

Horticultural Science (BS): Landscape Design, Gardens & Urban Environments Concentration

To see more about what you will learn in this program, visit the Learning Outcomes website (<https://apps.oirp.ncsu.edu/pgas/>)!

The Bachelor of Science in Horticultural Science: Landscape Design, Gardens and Urban Environments Concentration is one of the four concentrations offered in by the Department of Horticultural Science. Students are offered a unique look at various aspects of Horticulture.

The Landscape Design, Gardens and Urban Environments concentration is a menu driven concentration that allows students to direct their education in either landscape design or gardens and their uses in urban spaces. Students are required to take two Biology courses, Soil Science, General Chemistry, and Whole Plant Physiology. The remaining courses for the major are selected from a series of topical menus: Plant Protection Electives, Business Electives, and Advised Electives.

Students can follow paths toward residential landscape design, landscape construction and maintenance, public gardens and urban ecosystem management or pursue a graduate degree.

Coordinator

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Plan Requirements

Code	Title	Hours	Counts towards
Orientation			
ALS 103	Freshman Transitions and Diversity in Agriculture & Life Sciences	1	
or ALS 303	Transfer Transitions and Diversity in Agriculture & Life Sciences		
Communication		3	
COM 110	Public Speaking		
COM 112	Interpersonal Communication		
COM 202	Small Group Communication		
Mathematics & Sciences			
MA 107	Precalculus I	3	

MA 114	Introduction to Finite Mathematics with Applications	3
or MA 121	Elements of Calculus	
or MA 131	Calculus for Life and Management Sciences A	
or ST 311	Introduction to Statistics	
CH 101 & CH 102	Chemistry - A Molecular Science and General Chemistry Laboratory	4
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4
BIO 183	Introductory Biology: Cellular and Molecular Biology	4
or PB 200	Plant Life	
Select one of the following Economics Electives:		3
ARE 201	Introduction to Agricultural & Resource Economics	
ARE 201A	Introduction to Agricultural & Resource Economics	
EC 201	Principles of Microeconomics	
EC 205	Fundamentals of Economics	
Foundational Courses		
HS 201	The World of Horticulture: Principles and Practices	3
HS 242	Introduction to Small Scale Landscape Design	3
HS 272	Landscape Design/Build	6
HS 290	Horticulture: Careers and Opportunities	1
HS 301	Plant Propagation	4
HS 303	Ornamental Plant Identification I	3
HS 304	Ornamental Plant Identification II	3

HS 471	Landscape Ecosystem Management	4
SSC 200 & SSC 201	Soil Science and Soil Science Laboratory	4
PB 321	Introduction to Whole Plant Physiology	3
PB 360	Ecology	4
Select one of the following Environmental Electives:		3
AEC 380	Water Resources: Global Issues in Ecology, Policy, Management, and Advocacy	
ES 200	Climate Change and Sustainability	
IDS 201	Environmental Ethics	
IDS 303	Humans and the Environment	
NR 303	Humans and the Environment	
Select one of the following Internship/Research/Training courses:		3
HS 492	Horticulture Internship	
HS 493	Research Experience in Horticultural Science	
HS 494	Teaching Experience in Horticultural Science	

Electives		
Plant Protective Electives (p. 2)		6
Business Elective (p. 3)		3
Broad-Scope Elective (p. 3)		3
Advised Electives (p. 3)		13

GEP Courses		
ENG 101	Academic Writing and Research ¹	4
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		6
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)		3

GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		2
GEP Additional Breadth (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/) (Humanities/Social Sciences/Visual and Performing Arts)		3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)		2
GEP U.S. Diversity (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-us-diversity/) (verify requirement)		
GEP Global Knowledge (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/) (verify requirement)		
Foreign Language Proficiency (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/foreign-language-proficiency/) (verify requirement)		
Free Electives		
Free Electives (12 Hr S/U Lmt) ²		6
Total Hours		120

- ¹ A grade of C- or higher is required.
- ² Students should consult their academic advisors to determine which courses fill this requirement.
- * Students will have at least one computer-aided design course. HS 418 Digital Media Graphic for Landscape Designers gives an overview of AutoCAD, Photoshop, Illustrator, etc. as applied to a single semester-long project. If a student plans on pursuing an MLA degree, they should take LAR 210 Digital Drawing for Landscape Architecture and LAR 211 Digital Design Media for Landscape Architecture.

Plant Protective Electives

Code	Title	Hours	Counts towards
CS 414	Weed Science	4	
CS 415	Integrated Pest Management	3	
ENT 425	General Entomology	3	
Select a maximum of one of the following:			
FOR 318	Forest Pathology		
PP 315	Principles of Plant Pathology		
PP 318	Forest Pathology		

Business Electives

Code	Title	Hours	Counts towards
ACC 280	Survey of Financial and Managerial Accounting	3	
ARE 215	Small Business Accounting	3	
ARE 304	Agribusiness Management	3	
ARE 306	Agricultural Law	3	
ARE 309	Environmental Law & Economic Policy	3	
ARE 312	Agribusiness Marketing	3	
ARE 321	Agricultural Financial Management	3	
ARE 323	Agribusiness Finance	3	
ARE 332	Human Resource Management for Agribusiness	3	
HS 475	Horticulture Entrepreneurship	3	

Advised Electives

Code	Title	Hours	Counts towards
Broad-Scope Electives			
CS 200	Introduction to Turfgrass Management	4	
HS 280	Hands-On-Horticulture	3	
HS 420	Green Infrastructure	3	
HS 432	Introduction to Permaculture	3	
HS 451	Plant Nutrition	3	
HS 491	Sustainable Agriculture Entrepreneurship Study Abroad	3	
HS 520	Green Infrastructure	3	
HS 532	Introduction to Permaculture	3	
HS 551	Plant Nutrition	3	
SSC 341	Soil Fertility and Nutrient Management	3	
SSC 342	Soil and Plant Nutrient Analysis	1	
PB 215 or PB 220	Medicinal Plants Local Flora	3	

Landscape Design Electives

HS 252	Landscape Graphic Communication	2
HS 357	Landscape Grading and Drainage	4
HS 400	Residential Landscaping	6
HS 416	Planting Design	4
HS 418	Digital Media Graphic for Landscape Designers	3
HS 516	Planting Design	4

Gardens & Urban Environments

COM 289	Science Communication and Public Engagement	3
HS 400	Residential Landscaping	6
HS 418	Digital Media Graphic for Landscape Designers	3
HS 428	Service-Learning in Urban Agriculture Systems	1
HS 433	Public Garden Administration	3
HS 533	Public Garden Administration	3
NPS 340	Fundamentals of Grant Development for Nonprofits	3
PS 203	Introduction to Nonprofits	3
SSC 428	Service-Learning in Urban Agriculture Systems	1

Semester Sequence

This is a sample.

First Year

		Hours
ALS 103 or ALS 303	Freshman Transitions and Diversity in Agriculture & Life Sciences or Transfer Transitions and Diversity in Agriculture & Life Sciences	1
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4
ENG 101	Academic Writing and Research	4

HS 201	The World of Horticulture: Principles and Practices	3
HS 290	Horticulture: Careers and Opportunities	1
MA 107	Precalculus I	3
Hours		16

Spring Semester

BIO 183 or PB 200	Introductory Biology: Cellular and Molecular Biology or Plant Life	4
Select one of the following:		3
COM 110	Public Speaking	
COM 112	Interpersonal Communication	
COM 202	Small Group Communication	
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
Select one of the following:		3
MA 114	Introduction to Finite Mathematics with Applications	
MA 121	Elements of Calculus	
MA 131	Calculus for Life and Management Sciences A	
ST 311	Introduction to Statistics	
Hours		13

Second Year**Fall Semester**

CH 101	Chemistry - A Molecular Science	3
CH 102	General Chemistry Laboratory	1
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
HS 303	Ornamental Plant Identification I	3
PB/AEC 360	Ecology	4
Hours		14

Spring Semester

Advised Elective (p. 3)		3
Select one of the following:		3
ARE 201	Introduction to Agricultural & Resource Economics	
EC 201	Principles of Microeconomics	
EC 205	Fundamentals of Economics	
HS 242	Introduction to Small Scale Landscape Design	3
HS 304	Ornamental Plant Identification II	3
SSC 200	Soil Science	3
SSC 201	Soil Science Laboratory	1
Hours		16

Third Year**Fall Semester**

Business Elective (p. 3)		3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
HS 272	Landscape Design/Build	6
Select one of the following:		3
HS 492	Horticulture Internship	

HS 493	Research Experience in Horticultural Science	
HS 494	Teaching Experience in Horticultural Science	
Plant Protection Elective (p. 2)		3
Hours		16

Spring Semester

Advised Elective (p. 3)		3
Select one of the following:		3
AEC 380	Water Resources: Global Issues in Ecology, Policy, Management, and Advocacy	
ES 200	Climate Change and Sustainability	
IDS 201	Environmental Ethics	
NR/IDS 303	Humans and the Environment	
Free Elective		3
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)		3
PB 321	Introduction to Whole Plant Physiology	3
Hours		15

Fourth Year**Fall Semester**

Advised Elective (p. 3)		4
GEP Additional Breadth (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/)		3
HS 301	Plant Propagation	4
HS 471	Landscape Ecosystem Management	4
Hours		15

Spring Semester

Advised Electives (p. 3)		6
Plant Protection Elective (p. 2)		3
Free Elective		3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)		2
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
Hours		15
Total Hours		120

Career Opportunities

Horticulture graduates fill positions in production, processing, sales, service, and outreach. Among these are:

- County extension agents
- Vocational agriculture teachers
- Plant breeders
- Landscape designers and landscape contractors
- Floral crop grower or floral designer
- Fruit and vegetable growers
- Business owners
- Orchard, nursery, greenhouse, and garden center managers

- Research, production, and promotional specialists with commercial seed, fertilizer chemical, and food companies
- Urban horticulture specialists
- Garden writers
- Quality control technologists
- USDA specialists
- County and state government planners
- Leaders in other phases of agricultural and industrial developments
- Students also prepare for careers in research, teaching or extension in horticulture