

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

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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
Agricultural Science Elective 300- and 400-level 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.

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