

HORTICULTURE (HORT)

HORT 10195 SPECIAL TOPICS IN HORTICULTURE 1-3 Credit Hours
(Repeatable for credit) Analysis of significant and current issues in horticulture not covered in regular courses.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 1-3 lecture

Grade Mode: Standard Letter

HORT 16002 INTRODUCTION TO AGROECOLOGY 3 Credit Hours
One of the major prerequisites for specialized courses, this is intended for freshmen students. This agroecology course will cover the principles and practices of creating sustainable and equitable food systems through an interdisciplinary approach to agriculture and horticulture systems. Students will learn about ecological processes, social and economic factors, environmental and health impacts, and practical farming skills such as crop rotation, intercropping and composting.

Prerequisite: BSCI 16001.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 16003 INTRODUCTION TO HORTICULTURE TECHNOLOGIES AND SENSORS 1 Credit Hour

This is an introductory course to horticulture technologies and sensors that covers the principles and practices of using technology to enhance the efficiency and sustainability of horticulture. Students will learn about different types of sensors and how they are used in horticulture, as well as the latest trends in horticultural technology, including precision agriculture and automation. This course is for students interested in the latest advances in horticulture technology.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 1 lecture

Grade Mode: Standard Letter

HORT 16004 DRONE TECHNOLOGY FOR HORTICULTURE 3 Credit Hours

This course will cover the principles and practices of using drones to improve the efficiency and effectiveness of horticultural operations. Students will learn about the different types of drones and sensors used in horticulture, as well as how to collect and analyze data for crop mapping, plant health monitoring and yield estimation. The course will also cover the regulatory and safety considerations for using drones in horticulture.

Prerequisite: None.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 16010 FLORAL DESIGN I 3 Credit Hours

Introduction to the concepts and practices of floral design for use in commercial settings. Topics include floral design theory, history, techniques and the skills required in the commercial floral design industry. Lab experience covers construction of basic floral products.

Prerequisite: None.

Schedule Type: Combined Lecture and Lab

Contact Hours: 2 lecture, 2 lab

Grade Mode: Standard Letter

HORT 16011 FLORAL DESIGN II 3 Credit Hours

Advanced training in a broad array of floral design applications including wedding design, contemporary European and Asian design, tropical flowers and outdoor compositions. Students will be provided hands-on laboratory activities to apply the principles of design.

Prerequisite: None.

Schedule Type: Combined Lecture and Lab

Contact Hours: 2 lecture, 2 lab

Grade Mode: Standard Letter

HORT 16020 PLANT MATERIALS I 3 Credit Hours

Design, selection, culture, and maintenance of flowering plants and foliage including annuals, perennials, bulbs and tropical plants for indoor and outdoor use.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 16021 WHOLESALE FLORICULTURE 3 Credit Hours

Commercial production, marketing, inventory management and post-harvest care associated with the floriculture industry.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 16022 GREENHOUSE STRATA 3 Credit Hours

Introduction to growing containerized plants in greenhouses and nurseries. Emphasis will be on issues related to traditional and alternative substrates, root media, irrigation practices, and soil matter.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 26001 OCCUPATIONAL REGULATIONS AND SAFETY 2 Credit Hours

Presentation of the basic standards, rules, safety regulations and laws pertaining to horticultural and related industries which will affect the work atmosphere. Lecture two hours weekly; offered only at the Geauga and Salem campuses.

Corequisite: BSCI 16001.

Schedule Type: Lecture

Contact Hours: 2 lecture

Grade Mode: Standard Letter

HORT 26002 EMERGING TECHNOLOGIES IN HORTICULTURE AND PLANT SYSTEMS 3 Credit Hours

Course covers the principles behind these technologies and how they are being applied in various settings, from greenhouses and hydroponics systems to field-grown crops. Students will also have the opportunity to gain hands-on experience with some of these technologies through lab activities and projects. In addition to learning about the technical aspects of these technologies, students will explore potential social and ethical implications. Students will consider the role of biotechnology in addressing food security challenges and the potential impacts of precision agriculture on the environment.

Prerequisite: None.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 26003 ARBORICULTURE AND URBAN FORESTRY MANAGEMENT 3 Credit Hours

Course covers the principles and practices of managing trees in urban environments for both aesthetic and ecological purposes. Students learn about tree biology; tree selection and planting; tree care; pruning; pest and disease management; and risk assessment. The course also covers the importance of trees in urban ecosystems and the social, economic and environmental benefits they provide. Students gain a deep understanding of the role of trees in urban environments and develop the skills to manage them sustainably.

Prerequisite: BSCI 16001 and HORT 16003.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 26006 SUSTAINABLE HORTICULTURAL SYSTEMS 3 Credit Hours

Course will provide the students with a holistic and solid understanding of sustainable horticulture. It emphasizes understanding the sustainable horticulture concepts, implications and common sustainable approaches and practices. The course focuses on the sustainable and innovative systems of horticultural crop production, such as hydroponics, aquaponics, and vertical farming, in addition to other tools and technologies for horticultural development. The course provides in-depth knowledge of the principles and practices of horticultural food crop production, including vegetables, herbs, fruits, and nuts) as well as agroforestry and sustainable landscaping. The course provides an overview of the role of precision farming innovations for a sustainable future.

Prerequisite: BSCI 16001 and BSCI 26002.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 26016 IRRIGATION DESIGN AND MAINTENANCE 3 Credit Hours

Principles of irrigation design, installation maintenance and drainage. Specific information about the selection of sprinkler heads, pipe, pumps, basic hydraulics, water conservation methods and automatic control systems shall be explored. Drawing of irrigation plans shall be required.

Prerequisite: BSCI 16001.

Schedule Type: Combined Lecture and Lab

Contact Hours: 3 other

Grade Mode: Standard Letter

HORT 26020 LANDSCAPE MANAGEMENT 3 Credit Hours

A detailed discussion and practice of managing trees, shrubs and flowers within the landscape. Additional concepts such as the types of equipment used in the "green industry," marketing, writing specifications, bidding projects and personnel management.

Prerequisite: BSCI 16001.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

Attributes: CTAG Horticulture

HORT 26030 TURF GRASS MANAGEMENT 3 Credit Hours

Basic principles of turf management. Covers turf equipment and the safe use of equipment commonly found in the turf industry. Lecture two hours weekly; lab three hours weekly; course offered only at the Salem campus.

Prerequisite: BSCI 16001.

Schedule Type: Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

Attributes: CTAG Horticulture

HORT 26032 GOLF COURSE MANAGEMENT 3 Credit Hours

The golf course environment as it relates to turf grass maintenance and pest/disease management. The construction and management of greens, tees, water and bunker management practices, turf aerification issues, topdressing and administrative concerns.

Prerequisite: BSCI 16001.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 26046 LANDSCAPE DESIGN I 3 Credit Hours

An introduction to landscape appreciation and history, the landscape industry and elements of the landscape design process. Students will assess proper plant placement and uses, develop graphic communication skills and present a project. Field trips and project site work as required.

Prerequisite: BSCI 16001 and BSCI 26003.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 30195 SPECIAL TOPICS IN HORTICULTURE 3 Credit Hours

(Repeatable for credit) Analysis of significant and current topics in horticulture not covered in regular classes.

Prerequisite: None.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 2 lab

Grade Mode: Standard Letter

HORT 35092 HORTICULTURE PRACTICUM (ELR) 3 Credit Hours

Course is designed for students to acquire the necessary skills to perform professionally in the horticulture industry. This course requires a minimum of 30 hours per week of work experience.

Prerequisite: Special approval.

Schedule Type: Practical Experience

Contact Hours: 20 other

Grade Mode: Satisfactory/Unsatisfactory-IP

Attributes: Experiential Learning Requirement

HORT 36004 MARKET GARDEN PRODUCTION 3 Credit Hours

Course will cover the principles and practices of growing and marketing crops on a small scale for local markets. Students will learn about site selection, soil management, crop planning and rotation, irrigation, pest and disease management and post-harvest handling. The course will cover marketing strategies for selling crops directly to consumers, including farmers markets, community-supported agriculture (CSA) and online sales.

Prerequisite: None.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 36005 ORCHARD PRODUCTION - DECIDUOUS AND EVERGREEN 3 Credit Hours

Course covers the principles and practices of commercial fruit tree production, including fruit, nut and citrus trees. Students learn about orchard establishment, including site selection, planting and irrigation; in addition to tree management techniques such as pruning, thinning and pest and disease management. The course also covers fruit tree physiology, fruit development and post-harvest handling.

Prerequisite: BSCI 16001 and BSCI 26003; or BSCI 26004.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 36014 PLANT PROPAGATION AND GREENHOUSE PRODUCTION 3 Credit Hours

Asexual/vegetative propagation including anatomical and physical concepts. Techniques covered include cuttings, budding, grafting, layering, dividing and micropropagation. Plant propagation by seeding and plugs are promoted along with crop production. Students provide an annual production schedule. Lecture two hours weekly; lab three hours weekly.

Prerequisite: BSCI 16001.

Schedule Type: Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 36018 LANDSCAPE CONSTRUCTION II 3 Credit Hours

Advanced landscape construction techniques involved in landscape contracting with an emphasis on the overall layout and planning of a landscape project. Students master and research product documentation, layout plans, written specifications and detailed construction drawings as they pertain to built landscape environments. Specific field site work with real world applications. Lecture two hours weekly; lab 3 hours weekly.

Prerequisite: Junior or senior standing.

Schedule Type: Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 36025 PROFESSIONAL PRACTICE IN HORTICULTURE (WIC) 3 Credit Hours

Investigation into owning and operating a green industry company including customer relations, wholesale and retail marketing, project bidding, potential profit and loss margins, communication requirements, and overall services to public and private clientele.

Prerequisite: HORT 26001 and HORT 26016.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

Attributes: Writing Intensive Course

HORT 36034 SPORTS TURF MANAGEMENT 3 Credit Hours

Identification of grass plant species; culture and morphology; turf ecology with practical information on turf establishment and cultural practices. Covers issues of design, renovation, and maintenance of sports grounds and facilities. Class requires 20 hours service learning component.

Prerequisite: HORT 26030; and junior or senior standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 36046 LANDSCAPE DESIGN II 3 Credit Hours

Advanced landscape design looking at overall landscape planning, including site and planting design, site amenities, irrigation design and client needs. Special attention to communication formats such as color rendering and graphics, as well as to overall presentation. Some design modeling and graphic sketching are included.

Prerequisite: HORT 26032 or HORT 26046; and junior or senior standing.

Schedule Type: Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 36092 INTERNSHIP IN HORTICULTURE (ELR) 1-4 Credit Hours

(Repeatable for credit) Internship experience in an advanced field of study within the horticulture/green industry, building on the student's understanding of science-based fundamentals. Internship requires a minimum of 210 working hours with an approved public organization or private green industry firm, and 2 hours per week consultation on independent research as approved and supervised by the academic program director. Work includes supporting documentation and written reports as deemed appropriate give the subject studied.

Prerequisite: Special approval.

Schedule Type: Practical Experience

Contact Hours: 3-12 other

Grade Mode: Standard Letter

Attributes: Experiential Learning Requirement

HORT 36195 SPECIAL TOPICS IN HORTICULTURE 3 Credit Hours

Analysis of significant and current topics in horticulture not covered in regular classes.

Prerequisite: None.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 41096 INDIVIDUAL INVESTIGATION IN HORTICULTURE 1-3 Credit Hours

(Repeatable for credit) Research under the direction of a horticulture faculty/program director mentor. Investigation of specific horticulture topics that build upon previous concentration areas of study.

Prerequisite: Junior or senior standing.

Schedule Type: Individual Investigation

Contact Hours: 1-3 other

Grade Mode: Standard Letter-IP

HORT 46008 FLORICULTURE AND ORNAMENTAL PLANTS 3 Credit Hours

Course will cover the principles and practices of producing and using ornamental plants for aesthetic and functional purposes. Students will learn about the biology and physiology of ornamental plants, as well as techniques for plant propagation, production and post-harvest handling. The course will also cover the design and management of ornamental landscapes, including plant selection, placement and maintenance.

Prerequisite: BSCI 16001 and BSCI 26002.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 46009 ADVANCES IN VITICULTURE PRODUCTION 3 Credit Hours

Course will cover the principles and practices of grapevine production and management. Students will learn about vineyard establishment and maintenance, including site selection, soil preparation, planting, trellising, and irrigation. The course will cover grapevine physiology and biology, including grape development, canopy management, pest and disease management and harvest and post-harvest handling.

Prerequisite: BSCI 16001 and BSCI 26002.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 46013 INTERNET OF THINGS AND ARTIFICIAL INTELLIGENCE IN PRECISION FARMING: TECHNOLOGIES AND APPLICATIONS 3 Credit Hours

Course covers the principles and practices of using cutting-edge technologies such as the Internet of things (IoT) and artificial intelligence (AI) in precision agriculture. Students learn about the sensors, drones and other IoT devices used in agriculture, as well as the data analysis and machine learning techniques used in AI. The course covers the applications of these technologies in crop management, soil monitoring, pest and disease control and yield prediction.

Prerequisite: HORT 16003.

Schedule Type: Laboratory, Lecture, Combined Lecture and Lab

Contact Hours: 2 lecture, 3 lab

Grade Mode: Standard Letter

HORT 46014 GARDEN CENTER AND NURSERY PRODUCTION MANAGEMENT 3 Credit Hours

Survey of plant production of container, bare-root, balled-in-burlap plant materials in a nursery setting. Exploration of physiological principles involved, including planting, maturity dates for harvest, shipping, garden center activities and wholesale and retail marketing of stock.

Prerequisite: BSCI 26002 and BMRT 11000; and junior or senior standing.

Schedule Type: Lecture

Contact Hours: 3 lecture

Grade Mode: Standard Letter

HORT 46092 PRACTICUM IN HORTICULTURE (ELR) 3 Credit Hours

(Repeatable for credit) An in-depth individual project, combining field experiences with original research within a green industry niche. Area of interest supports the student's educational goals given their intended concentration of past class work.

Prerequisite: HORT 36092; and junior or senior standing.

Schedule Type: Practical Experience

Contact Hours: 16 other

Grade Mode: Standard Letter-IP

Attributes: Experiential Learning Requirement