Horticulture, B.S.Agr.

Degree Offered

- Bachelor of Science in Agriculture

Nature of the Program

Horticulture is the art and science of propagating, producing, and marketing of greenhouse, nursery, fruit, and vegetable crops. Students in horticulture study the physiology, culture, harvesting, quality control, sales and utilization of horticultural crops. Horticulture prepares students for careers as greenhouse and nursery managers, landscape contractors, supply company representatives, state and federal nursery inspectors, and educators in public gardens, schools and extension.

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. **(**http://registrar.wvu.edu/gef/**)**

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

Code	Title	Hours
General Education Foundations		
F1 - Composition & Rhetoric		3-6
ENGL 101 & ENGL 102 or ENGL 103	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research Accelerated Academic Writing	
F2A/F2B - Science & Technology		4-6
F3 - Math & Quantitative Reasoning		3-4
F4 - Society & Connections		3
F5 - Human Inquiry & the Past		3
F6 - The Arts & Creativity		3
F7 - Global Studies & Diversity		3
F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree)		9
Total Hours		31-37

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

Curriculum Requirements

Code	Title	Hours
University Requirements		29
Horticulture Program Requirements		58
Horticulture Major Requirements		33
Total Hours		120

University Requirements

Code	Title	Hours
General Education Foundations (GEF) 1, 2, 3, 4, 5, 6, 7, and 8 (31-37 Credits)		
Outstanding GEF Requirements 1, 5, 6, and 7		15
ANRD 191	First-Year Seminar	1
General Electives		13
Total Hours		29

Horticulture Program Requirements

Code	Title	Hours
BIOL 101 & 101L	General Biology 1 and General Biology 1 Laboratory (GEF 8)	4
BIOL 102 & 102L	General Biology 2 and General Biology 2 Laboratory (GEF 8)	4
CHEM 111 & 111L	Survey of Chemistry 1 and Survey of Chemistry 1 Laboratory (GEF 2)	4
CHEM 112 & 112L	Survey of Chemistry 2 and Survey of Chemistry 2 Laboratory (GEF 8)	4
MATH 124	Algebra with Applications (GEF 3)	3
PLSC 105	Plants and People: Past and Present	3
A&VS 251 & 251L	Principles of Animal Science and Principles of Animal Science Laboratory	4
ESWS 202	Principles of Soil Science	3
ESWS 202L	Principles of Soil Science Laboratory	1
ESWS 410	Soil Fertility	3
Select one of the following (GEF 4):		3
ARE 150	Introductory Agricultural and Agribusiness Economics	
ECON 201	Principles of Microeconomics	
ARE 204	Agribusiness Management	3
BIOL 350 & 350L	Plant Physiology and Plant Physiology Laboratory	4
ENTO 404	Principles of Entomology	3
ENTO 404L	Principles of Entomology Laboratory	1
GEN 101	Beginner's Guide-Genetics	3
PLSC 206	Principles of Plant Science	4
PLSC 206L	Principles of Plant Science Laboratory	0
PPTH 401	General Plant Pathology	3
PPTH 401L	General Plant Pathology Laboratory	1
Total Hours		58

Horticulture Major Requirements

Code	Title	Hours
HORT 220 & 220L	General Horticulture and General Horticulture Laboratory	3
HORT 262 & 262L	Herbaceous Plant Materials and Herbaceous Plant Materials Laboratory	3
HORT 330 & 330L	Plant Propagation and Plant Propagation Laboratory	3
HORT 444 & 444L	Handling and Storage of Horticultural Crops and Handling and Storage of Horticultural Crops Laboratory	3
HORT 480	Case Studies in Horticulture	3
Select one of the following:		3
HORT 491	Professional Field Experience	
HORT 496	Senior Thesis	
Horticulture Electives (Students may specialize in the following options if desired)		15
Option 1: Specialty Crop Production		
AGRN 451 & 451L	Principles of Weed Science and Principles of Weed Science Laboratory	
HORT 441	Garden Center Management	
HORT 443 & 443L	Fruit & Vegetable Crops and Vegetable Crops Laboratory	

HORT 445 & 445L	Greenhouse Management and Greenhouse Management Laboratory
HORT 493	Special Topics
HORT 495	Independent Study
PLSC 453	Organic Crop Production
PLSC 444	Western European Gardens, Landscapes and Architecture
Option 2: Landscape and Turf Management	
AGRN 315	Turfgrass Management
AGRN 451 & 451L	Principles of Weed Science and Principles of Weed Science Laboratory
ENTO 471	Urban Tree and Shrub Health
or PPTH 471	Urban Tree and Shrub Health
HORT 493	Special Topics
LARC 212	History of Landscape Architecture
Option 3: Public Horticulture	
AGEE 220	Group Organization and Leadership
AGEE 421	Agricultural and Natural Resource Communications
ENTO 471	Urban Tree and Shrub Health
HORT 445 & 445L	Greenhouse Management and Greenhouse Management Laboratory
HORT 493	Special Topics
LARC 212	History of Landscape Architecture
PLSC 444	Western European Gardens, Landscapes and Architecture
PPTH 471	Urban Tree and Shrub Health
Option 4: Plant Health Management	
AGRN 451 & 451L	Principles of Weed Science and Principles of Weed Science Laboratory
ENTO 412	Pest Management
ENTO 470	Forest Pest Management
or PPTH 470	Forest Pest Management
ENTO 471	Urban Tree and Shrub Health
or PPTH 471	Urban Tree and Shrub Health
ENTO 493	Special Topics
ENTO 495	Independent Study
PPTH 409 & 409L	Nematology and Nematology Laboratory
PPTH 493	Special Topics
PPTH 495	Independent Study
Option 5: Plant Science	
CHEM 231 & 231L	Organic Chemistry: Brief Course and Organic Chemistry: Brief Course Laboratory
GEN 371 & 371L	Principles of Genetics and Principles of Genetics Laboratory
STAT 211	Elementary Statistical Inference
HORT 493	Special Topics
HORT 445 & 445L	Greenhouse Management and Greenhouse Management Laboratory
HORT 495	Independent Study
PLSC 493	Special Topics
PLSC 495	Independent Study
Option 6: Entrepreneurship/Ag Business	
ARE 110	Agribusiness Accounting
ARE 382	Agricultural and Natural Resources Law

ARE 461	Agribusiness Finance	
BUSA 310	Survey of Business Law	
PLSC 444	Western European Gardens, Landscapes and Architecture	
Total Hours		33

Suggested Plan of Study

First Year

Fall	Hours	Spring	Hours
ANRD 191	1	BIOL 102 & 102L (GEF 8)	4
BIOL 101 & 101L (GEF 8)	4	PLSC 206 & 206L	4
ENGL 101 (GEF 1)	3	GEF 5	3
MATH 124 (GEF 3)	3	General Elective	3
PLSC 105	3		
	14		14

Second Year

Fall	Hours	Spring	Hours
A&VS 251 & 251L	4	ESWS 202	3
CHEM 111 & 111L (GEF 2)	4	ESWS 202L	1
ENGL 102 (GEF 1)	3	CHEM 112 & 112L (GEF 8)	4
HORT 220 & 220L	3	HORT 330 & 330L	3
		ARE 150 (GEF 4)	3
	14		14

Third Year

Fall	Hours	Spring	Hours	Summer	Hours
BIOL 350 & 350L	4	ARE 204	3	HORT 491	3
ENTO 404	3	GEF 6	3		
ENTO 404L	1	GEF 7	3		
GEN 101	3	Option Course 2	3		
HORT 262 & 262L	3	General Elective	3		
Option Course 1	3				
	17		15		3

Fourth Year

Fall	Hours	Spring	Hours
ESWS 410	3	HORT 480	3
HORT 444 & 444L	3	Option Course 4	3
PPTH 401	3	Option Course 5	3
PPTH 401L	1	General Electives	7
Option Course 3	3		
	13		16

Total credit hours: 120

Major Learning Outcomes

HORTICULTURE

The learning outcomes of the horticulture programs are centered around mastering skills that will allow students to take on leadership functions and roles in all facets of horticulture. The horticulture program trains students to not only manage horticultural plant materials but also to lead inter- and multi-disciplinary teams to solve current and future problems in the production, marketing, and use of horticultural crops.

Upon completion of the major the students should be able to:

- Demonstrate critical thinking skills and problem solving abilities in areas such as:
  - Basic business concepts
  - Integrated Pest Management (weed science, entomology, plant pathology)
  - Genetics
  - Plant physiology
  - Soil science
  - Microbiology
  - Agrochemistry
- Develop and implement sustainable and profitable production plans, systems and uses
- Analyze methods to improve productivity and efficiency of horticultural and green industry operations
- Be aware of and engage in current issues and people in horticultural production, landscaping, public green space, sustainability, and livable spaces
- Communicate professionally (written and oral) and demonstrating mastery of interpersonal communication skills necessary to lead and engage diverse and interdisciplinary teams