

# Course Catalog - Spring 2010

## Horticulture

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.

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. Credit is not given to horticulture majors. All other students receive credit for HORT 105 or HORT 364, but not for both.

106 ***Home Horticulture*** credit: 3 hours.

Fundamentals of home gardening and the effective use of ornamentals as a part of the home environment. Subjects include the selection, culture, and use of garden annuals, biennials, perennials, bulbs, and house plants; garden tools and equipment; soil preparation; plant propagation; principles of design and planting methods; garden maintenance; use of fertilizers; pest control; training and pruning; lawn care; hybridizing; growing structures; and care of cut flowers. Not open to students in the Horticulture curriculum.

107 ***Introduction to Floral Design*** credit: 2 hours.

Introduces the art of arranging flowers, foliage, and accessories according to the principles of design. Lecture and lab.

180 ***Medicinal Plants and Herbology*** 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.

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.

226 ***Introduction to Weed Science*** credit: 3 hours.

Same as CPSC 226. See CPSC 226.

236 ***Intro to Turfgrass Management*** credit: 3 hours.

Examines the principles and practical knowledge necessary for the establishment and maintenance of high-quality turfgrass stands for use as home lawns, golf courses, athletic fields, parks, and other commercial uses. Presents an integrated approach to management that considers conservation of resources and environmental impacts in relationship to turfgrass quality. Prerequisite: IB 103.

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.

246 **Floral Design I** credit: 3 hours.

Applies principles of design to the composition and decorative use of flowers, foliage, and accessories. Prerequisite: Enrollment in Horticulture, Human and Community Development, or Hospitality Management.

250 **Floral Crop Quality Evaluation** credit: 1 hours.

Teaches students industry standards for acceptable potted flowers, potted foliage, and cut flower crops. Students actively participate in staging plant classes for judging, judge plant material, and justify class placement. The top four students are invited to represent the University of Illinois in the National Intercollegiate Floral Quality Evaluation and Design Competition. May be repeated to a maximum of 2 hours if topics vary.

261 **Biotechnology in Agriculture** credit: 3 hours.

Same as CPSC 261. See CPSC 261.

This course satisfies the General Education Criteria for a Life Sciences course.

293 **Professional Internship** credit: 1 to 4 hours.

Off-campus experience in a field directly pertaining to a subject matter in horticulture. May be repeated to a maximum of 4 hours. Approved for both letter and S/U grading. Prerequisite: Consent of academic advisor or Department Internship Coordinator.

294 **Resident Internship** credit: 1 to 4 hours.

Supervised, on-campus, learning experience with faculty engaged in research. Approved for both letter and S/U grading. May be repeated to a maximum of 4 hours. Prerequisite: Consent of academic advisor or Department Internship Coordinator.

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.

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.

301 **Woody Landscape Plants I** credit: 3 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 102 or IB 103.

302 **Woody Landscape Plants II** credit: 4 hours.

Systematic approach to the identification, ornamental characters, culture, and use of woody landscape conifers, broadleaf evergreens, vines, ground covers, and woody ornamental deciduous trees and shrubs with special emphasis on cultivated varieties. Required field trip. Prerequisite: NRES 302 or HORT 301.

341 **Greenhouse Mgmt and Production** credit: 4 hours.

Survey of topics relating to commercial greenhouse operations, management, and production. Examines design, location, and glazing of greenhouse structures; greenhouse operations such as heating, cooling, environmental control, and irrigation systems; production factors including light, temperature, root media, fertilization, watering, and integrated pest management; and management concepts such as industry trends and cost analysis. Production of fall potted crops will be emphasized. Prerequisite: NRES 201 and HORT 100.

343 **Herbaceous Plants I** credit: 3 hours.

Course includes identification, culture, and landscape use of herbaceous, frost-tender ornamental plants. Emphasis on flowering annuals, tropical foliage plants used for outdoor displays, and foliage plants used for interiorscaping. Elements of design will be addressed; design projects will integrate concepts. Prerequisite: IB 103.

344 **Herbaceous Plants II** credit: 3 hours.

Course includes identification, cultural requirements, and landscape uses of herbaceous perennials and hardy bulbs. The design of perennial borders for continuous flowering will be emphasized. Prerequisite: IB 103.

346 **Floristry and Floral Design II** credit: 3 hours.

Examines flower shop management including establishment, financing and creation of a business plan. Covers pricing, buying, delivery display, and advanced floral design skills. Prerequisite: HORT 246.

359 **Landscape Plants Production** credit: 3 hours.

Emphasizes woody landscape plant production, nursery operation, and nursery business management techniques; includes both traditional and computer-aided management tools; examines industry scope and diversity through nursery visits, presentations by nursery operators, and field trips. Offered in alternate years. Prerequisite: NRES 302 or HORT 301 and HORT 240.

361 **Small Fruits and Viticulture** credit: 3 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.

362 **Tree Fruit Production** credit: 3 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 in alternate years. Prerequisite: HORT 100 or IB 103.

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. Prerequisite: HORT 100, CHEM 102, CHEM 103, IB 103.

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.

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. Prerequisite: HORT 100 or IB 103 and junior standing.

436 **Advanced Turfgrass Management** credit: 4 hours.

Environmental stress physiology of turfgrasses and advanced topics including environmental implications of fertilizer and pesticide use on turf. Term paper, in-class presentation, and field trip required. Offered in alternate years. Prerequisite: HORT 236.

441 **Floricultural Crops Production** credit: 4 hours.

Examines the commercial production cycles of floricultural crops grown as potted flowering plants, cut flowers, and bedding plants. Cultural practices are derived from an understanding of the interrelationships among environmental conditions, species requirements, production systems, and floricultural physiology. Crop scheduling, production and cost analysis are emphasized in an applied setting. Field trip required. Prerequisite: HORT 240 and HORT 341.

442 **Plant Nutrition** credit: 4 hours.

Mechanisms and factors affecting the absorption, transport, distribution, and functions of the essential elements required by higher plants. Offered in alternate years. Prerequisite: NRES 201 and IB 334 or IB 420.

443 **Horticulture Entreprenshp I** credit: 1 or 3 hours.

An active learning experience in which students will be responsible for planning, implementing, and marketing a campus based horticultural company. Lectures, case studies, community service events, and greenhouse/crop management provides students with the knowledge needed to successfully propose and implement a business model. Students are expected to participate in out-of-class learning opportunities. Because the class is taught as an active business, students are encouraged to participate for an annual cycle of business by registering for HORT 444. Class laboratory fee is required. 3 undergraduate hours. 1 graduate hour. Prerequisite: HORT 341, BADM 310, or consent of instructor.

444 **Horticulture Entreprenshp II** credit: 1 or 3 hours.

An active learning experience in which students will be responsible for the implementing, evaluating, and expanding a campus based horticultural company. Lectures, case studies, community service events, and greenhouse/crop management provides students with the knowledge needed to successfully implement a business model and strategically plan for expansion. Students are expected to participate in out-of-class learning opportunities. Because the class is taught as an active business, students are expected to complete HORT 443 before enrolling in this class. Class laboratory fee is required. 3 undergraduate hours. 1 graduate hour. Prerequisite: HORT 443, BADM 310, or consent of instructor.

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. Offered in alternate years. Prerequisite: CPSC 352.

450 ***Landscape Contracting*** credit: 3 hours.

Interpreting landscape plans; writing landscape installation and construction specifications; bidding and estimating costs and quantities of landscape construction materials; landscape surveying techniques; selecting materials, preparing the site and constructing landscape structures; evaluating landscape business management practices. Field trip required. Credit is not given for both HORT 450 and LA 343. Prerequisite: NRES 302 or HORT 301.

453 ***Principles of Plant Breeding*** credit: 4 hours.

Same as CPSC 453. See CPSC 453.

455 ***Residential Site Design I*** credit: 4 hours.

Theory and practice of landscape design at a residential scale. Emphasis on developing graphic communication techniques, design vocabulary, and site design skills that use plants, paving, and garden structures. Prerequisite: HORT 302.

456 ***Residential Site Design II*** credit: 3 hours.

Emphasis on the design process, comprehensive development of residential sites, advanced graphic communication techniques, and theories regarding human-environment interactions. Prerequisite: HORT 455.

458 ***Tree Mgmt in the Urban Forest*** credit: 4 hours.

Application of woody plant physiology and anatomy to arboricultural technical skills in commercial and municipal settings. Topics include the benefits of trees to urban and landscape settings, how woody plants react to urban stresses, and tree care practices. Emphasis is placed on the development and improvement of professionalism, concentrating on marketing and promotion of horticultural expertise at the individual plant, urban and community forest levels. Students learn to plant, prune, fertilize and perform other tree care practices. Students conduct urban tree inventories and learn about municipal tree ordinances, and placing monetary value on individual privately-owned and civically-controlled trees. GIS and GPS technology are taught in the context of management tools for the urban forest. Includes field trips and field laboratory exercises. Fee required. Prerequisite: NRES 201 and NRES 302 or HORT 301.

464 ***International Hort Products*** credit: 3 hours.

Survey of the international trade in and production of horticultural foods, beverages, herbs, spices, floricultural crops, interior plants, and landscape plants. Important export and import crops will be discussed. Legal and environmental issues are explored. Term project required. Prerequisite: CPSC 112, or HORT 100 or IB 103.

465 ***Ethics in Biotechnology*** credit: 3 hours.

Covers principles of ethics related to developments in biotechnology, the impact of biotechnology on environments, health, and food, and societal perception and conflict in addressing biotechnology. The course includes discussion, debate, and conflict resolution. Same as ANSC 465 and CPSC 465. Prerequisite: CPSC 261 or CPSC 265.

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. Prerequisite: CHEM 104 and NRES 426 or HORT 421 or IB 420.

482 ***Plant Tissue Culture*** credit: 4 hours.

Survey, description, and applications of cell and tissue culture strategies for plant research and production. Topics include culture environment, media composition, tissue manipulation, organogenesis, embryogenesis, somatic hybridization, bioreactors and use of these techniques for plant propagation and physiological and biochemical research. Independent research project is conducted by each student. Same as CPSC 482. Prerequisite: CHEM 232 and IB 103.

489 ***Controlling Turfgrass Pests*** credit: 3 hours.

Principles and strategies of integrated pest management (IPM), turf management practices, and common pests of turf are examined. The biology, habitat, identifying features, and management strategies of each pest are described. Offered in alternate years. Prerequisite: HORT 236 and CPSC 270 or NRES 280; and PLPA 204.

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.

505 ***Research Methods in Hort*** credit: 4 hours.

Lectures, discussions, demonstrations, and laboratory exercises dealing with methods and apparatus used in horticultural research.

566 ***Plant Gene Regulation*** credit: 4 hours.

Same as CPSC 566. See CPSC 566.

588 ***Plant Biochemistry*** credit: 4 hours.

Same as CPSC 588 and IB 524. See CPSC 588.

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.

