit: 3 Hours.
Instruction on the commercial production of vegetable crops. The first part of the class focuses on broad issues important to all crops including methods of vegetable production, basic soil and nutritional management, irrigation, and weed, insect, and disease management. Both organic and conventional production are discussed with a focus on sustainability. Basic farm and business management topics, including postharvest handling, food safety, crop and farm budgets, business structures, marketing, insurance, and regulations are also discussed. The second part of the class focuses on specific crops, emphasizing their origin, production, growth and development, insects, and diseases as well as harvesting and postharvest handling. Prerequisite: HORT 100 or equivalent.

HORT 361  Small Fruit Production  credit: 2 Hours.
Technological application of biological principles to the culture of strawberry, grape, blueberry, raspberry, blackberry, currant, gooseberry, and miscellaneous small fruits. Prerequisite: HORT 100 or IB 103.

HORT 362  Tree Fruit Production  credit: 2 Hours.
Examines biological principles and cultural practices involved in the growth and production of apple, pear, peach, cherry, plum, apricot, almond, and miscellaneous citrus and nut crops. Offered every fall semester. Prerequisite: HORT 100 or IB 103.

HORT 363  Postharvest Handling Hort Crop  credit: 2 Hours.
Provides theoretical and practical experience in the principles and practices of postharvest handling of cut flowers, ornamentals, fruits, and vegetables, emphasizing factors that impact quality, shelf-life, and safety. Requires two field trips, one to a local produce warehouse and the other to local supermarkets. Offered every fall semester. Prerequisite: HORT 100 or IB 103.

HORT 396  Ug Honors Research or Thesis  credit: 1 to 4 Hours.
Individual research, special problems, thesis, development and/or design work under the direction of the Honors advisor. May be repeated in the same or subsequent terms. No more than 12 hours of special problems, research, thesis and/or individual studies may be counted toward degree. Prerequisite: Junior standing, admission to the ACES Honors Program, and consent of instructor.

HORT 421  Horticultural Physiology  credit: 4 Hours.
Horticultural crop growth is examined in relation to plant structure, environment, and cultural practices. Emphasizes environmental control of whole plant growth as influenced by the supply of the raw materials required for growth: water, carbon dioxide, radiant energy, including the influence of temperature and photoperiod on plant growth and development. The shoot and root interactions with the environment are characterized relative to cultural practices. 4 undergraduate hours. 4 graduate hours. Prerequisite: HORT 100 or IB 103 and junior standing.

HORT 430  Children and Nature  credit: 2 Hours.
Study of research theory and evidence suggesting the importance of children’s contact with natural environments including, designed urban greenspaces, managed sustainable landscapes, and wilderness, for healthy child development, ecological literacy, and pro-environmental behavior as adults. Discussion of research implications and applications for redesigning our communities’ outdoor spaces, societal values, public policies and education systems to foster children’s access to, and bonding with, nature. Same as LA 430. 2 undergraduate hours. 2 graduate hours.

HORT 434  Designing Urban Agriculture  credit: 2 Hours.
Emphasizes the design process and principles related to food production in urban environments. Lecture topics will include assessing, planning, and transforming the landscape at multiple scales from regional to neighborhood to specific site. In group discussions students will critically review readings from peer-reviewed and popular literature. Students will engage in analysis and design of an existing site to integrate multiple functions, emphasizing the permanent infrastructure and perennial vegetation. Access to a computer that can be loaded with appropriate software (Sketchup) is necessary for mapping and design projects. Online lecture/discussion course. 2 undergraduate hours. 2 graduate hours. HORT 100 or CPSC 112 or equivalent introductory course in plant science, one course in Humanities & the Arts, and one course in Social & Behavioral Sciences. Prerequisite: Junior standing required.

HORT 435  Urban Food Production  credit: 3 Hours.
Explore opportunities and challenges for maximizing the productivity and sustainability of urban food production systems, considering agricultural, environmental, energy, social, and economic issues. Students will examine the science and practice of urban agriculture through scientific and popular literature, case studies, online discussion, and service-learning opportunities. Production systems covered will include both outdoor (e.g., vacant lot urban farms) and controlled environment (e.g., hydroponics and aquaponics) agriculture. 3 undergraduate hours. 3 graduate hours. Prerequisite: HORT 100 or CPSC 112 or equivalent introductory course in plant science.

HORT 442  Plant Nutrition  credit: 4 Hours.
Mechanisms and factors affecting the absorption, transport, distribution, and functions of the essential elements required by higher plants. 4 undergraduate hours. 4 graduate hours. Offered in alternate years. Prerequisite: NRES 201 and IB 420.

HORT 447  Horticultural Plant Breeding  credit: 3 Hours.
Methodology, objectives, and constraints of breeding for improved cultivars of flowers, woody ornamentals, turfgrasses, fruits, and vegetables. Emphasis on breeding objectives unique to horticultural commodities such as color, appearance, flavor, shelf-life, nutritional value, and other characteristics that determine product quality. 3 undergraduate hours. 3 graduate hours. Offered in alternate years. Prerequisite: CPSC 352.

HORT 453  Principles of Plant Breeding  credit: 4 Hours.
Same as CPSC 453. See CPSC 453.

HORT 466  Growth and Dev of Hort Crops  credit: 4 Hours.
Factors affecting growth, development, and quality of horticultural crops, such as photoperiodism, growth regulators, and carbon dioxide levels. 4 undergraduate hours. 4 graduate hours. Prerequisite: CHEM 104; HORT 421 or IB 420.

HORT 475  Permaculture & Agroforestry  credit: 3 Hours.
Lecture/discussion course covering the scientific basis and design of permaculture (permanent agriculture) and temperate agroforestry systems. Lecture topics will include: permaculture principles, site assessment, soil remediation, water management, agroforestry case studies, urban food forests, and integration of livestock, among others. Education resources will be provided from peer-reviewed literature and popular sources. Students will work on projects to critically review the principles of permaculture and to design a multifunctional agroforestry system for a temperate site. 3 undergraduate hours. 3 graduate hours. Prerequisite: HORT 100 or CPSC 112 or equivalent introductory course in plant science and one course in ecology, environmental sciences, or natural resources. Junior standing required.
HORT 499  Special Topics  credit: 1 to 4 Hours.
Experimental course on a special topic in Horticulture. Approved for both letter and S/U grading. May be repeated in the same or separate terms to a maximum of 12 hours as topics vary.

HORT 566  Plant Gene Regulation  credit: 4 Hours.
Same as CPSC 566. See CPSC 566.

HORT 588  Plant Biochemistry  credit: 4 Hours.
Same as CPSC 588 and IB 524. See CPSC 588.

HORT 598  Experimental Graduate Courses  credit: 1 to 4 Hours.
Experimental course on a special topic in Horticulture. May be repeated in the same or separate terms to a maximum of 12 hours as topics vary.