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Horticulture

The horticulture major is administered through the School of Forestry and Horticulture. The primary purpose of this major is to provide specialized academic preparation in the different content areas of production horticulture, to provide the skills required for landscape design, construction and maintenance, and to provide the technical skills needed for professional turf management. The horticulture program includes four specialized areas of study.

Bachelor of Science (B.S.) in Horticulture

Landscape Horticulture Specialization

Students selecting this specialization can prepare for interesting careers in landscaping parks, playgrounds, residential or industrial areas, road and street parkway improvement and maintenance to make the environment more pleasing and useful.

Production Horticulture Specialization

This specialization provides the student with the background and preparation for careers in production horticulture including vegetable, fruit and ornamental production, viticulture, garden center, greenhouse and nursery production, and tissue culture and propagation methodologies. Students may choose a general option within the program and select their upper division elective credits from a wide choice of courses throughout the School of Agricultural Sciences and the University. If interests are more specialized, students may elect the science option and specialize in a specific discipline.

Sustainable Horticulture Systems Specialization

This specialization provides students with a strong knowledge in sustainable horticulture practices, including natural resource conservation and influences of climate change, sustainable production of high value horticultural crops, environmentally-friendly urban horticulture techniques, and other ecologically responsible methods used for horticulture production. Students in this specialization will join the growing movement toward sustainable, ecologically-sound practices that benefit the environment when growing horticultural crops.

Cannabis Science and Production Specialization

The specialization provides students with a strong knowledge of cannabis science, including plant morphology, production practices, supply chain operations, and policy. The foundations of horticulture will provide baseline know-how to support the consecutive courses addressing cannabis science. Students will learn the entire process of cannabis production from seed, clone, or transplant to harvest and handling (harvest, drying, and curing) of the final product. Also, students will gain an understanding of the cannabinoids and non-cannabinoids (terpenes and flavonoids) synthesis/degradation process. This specialization will also teach essential management techniques that will allow students to develop a solid understanding of the best practices for cannabis commercial production under indoor and outdoor conditions and extraction processes. The students will gain experience in greenhouses, controlled

environmental agriculture (CEA) lab, and experimental sites. These experiences will provide students with valuable skills in handling, managing, and documenting cannabis cultivation techniques.

Opportunities for individual program development within the various specializations/options may be realized through work experience, internships, special studies, and seminars; however, no more than 30 hours of such unstructured coursework may be counted toward the degree. Students in all specializations/options are urged to make use of them to meet the goals and needs of their respective programs.

Students in all specializations must complete the horticulture core. These courses are HORT 220 General Horticulture, HORT 375 Horticultural Crop Physiology, HORT 382 Professional Development in Horticulture, HORT 409 Crop Physiology, and HORT 430 Plant Propagation.

Additional Fees

There may be extra expenses for field trips, manual, or supplies in some courses.

B.S. Horticulture - Landscape Horticulture Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Foundation Skills: CMST 101, ENGL 101, ENGL 102, MATH 108, UNIV 101	13
Disciplinary Studies: Fine Arts, Human Health, Humanities, CHEM 140A, PLB 200, ABE 204, Social Science	23
Integrative Studies (Multicultural/Diversity)	3
Requirements for Major	45
Core Requirements: HORT 220, HORT 375, HORT 382, HORT 409, HORT 430	15
Specialization Requirements: HORT 327, HORT 328A, HORT 328B, HORT 431 -or- HORT 434, HORT 324 -or- HORT 326	13 or 14
HORT 400-level	4
HORT 300- or 400-level	12 or 13
Other Required Courses	40
CSEM 240	4
CHEM 140A, CHEM 140B ²	5
Business Elective ³	3

Degree Requirements	Credit Hours
Agricultural Science Elective 300- and 400-level ⁴	12
PLB 200	1
Electives	11
Total	120

¹ MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted.

² CHEM 210 and CHEM 211 may be substituted.

³ Select one course from ABE 333, FIN 200, MKTG 304, MGMT 350.

⁴ Choose any 300-level or 400-level from ABE, AGSC, ANS, CSEM, HORT, HTEM, HND, FOR.

B.S. Horticulture - Production Horticulture Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Foundation Skills: CMST 101, ENGL 101, ENGL 102, MATH 108, UNIV 101	13
Disciplinary Studies: Fine Arts, Human Health, Humanities, CHEM 140A, PLB 200, ABE 204, Social Science	23
Integrative Studies (Multicultural/Diversity)	3
Requirements for Major	41
Core Requirements: HORT 220, HORT 375, HORT 382, HORT 409, HORT 430	15
Specialization Requirements: HORT 423, HORT 424, HORT 432, HORT 437, HORT 436 -or- HORT 466	19
HORT 300- or 400-level	7
Required Courses	40
CSEM 240	4
CHEM 140A, CHEM 140B ²	5
Business Elective ³	3

Degree Requirements	Credit Hours
Agricultural Science Elective 300- and 400-level ⁴	12
PLB 200	1
Electives	15
Total	120

¹ MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted.

² CHEM 210 and CHEM 211 may be substituted.

³ Select one course from ABE 333, FIN 200, MKTG 304, MGMT 350.

⁴ Choose any 300-level or 400-level from ABE, AGSC, ANS, CSEM, HORT, HTEM, HND, FOR.

B.S. Horticulture - Sustainable Horticulture Systems Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Foundation Skills: CMST 101, ENGL 101, ENGL 102, MATH 108, UNIV 101	13
Disciplinary Studies: Fine Arts, Human Health, Humanities, CHEM 140A, PLB 200, ABE 204, Social Science	23
Integrative Studies (Multicultural/Diversity)	3
Requirements for Major	44
Core Requirements: HORT 220, HORT 375, HORT 382, HORT 409, HORT 430	15
Specialization Requirements: HORT 238, HORT 450, HORT 360, HORT 410, HORT 462, HORT 463, HORT 469	20
HORT 300- or 400-level	9
Required Courses	37
CSEM 240, CSEM 370, FOR 403	10
CHEM 140A, CHEM 140B ²	5
Business Elective ³	3

Degree Requirements	Credit Hours
Agricultural Science Elective 300- and 400-level 4 ⁴	6
PLB 200	1
Electives	12
Total	120

¹ MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted.

² CHEM 210 and CHEM 211 may be substituted.

³ Select one course from ABE 333, FIN 200, MKTG 304, MGMT 350.

⁴ Choose any 300-level or 400-level from ABE, AGSC, ANS, CSEM, HORT, HTEM, HND, FOR.

B.S. Horticulture - Cannabis Science and Production Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Foundation Skills: CMST 101, ENGL 101, ENGL 102, MATH 108, UNIV 101	13
Disciplinary Studies: Fine Arts, Human Health, Humanities, CHEM 140A, PLB 200, ABE 204, Social Science	23
Integrative Studies (Multicultural/Diversity)	3
Requirements for Major	38
Core Requirements: HORT 220, HORT 375, HORT 382, HORT 409, HORT 430	15
Specialization Requirements: HORT 423, HORT 424, HORT 450, HORT 481, HORT 482, HORT 484	20
HORT 300- or 400-level	3
Required Courses	43
CSEM 240, CSEM 370, PLB 217, PLB 317, PARL 420	17
CHEM 140A, CHEM 140B ²	5
Business Elective ³	3

Degree Requirements	Credit Hours
Agricultural Science Elective 300- and 400-level 4 ⁴	7
PLB 200	1
Electives	10
Total	120

¹ MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted.

² CHEM 210 and CHEM 211 may be substituted.

³ Select one course from ABE 333, FIN 200, MKTG 304, MGMT 350.

⁴ Choose any 300-level or 400-level from ABE, AGSC, ANS, CSEM, HORT, HTEM, HND, FOR.

Horticulture Minor

A minor in Horticulture is offered. A total of 15 hours of credit is required with at least 12 hours taken at the University. HORT 220 is required and at least eight hours from 300- or 400-level structured courses. The school director or coordinating counselor must be consulted before selecting this field as a minor.

Cannabis Production Systems Minor

This minor provides students with a strong knowledge of cannabis growing systems, processing operations, and policy. Students will learn the entire process of cannabis production from seed, clone, or transplant to harvest and handling (harvest, drying, and curing) of the final product. Also, students will gain an understanding of cannabinoids and non-cannabinoids (terpenes and flavonoids), synthesis/ degradation, and extraction process. The minor may be awarded serving in partial fulfillment of a B.S. degree.

Cannabis Production Systems Minor

Degree Requirements	Credit Hours
PLB 217	3
HORT 220	4
HORT 481	3
PARL 420	3
HORT 482	3
Total	16

Undergraduate Certificate in Intensive Controlled-Environmental Plant Production

Completion of the Intensive Controlled-Environmental Plant Production Certificate program will produce skilled entry-level certificate-holders with the horticultural management and production skills needed in the rapidly expanding floriculture, specialty vegetable, therapeutic cannabis, and urban and protected structure production systems industries. The certificate may be awarded on a stand-alone basis as well as serving in partial fulfillment of a B.S. in Horticulture.

Course of study

Includes a cross-section of classes that provide the student with problem solving and production skills required for intensive high value crop production systems. Candidates completing the certificate comprised of at least 30 credit hours as listed will be prepared for employment in high value crop production systems.

Intensive Controlled-Environmental Plant Production Undergraduate Certificate Requirements

Degree Requirements	Credit Hours
Technical Courses	7
AGSE 361, AGSE 371	
Production Courses	17
CSEM 401, HORT 220, HORT 423, HORT 430, PLB 200	
AGSE 250/CSEM 250/HORT 250	1
AGSE 359/CSEM 359/HORT 359	3-4
Focus areas of high value crop production. Select one course from the following:	3-4
HORT 424, HORT 437, HORT 450, PLB 217	
Total	31

Undergraduate Certificate in Cannabis Production Systems

This certificate provides students with a strong knowledge of cannabis growing systems, processing operations, and policy. Students will learn the entire process of cannabis production from seed, clone, or transplant to harvest and handling (harvest, drying, and curing) of the final product. Also, students will gain an understanding of cannabinoids and non-cannabinoids (terpenes and flavonoids), synthesis/ degradation, and extraction process. The certificate may be awarded on a stand-alone basis as well as serving in partial fulfillment of a B.S. in Horticulture.

Cannabis Production Systems Certificate

Degree Requirements	Credit Hours
PLB 217	3
HORT 220	4
HORT 481	3
PARL 420	3
HORT 482	3
Total	16

Capstone Option for Transfer Students

The SIU Carbondale Capstone Option may be available to eligible students who have earned an Associate in Applied Science (AAS) degree or the equivalent. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. See the Capstone Option section for more information on this option.

Technology Fee

The College of Agricultural, Life, and Physical Sciences assesses undergraduate majors a technology fee of \$4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semester.

Horticulture Courses

HORT220 - General Horticulture [IAI Course: AG 905] Introductory horticulture course that will provide students with a foundation for more advanced horticulture courses and an understanding of the growing and care of plants. The course is designed to acquaint students with the science, art and culture of producing the various horticultural crops. Prerequisite: PLB 200 or equivalent. Lab fee: \$50. Credit Hours: 4

HORT225 - Genetics for the Amateur Gardener An introduction to the essential principles of genetics and plant hybridization utilizing common garden and house plants. Credit Hours: 2

HORT228 - Floral Arrangements Theory and practice in the art of flower and plant arrangement for the home, show, and special occasions. History, elements, and principles of design and the use of color. Lab materials and supply fee: \$125. Credit Hours: 2

HORT238 - Home Gardening Gardening techniques for the home gardener including site selection, garden planning, utilization of compost and mulch, pest management, and container gardening. Both inorganic and organic gardening methods are discussed along with the latest recommended varieties for the small garden. Lab fee: \$25. Credit Hours: 2

HORT250 - Pesticide Application The student will learn the basic principles needed to successfully use pesticides in agricultural production systems. The use and function of application equipment to deliver pesticides in a safe and effective manner will be taught. Basic understanding of scouting, action threshold and decision making, active ingredient rotation, product formulation, and the generation, delivery and function of droplets will be covered. Course fee of \$178 is required for professional certification materials, personal safety, pesticide application resources and pest scouting equipment. Students will be required to

pass Illinois pesticide application basic standards exam and at least two other specialty certifications for successful completion of the class. Credit Hours: 1

HORT257 - Work Experience Credit for on-campus work experience in the areas of plant and soil science, or credit through a cooperative program developed between the program and the Office of Student Employment. Credit awarded based on 4 hours of work per week during the semester for each hour of credit. Special approval needed from the program. Mandatory Pass/Fail. Credit Hours: 1-10

HORT322 - Turfgrass Management Principles and methods of establishing and maintaining turfgrass for lawns, recreational areas, public recreation areas, public grounds and higher-management turf. Identification of plant species, soil properties, and management pertinent to variable environments. Prerequisite: a plant biology course, HORT 220. Lab fee: \$50. Credit Hours: 3

HORT323 - Principles & Practices of Interior Plantscapes & Tropical Plants Introduction to the art and science of interior plantscaping. Practical application of design principals, staging, plant identification, care and maintenance of plants in interior public spaces including: offices, shopping centers, banks, and others. Indoor green (living) walls will also be explored. Hands on experience will be gained through staging and maintaining interior public areas and administrative offices of SIU Agriculture Building including staging and maintaining the green (living) wall. Prerequisite or Co-requisite: HORT 220 or consent of instructor. Lab fee: \$150. Credit Hours: 3

HORT324 - Landscape Annuals Identification, classification, culture, and use of herbaceous annuals or plants treated as annuals in the landscape. Prerequisite: HORT 220. Lab fee: \$50. Credit Hours: 3

HORT326 - Landscape Perennials Identification, classification, culture and use of herbaceous perennials, hardy bulbous plants, and perennial ornamental grasses in the landscape. Prerequisite: HORT 220. Lab fee: \$50. Credit Hours: 3

HORT327 - Landscape Plant Materials Identification, usage and adaptability to the landscape of woody (deciduous and evergreen) and ornamental shrubs, trees and vines. Use of plant keys. Prerequisite: HORT 220. Laboratory fee: \$10. Credit Hours: 3

HORT328A - Landscape Design Introduction to the design process and components of landscape design (plant materials, pavement, site structures, water, landform and buildings). A brief history of landscape design is also explored. Credit Hours: 2

HORT328B - Landscape Design Studio Practical application of landscape design beginning with basic graphic presentation and design skills leading to a final design of a real site. HORT 328A (lecture) should be taken before or concurrently with this course. Lab fee: \$20. Credit Hours: 2

HORT333 - From the Vine to its Wine Introduction to grape growing and the making, using and appreciation of wine for pleasure, health and profit. Discover the science and art of growing, making and using wine. Participatory approach to instruction with emphasis on beginning the novice on a successful journey through the wonderful world of grapes and wine. Includes a Midwest perspective. A three-day tour of the regional industry and a Saturday tour of local establishments required. Must be 21 years of age by September 15 (prior to wine tasting exercises) of semester taken to enroll. Proof of age and signature on informed consent form required at first class meeting. Offered fall semester only. Purchase and use of required textbook mandatory. Lab fee: \$245. Credit Hours: 3

HORT334 - Invasive Plants in the Urban Landscape Discuss invasive plant introduction methods, common characteristics and origin, and their threat to local ecology. Identify native alternatives plants and methods of invasive species control in the urban landscape. Prerequisite: HORT 220 or equivalent. Credit Hours: 3

HORT359 - Intern Program Supervised work experience program in either an agricultural agency of the government or agribusiness. Restricted to junior standing. Special approval needed from the program. Mandatory Pass/Fail. Credit Hours: 1-6

HORT360 - Sustainable Horticulture This course will provide students a practical working knowledge of sustainable production principles and practices used in the production of high value horticultural food crops. Students will learn how to use environmentally sound practices when growing horticultural food crops. Hands-on learning experiences will be used to allow students to gain a greater understanding

of sustainable food production practices and their effective implementation. Prerequisite: HORT 220. Required course fee: \$50. Credit Hours: 3

HORT375 - Horticultural Crop Physiology This course will cover basic and applied physiological principles that ultimately affect horticultural crop growth. Topics discussed will include whole plant anatomy and physiology of growth in both vegetative and reproductive tissues. Other areas that will be covered include environmental influences on growth, plant growth regulators, seed and seedling establishment, pruning, training, and plant size, grafting and rootstocks, and post-harvest physiology. Prerequisite: HORT 220. Credit Hours: 3

HORT382 - Professional Development in Horticulture This course develops professional preparation skills to help ensure that undergraduate horticulture students transition well to the professional workplace or to graduate school. Topics include: finding internships and job opportunities, resume and cover letter preparation, applications, exploring continuing education and graduate school opportunities, professional oral and written communications, networking, interviewing, and presentation development. Prerequisite: CMST 101. Restrictions: Horticulture students; Junior status; with consent of instructor. Credit Hours: 1

HORT390 - Special Studies in Plant and Soil Science Assignments involving research and individual problems. Special approval needed from the program. Credit Hours: 1-8

HORT391 - Honors in Plant and Soil Science Independent undergraduate research sufficiently important to three hours per week of productive effort for each credit hour. Special approval needed from the program. Credit Hours: 1-4

HORT403B - Horticultural Crop Diseases A survey of major diseases of important horticultural crops in the United States. Disease identification, cycles, and management strategies will be addressed. Not for graduate credit. Prerequisite: HORT 220. Credit Hours: 2

HORT403C - Turfgrass Diseases A survey of major diseases of important turfgrasses in the United States. Disease identification, cycles, and management strategies will be addressed. Not for graduate credit. Prerequisite: HORT 220. Credit Hours: 1

HORT403D - Tree Diseases A survey of major diseases of important tree species in the United States. Disease identification, cycles, and management strategies will be addressed. Not for graduate credit. Prerequisite: HORT 220. Credit Hours: 1

HORT408 - World Crop Production (Same as CSEM 408) Climatological, ecological, physiological, sociological, and economical factors influencing world crop production practices. This course intends to provide students the opportunity to observe world crop production systems on a firsthand basis. Crop specific production, harvesting, processing, and marketing methods will be discussed. Special approval needed from the department. Credit Hours: 3

HORT409 - Crop Physiology (Same as CSEM 409) Principles of basic plant physiology. Topics include cell structure, photosynthesis, respiration, water and mineral relations, vascular transport and plant growth regulators. Prerequisites: PLB 200, CHEM 140B. Lab fee: \$50. Credit Hours: 3

HORT410 - Urban Horticulture This class will provide students an understanding of growing edible and ornamental plants in urban landscapes. This course will focus on the value of horticulture in urban environments, and provide an overview of urban horticulture practices, with content focusing on the importance to ecosystem services and urban sustainability. The cultivation and management of both ornamental and edible plants will be discussed in the context of using best management practices to create resilient urban ecosystems. Students will also learn the social and economic value of sustainable horticulture systems and implications of creating better communities through urban horticulture. A 3- to 4-day field trip will be required to observe and learn about various current horticulture practices in an urban setting. Prerequisite: HORT 220. Field trip and lab fee: \$195. Credit Hours: 3

HORT416 - Trends in Horticulture This course focuses on new emerging topics and trends in horticulture. Advances in technologies, cultivation and pest management practices, new variety development, new innovations, and other subject areas relevant to horticultural crop improvement and the horticulture industry will be discussed. A major part of this class will be student engagement in class discussion and presentations. Restricted to senior standing. Credit Hours: 3

HORT417 - Horticulture Study Abroad Faculty led study abroad travel course designed to provide an international experience focused on horticulture. Students will gain hand-on learning experiences to directly observe, evaluate, and develop a better understanding of horticulture in another country. Students will be expected to analyze, critique, discuss, report, and describe their experiences. Oral and written documentation of the international horticultural experience will be required. Restricted to consent of instructor. Credit hours: 3. Credit Hours: 3

HORT421 - Turf Management Issues and Strategies Issues in environment, technology, management, society, politics, business, and sports that interact with turf management. Students will utilize periodicals and other references for preparing papers addressing these issues. Prerequisite: HORT 322 or permission of instructor. Lab fee: \$25. Credit Hours: 3

HORT422 - Turfgrass Science and Professional Management Basic concepts of physiology, growth, and nutrition of turfgrasses and their culture. Application of turfgrass science to management of special areas, such as golf courses, athletic fields, sod farms, and to the turfgrass industry. Prerequisite: CSEM 240 and HORT 322. Lab fee: \$50. Credit Hours: 3

HORT423 - Greenhouse Management Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; greenhouse heating and cooling systems. Prerequisite: HORT 220 or consent of instructor. Lab fee: \$40. Credit Hours: 3

HORT424 - Floriculture Production, timing, and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Prerequisite: HORT 220. Lab fee: \$40. Credit Hours: 4

HORT428 - Advanced Landscape Design I Development of the design process, graphics and verbal communication of landscape projects. Emphasis on large scale projects and residential design. Prerequisite: HORT 328A and 328B. Lab fee: \$25. Credit Hours: 3

HORT429 - Advanced Landscape Design II Development of the design process, graphics and verbal communication of landscape projects. Emphasis on construction details, color rendering and portfolio development. Prerequisite: HORT 428. Lab fee: \$25. Credit Hours: 3

HORT430 - Plant Propagation Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Not for graduate credit. Prerequisite: HORT 220. Field trip cost approximately \$5. Lab fee: \$40. Credit Hours: 4

HORT431 - Landscape Construction An introduction course in the basic elements of landscape construction dealing with wood, concrete, masonry, and stone. Emphasis will be placed on safety, interpretation of construction drawings, specifications for specific structures, materials selection, cost estimation, site preparation, and construction techniques. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$170. Credit Hours: 4

HORT432 - Garden Center and Nursery Management Principles and practices in both fields and container production or ornamental landscape materials and the marketing of landscape plant materials at the nursery and retail garden center. Business management or both nurseries and garden centers will be included. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$50. Credit Hours: 4

HORT433 - Introduction to Agricultural Biotechnology (Same as AGSE 433, ANS 433, CSEM 433, PLB 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived. Credit Hours: 3-7

HORT434 - Landscape Maintenance Operations Course is designed as a general introduction to landscape maintenance operations. Topics discussed include plant selection, site selection, climatic effects, planting, fertilization, pruning, diagnosis of plant problems, weed control and pest management. Emphasis given to business management practices and cost estimation skills. Not for graduate credit. Prerequisite: HORT 220. Credit Hours: 3

HORT436 - Successful Fruit Growing Learn how to grow and use temperate fruit trees for your pleasure and/or economic benefit. Learn to use the basic principles of plant-environment interaction to understand and solve common problems found in the culture of tree fruit crops in the landscape, garden or orchard. Master the secrets of fruit growing through emphasis on hands-on experiential laboratories. Focus on midwest culture of tree fruit and nut crops. One-day field trip. Required textbook mandatory. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$135. Credit Hours: 4

HORT437 - Vegetable Production Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$25. Credit Hours: 4

HORT439 - Introduction to Landscape Design Software Introduces students to a popular software program used to create landscape designs. Emphasis is on learning the software program rather than learning the design process. Prerequisite: HORT 328A and HORT 328B. Credit Hours: 3

HORT440 - Applied Greenhouse Management (Same as PSAS 440) Faculty led work experience at the SIUC Horticulture Greenhouses. The student can acquire practical professional training to complement their academic course work. Greenhouse management operations manual preparation will be a significant component of this course. Study will include: traditional greenhouse practices, green (living) walls & green roofs, nutrient film techniques, crop scheduling, biological pest control, pesticide application & safety. Prerequisite: HORT 423 or PSAS 423 with a grade of C or better or consent of instructor. HORT 423 or PSAS 423 may be taken concurrently. Lab fee: \$75. Credit Hours: 3

HORT449 - Horticultural Entomology An entomology course focused on the identification, life cycles, habits, habitats, and control methods of beneficial and pest insects/arthropods that affect horticultural crops. Prerequisite: PLB 200 or consent of instructor. Lab fee: \$50. Credit Hours: 3

HORT450 - Controlled Environment Agriculture Students learn basics of intensive, high-value crop production such as cannabis in artificial/controlled growing environments (e.g., greenhouse, high tunnel, or other indoor environment). Course covers greenhouse structures, their basic operation & fundamental environmental management, plant growth & maintenance, diseases & pests, and crop scheduling & production of high value, intensively grown plants. Course fee of \$142 is required for supplies associated with hands-on laboratory exercises and travel expenses. Credit Hours: 3

HORT451 - Public Garden Management and Administration Evaluate the uses of public gardens and green spaces, including the necessary concerns for safety and ADA compliance for public use, plant/display placement, considerations for effective educational signage, and funding opportunities for public green spaces. Discuss effective volunteer management and the operation of public events. A 3-day field trip to the Chicago-land area will be required to visit public gardens and green spaces. Prerequisite: HORT 220 (General Horticulture) or equivalent. Credit Hours: 4

HORT462 - Sustainable Landscape Practices Landscape practices designed and maintained with respect to natural systems offer ecological benefits, functional solutions and aesthetic value to outdoor spaces. This course will introduce best practices and construction methods of sustainable landscape features as green roofs, green walls, and permeable pavers with an emphasis on construction details, material selection and case studies. Students will expand critical thinking skills as applied to landscape planning. Credit Hours: 3

HORT463 - Plants in the Ecological Landscape Introduction to alternative plant selections for the urban landscape associated with use of native plants and creating edible landscapes. Emphasis is placed on site selection, whether in the ground, in containers or on a green roof, to determine best practices and appropriate plant choices in urban environments. Credit Hours: 3

HORT466 - Vine and Small Fruit Culture Study of the developmental patterns and environmental responses of important vine and small fruit crops; strawberries, brambles, blueberries, grapes and exotic crops. Learn to adapt these crops to profitable culture for the amateur or professional with a Midwest focus. Practical hands-on experience in the classroom and the field. Two one-day field trips required. Required textbooks mandatory. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$150. Credit Hours: 4

HORT467 - Wines of the World Varieties, terroir, culture and connoisseurship. Study the impact of varieties, terroir and culture on important wines from regions around the world. Learn wine geography and its effect on wine character with practical hands-on experience and expand connoisseurship skills. A team approach to wine appellation presentations and a term project involved in the wine trade will teach industry production, marketing and networking skills. Meet once a week for 4 hours; 2 hr lecture, 2 hr lab. Meeting time arranged for convenience of majority interested in taking the class, with instructor approval. Prerequisite is successful completion of HORT 333, From the Vine to its Wine, with a grade of C or better. Must be 21 years of age prior to beginning of class to enroll. Proof of age and signature on informed consent form required at first class meeting. Purchase and use of required textbook mandatory. Laboratory fee of \$192. Credit Hours: 3

HORT469 - Organic Gardening This class will focus on the philosophical background of organic farming, as well as the biological, environmental and social factors involved in organic food production. The student will learn the basic principles of successful organic gardening without the need to use man-made synthetic chemical sprays and fertilizers. Topics covered will include soils and organic fertilizers, composting and mulches, companion planting and crop rotation, organic cultivation of fruit, vegetable and ornamental flowers/shrubs, organic pest and disease control, permaculture, and organic garden planting design and maintenance. Credit Hours: 3

HORT470 - Post Harvest Handling of Horticultural Commodities Fundamental principles of post harvest physiology, handling, and evaluation of horticultural commodities will be covered. Specific details will be given on vegetable, fruit, ornamental, and floricultural commodities. Not for graduate credit. Prerequisite: HORT 220 and PLB 320. Field trip costing approximately \$30. Credit Hours: 2

HORT475 - Golf Course Green Installation and Maintenance This course will focus on the requirements, installation, care and maintenance of the rooting media of golf course putting green and turfgrass on disturbed soils. Not for graduate credit. Prerequisite: CSEM 240. Credit Hours: 4

HORT480 - Designing Outdoor Spaces This course will instruct and challenge the student to design outdoor spaces that cultivate a sense of place as related to the site and the user. The course will review fundamental landscape planning process including principles and elements of design with an emphasis on "green" decision making. Special approval needed from the program. Credit Hours: 3

HORT481 - Cannabis Production Students will learn the entire process of cannabis production from seed, clone, or transplant to harvest. Also, students will gain an understanding of the cannabinoids and non-cannabinoids (terpenes and flavonoids) synthesis/degradation process. This course will also teach essential management techniques that will allow students to develop a solid understanding of the best practices for cannabis commercial production. Required field trip transportation and lab equipment/supply fee: \$90. Credit Hours: 3

HORT482 - Cannabis Practicum Faculty-led work experience in greenhouses, controlled environmental agriculture (CEA) lab, and experimental sites. These experiences will provide students with valuable skills in handling, managing, and documenting cannabis cultivation techniques. The course will include propagation (seed and clonal), vegetative growth, flowering stage growth (auto-flowering and photoperiod cultivars), and post-harvest handling (trimming, harvest, drying, and curing). In addition, students will study integrated pest management (IPM), best management practices (BMP) for cannabis, common pests and pathogens, automation and controls, electric lighting, and crop-steering theory. Emphasis on both organic and traditional management methods, as well as current changes in cannabis cultivation technology, will be discussed in a hands-on lecture setting. Prerequisite: HORT 481 or consent of instructor. Required lab equipment/supply fee: \$145. Credit Hours: 3

HORT484 - Cannabis Supply Chain This course provides an in-depth exploration of the cannabis supply chain, focusing on the unique challenges and opportunities within the industry. Students will learn about the processing (harvest, drying, and curing), distribution, and retail aspects of the cannabis supply chain, as well as the legal and regulatory frameworks that impact its operations. The course will also teach essential management techniques that will allow students to develop an understanding of the best practices for cannabis commercial production and extraction. Prerequisite: HORT 481 or consent of instructor. Lab fee: \$90. Credit Hours: 3

Horticulture Faculty

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