

Horticulture

Horticulture is the science and art of producing, improving, marketing, and using fruits, vegetables, flowers, turf and ornamental plants. Horticulture encompasses the design and planting for landscapes, parks, highways, and public facilities, including interiorscapes, in rural, suburban, and urban areas. It includes skills for management of greenhouse, nursery, garden center, seed, fruit, vegetable, biotechnology, urban forests, golf courses, sports facilities, and specialty crop enterprises, as well as floral design and flower shops. Instruction and study includes culture, propagation, processing, production, marketing, design and management.

The Horticulture major is a four-year curriculum leading to the B.S. degree. Students also may minor in Horticulture. Prospective students should consult with horticulture faculty regarding programs and options so their educational needs may best be fulfilled. Master of Science and Ph.D. degree programs also are available. For more complete details, see the Graduate Bulletin (<http://bulletin.ndsu.edu/past-bulletin-archive/2017-18/graduate>).

Curriculum Options

Horticulture majors may select one or more options of study. All of the requirements for the major and the supporting disciplines must be met to complete any horticulture option. Students may select from the following six options:

- **Horticulture Science:** This option is for students who plan to continue formal graduate school education leading to careers in research, teaching, and extension.
- **Landscape Design:** This option is for students interested in planning, designing, and installing landscape plantings for functional and aesthetic purposes (a 19-credit minor in landscape architecture is required).
- **Landscape Management:** This option is for students interested in management of designed outdoor environments including public parks, private gardens, botanic gardens as well as commercial and residential landscapes.
- **Production-Business:** This option is for students who wish to grow, market, and process horticultural crops, for example, nursery, greenhouse and field production of fruit, vegetable or ornamental crops.
- **Sports and Urban Turfgrass Management:** This option is for students who desire a career in the management of quality turf in such areas as golf courses, sports facilities, parks, as well as commercial and residential lawns.
- **Urban Forestry and Parks:** This option is for students who desire a career in the management of urban forests and park-like areas, including arboreta, botanic gardens as well as commercial and residential properties.

Special Opportunities

Pre-Forestry: A student who desires to major in forestry may select a two-year pre-forestry curriculum. However, the forestry student must transfer to another institution that offers a Forestry program to complete degree requirements.

Horticulture and Forestry Club: The goal of this club is to provide opportunities to enjoy horticulture and forestry at NDSU outside of the classroom. The club organizes field trips to botanical gardens, arboreta, trade shows, parks and other horticultural sites. Other activities include attending regional and national conferences and competitions. Club members have the opportunity to be involved with growing and marketing horticultural plants for their plant sale fundraisers.

Turf Club: The goals of the Turf Club are to provide students with opportunities to share information, connect with the turf industry, gain real world experience, and broaden their knowledge. The club organizes field trips, topic discussions, and presentations by guest speakers. Other activities include attending regional and national turf conferences, community service, and fundraising.

Major Requirements

Major: Horticulture

Degree Type: B.S.

Minimum Degree Credits to Graduate: 128

General Education Requirements for Baccalaureate Degree

- A list of approved general education courses is available here (<http://bulletin.ndsu.edu/past-bulletin-archive/2017-18/academic-policies/undergraduate-policies/general-education/#genedcoursestext>).
- General education courses may be used to satisfy requirements for both general education and the major, minor, and program emphases, where applicable. Students should carefully review the major, minor, and program emphases requirements for minimum grade restrictions, should they apply.

Code	Title	Credits
Communication (C)		
ENGL 110	College Composition I	12
ENGL 120	College Composition II	

COMM 110	Fundamentals of Public Speaking	
Upper Division Writing [†]		
Quantitative Reasoning (R) [†]		3
Science and Technology (S) [†]		10
Humanities and Fine Arts (A) [†]		6
Social and Behavioral Sciences (B) [†]		6
Wellness (W) [†]		2
Cultural Diversity (D) ^{*†}		
Global Perspectives (G) ^{*†}		
Total Credits		39

* May be satisfied by completing courses in another General Education category.

† May be satisfied with courses required in the major. Review major requirements to determine if a specific upper division writing course is required.

Major Requirements

Code	Title	Credits
Required Core Courses for Horticulture		
AGRI 150	Agriculture Orientation (Not required for students transferring in 24 or more credits.)	1
AGRI 189	Skills for Academic Success ¹	1
BIOL 150	General Biology I	3
BIOL 151	General Biology II	3
BOT 380	Plant Physiology	3
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory (May satisfy general education category S)	4
CHEM 122	General Chemistry II (May satisfy general education category S)	3
CSCI 114 or MIS 116	Microcomputer Packages (May satisfy general education category S) Business Use of Computers	3
ECON 105 or ECON 201 or ECON 202	Elements of Economics (May satisfy general education category B and G) Principles of Microeconomics Principles of Macroeconomics	3
ENT 350	General Entomology	3
MATH 103	College Algebra	3
PLSC 210	Horticulture Science	3
PLSC 211	Horticulture Science Lab	1
PLSC 323	Principles of Weed Science	3
PLSC 355	Woody Landscape Plants	3
PLSC 365	Herbaceous Landscape Plants	2
PLSC 457	Horticulture and Turfgrass Systems (Capstone)	3
PLSC 496 or PLSC 494	Field Experience Individual Study	2
PLSC 491	Seminar	1
PPTH 324	Introductory Plant Pathology	3
SOIL 210	Introduction to Soil Science	3
STAT 330	Introductory Statistics (May satisfy general education category R)	3
Options: Select one of the six options listed below.		36
Option information: Students must select one of the options listed below to complete the major. The standard option is Production Business; if students wish to complete one of the other options available they must officially declare their option with the Office of Registration and Records.		
Total Credits		93

¹ AGRI189 is only required for first-time, first-year students—A first-time, first-year student is defined as a student who has not yet completed a college course as a college student. Students that are not first-time, first-year students that either transfer into the university or change their major are not required to take AGRI 189.

Production-Business Option (Standard) - 36 Credits

Code	Title	Credits
ACCT 102	Fundamentals of Accounting	3
ENT 431	Principles of Insect Pest Management	3
FIN 320	Principles of Finance	3
MGMT 320	Foundations of Management	3
MRKT 320	Foundations of Marketing	3
or MGMT 430	Leadership in Organizations	
PLSC 368	Plant Propagation	3
PPTH 455	Plant Disease Management	3
or PPTH 457	Landscape Plant Pathology	
Electives: Select 15 credits of the following:		15
ASM 373	Tractors & Power Units	
PLSC 177	Floral Design I	
PLSC 296	Field Experience	
PLSC 375	Turfgrass Management	
PLSC 375L	Turfgrass Management Laboratory	
PLSC 412	Nursery Production and Management	
PLSC 415	Vegetable Crop Production	
PLSC 416	Fruit Crop Production	
PLSC 422	Greenhouse Production and Management	
PLSC 425	Potato Science	
PLSC 453	Advanced Weed Science	
PLSC 465	Advanced Landscape Plants	
PLSC 484	Plant Tissue Culture and Biotechnology	
PLSC 486	Applied Crop Physiology	
SOIL 322	Soil Fertility and Fertilizers	
Total Credits		36

Horticulture Science Option - 36 Credits

Code	Title	Credits
BIOC 260	Elements of Biochemistry	4
CHEM 122L	General Chemistry II Laboratory	1
CHEM 341 & 341L	Organic Chemistry I and Organic Chemistry I Laboratory	4
MATH 146	Applied Calculus I	4
PLSC 315	Genetics	3
PLSC 315L	Genetics Laboratory	1
PLSC 368	Plant Propagation	3
PLSC 486	Applied Crop Physiology	3
Electives: Select 13 credits of the following:		13
CLAS 180	Scientific Term: Greek & Latin	
PLSC 296	Field Experience	
PLSC 375 & 375L	Turfgrass Management and Turfgrass Management Laboratory	
PLSC 411	Genomics	
PLSC 412	Nursery Production and Management	
PLSC 415	Vegetable Crop Production	
PLSC 416	Fruit Crop Production	

PLSC 422	Greenhouse Production and Management
PLSC 425	Potato Science
PLSC 431	Intermediate Genetics
PLSC 444	Applied Plant Breeding and Research Methods
PLSC 453	Advanced Weed Science
PLSC 485	Arboriculture Science
PPTH 455	Plant Disease Management
or PPTH 457	Landscape Plant Pathology
SOIL 465	Soil And Plant Analysis
STAT 331	Regression Analysis
STAT 367	Probability
STAT 462	Introduction to Experimental Design

Total Credits

36

Landscape Design Option - 36 Credits

This option also requires the completion of the Landscape Architecture minor (19 credits).

Code	Title	Credits
PLSC 177	Floral Design I	2
PLSC 341	Landscape Bidding, Contracting and Operations	2
PLSC 465	Advanced Landscape Plants	2
Electives: Select 11 credits of the following:		11

PLSC 296	Field Experience
PLSC 375	Turfgrass Management
PLSC 375L	Turfgrass Management Laboratory
PLSC 412	Nursery Production and Management
PLSC 422	Greenhouse Production and Management
PLSC 468	Landscape Irrigation Design
PLSC 469	Landscape Irrigation Installation and Management
PLSC 485	Arboriculture Science
PPTH 457	Landscape Plant Pathology

Landscape Architecture Minor

Core Courses

LA 231	Landscape Architecture Graphics	3
LA 271	Introduction to Landscape Architecture Studio	6

Electives: Select 10 credits of the following: 10

LA 232	Design Technology
LA 272	Parks & Open Spaces Studio
LA 322	History of Landscape Architecture
LA 341	Site Development and Detailing I
LA 342	Site Development and Detailing II
LA 441	Site Development and Detailing III

Total Credits

36

Landscape management Option - 36 Credits

Code	Title	Credits
ACCT 102	Fundamentals of Accounting	3
FIN 320	Principles of Finance	3
MGMT 320	Foundations of Management	3
PLSC 341	Landscape Bidding, Contracting and Operations	2
PLSC 370	Landscape Management	3
PLSC 465	Advanced Landscape Plants	2
PLSC 468	Landscape Irrigation Design	2

PLSC 469	Landscape Irrigation Installation and Management	2
PPTH 457	Landscape Plant Pathology	3
Electives: Select 13 credits of the following:		13
ENT 431	Principles of Insect Pest Management	
PLSC 296	Field Experience	
PLSC 368	Plant Propagation	
PLSC 375	Turfgrass Management	
PLSC 375L	Turfgrass Management Laboratory	
PLSC 412	Nursery Production and Management	
PLSC 480	Advanced Turfgrass Topics	
PLSC 485	Arboriculture Science	
SOIL 322	Soil Fertility and Fertilizers	
Total Credits		36

Sports & Urban Turfgrass management Option - 36 Credits

Code	Title	Credits
ACCT 102	Fundamentals of Accounting	3
FIN 320	Principles of Finance	3
MGMT 320	Foundations of Management	3
PLSC 215	Weed Identification	1
PLSC 375 & 375L	Turfgrass Management and Turfgrass Management Laboratory	4
PLSC 381	Sports Turf Operations	3
PLSC 468	Landscape Irrigation Design	2
PLSC 469	Landscape Irrigation Installation and Management	2
PPTH 457	Landscape Plant Pathology	3
SOIL 322	Soil Fertility and Fertilizers	3
Electives: Select 9 credits of the following:		9
ASM 373	Tractors & Power Units	
ASM 374	Power Units Laboratory	
ENT 431	Principles of Insect Pest Management	
HNES 128	Golf	
PLSC 219	Introduction to Prairie & Community Forestry	
PLSC 296	Field Experience	
PLSC 341	Landscape Bidding, Contracting and Operations	
PLSC 465	Advanced Landscape Plants	
PLSC 480	Advanced Turfgrass Topics	
PLSC 485	Arboriculture Science	
PPTH 455	Plant Disease Management	
SOIL 217	Introduction to Meteorology & Climatology	
Total Credits		36

Urban Forestry & Parks Option - 38 Credits

Code	Title	Credits
ACCT 102	Fundamentals of Accounting	3
FIN 320	Principles of Finance	3
MGMT 320	Foundations of Management	3
PLSC 219	Introduction to Prairie & Community Forestry	2
PLSC 386	Arboriculture Climbing and Rigging Operations	2
PLSC 465	Advanced Landscape Plants	2
PLSC 485	Arboriculture Science	3
PPTH 457	Landscape Plant Pathology	3
Electives: Select 15 credits of the following:		15

ENT 431	Principles of Insect Pest Management
NRM 264	Natural Resource Management Systems
NRM 401	Urban-Ecosystem Management
PLSC 296	Field Experience
PLSC 315	Genetics
PLSC 368	Plant Propagation
PLSC 370	Landscape Management
PLSC 375	Turfgrass Management
PLSC 375L	Turfgrass Management Laboratory
PLSC 412	Nursery Production and Management
PLSC 468	Landscape Irrigation Design
PLSC 469	Landscape Irrigation Installation and Management
SOIL 322	Soil Fertility and Fertilizers

Total Credits

36

Minor Requirements

Horticulture Minor

Minor Requirements

Required Credits: 18

Code	Title	Credits
Required Courses		
PLSC 210	Horticulture Science	3
PLSC 211	Horticulture Science Lab	1
Select 6 credits from the courses listed below:		6
ENT 350	General Entomology	
PPTH 324	Introductory Plant Pathology	
SOIL 210	Introduction to Soil Science	
Elective Courses: Select 8 credits from the following:		8
PLSC 355	Woody Landscape Plants	
PLSC 365	Herbaceous Landscape Plants	
PLSC 368	Plant Propagation	
PLSC 370	Landscape Management	
PLSC 375	Turfgrass Management	
PLSC 375L	Turfgrass Management Laboratory	
PLSC 386	Arboriculture Climbing and Rigging Operations	
PLSC 412	Nursery Production and Management	
PLSC 415	Vegetable Crop Production	
PLSC 416	Fruit Crop Production	
PLSC 422	Greenhouse Production and Management	
PLSC 465	Advanced Landscape Plants	
PLSC 485	Arboriculture Science	

Total Credits

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Minor Requirements and Notes

- A minimum of 8 credits must be taken at NDSU.
- Students must earn a minimum 2.00 GPA for the minor requirements.