

Horticulture and Plant Sciences, B.S.Agr.

Degree Offered

- Bachelor of Science in Agriculture

Nature of the Program

Horticulture and Plant Sciences is the interdisciplinary study of horticultural and field crop production. The major provides students with a strong background in agricultural sciences with the option to select from two areas of emphasis.

In the Horticulture area of emphasis students will learn to propagate, produce, and market greenhouse, nursery, fruit, and vegetable crops. Students 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.

The Regenerative Agriculture area of emphasis focuses on sustainable and environmentally friendly approaches to agricultural production. This area of emphasis merges concepts of crop production with those of environmental protection to develop a balance between production and environmental issues with a focus on sustainability. Plant Science prepares students for careers such as farm and environmental consulting, organic farm production, and with agricultural supply companies, cooperative extension, and state and federal government support agencies.

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	44
	Horticulture and Plant Sciences Program Requirements	34
	Horticulture and Plant Sciences Major Requirements	42
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		28
Total Hours		44

Horticulture and Plant Sciences 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 General, Organic, and Biological Chemistry 1 and Survey of Chemistry 1 Laboratory (GEF 2)	4
CHEM 112 & 112L	Survey of General Organic Biological Chemistry 2 and Survey of Chemistry 2 Laboratory (GEF 8)	4
MATH 124	Algebra with Applications (GEF 3)	3
PLSC 206 & 206L	Principles of Plant Science and Principles of Plant Science Laboratory	4
ESWS 202 & 202L	Principles of Soil Science and Principles of Soil Science Laboratory	4
A&VS 251 & 251L	Principles of Animal Science and Principles of Animal Science Laboratory	4
ARE 150	Introductory Agricultural and Agribusiness Economics (GEF 4)	3
Total Hours		34

Horticulture and Plant Sciences Major Requirements

Code	Title	Hours
PLSC 105 or AGRN 120	Plants and People: Past and Present Principles of Agroecology	3
GEN 101	Beginner's Guide-Genetics	3
BIOL 350 & 350L	Plant Physiology and Plant Physiology Laboratory	4
ENTO 404 & 404L	Principles of Entomology and Principles of Entomology Laboratory	4
PPTH 401 & 401L	General Plant Pathology and General Plant Pathology Laboratory	4
Select one of the following (Restricted Elective 1):		3-4
ENTO 412	Pest Management	
ENTO 450	Insect Ecology	
ESWS 410	Soil Fertility	
AGRN 451 & 451L	Principles of Weed Science and Principles of Weed Science Laboratory	
Select one of the following (Restricted Elective 2):		3
PLSC 491	Professional Field Experience	
PLSC 495	Independent Study	
PLSC 496	Senior Thesis	
PLSC 497	Research	
HORT 480	Case Studies in Horticulture	3
Area of Emphasis		15
Horticulture Production (15 Hours)		
Regenerative Agriculture (16 Hours)		
Total Hours		42

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 MATH 124 (GEF 3)	3
GEN 101		3 GEF 5	3
PLSC 105 or AGRN 120		3 ARE 150 (GEF 4)	3
		14	17

Second Year

Fall	Hours	Spring	Hours
A&VS 251 & 251L		4 CHEM 112 & 112L (GEF 8)	4
CHEM 111 & 111L (GEF 2)		4 Free Elective	3
ENGL 102 (GEF 1)		3 GEF 7	3
Area of Emphasis 1 GEF 6		3 Area of Emphasis 2 3	3
		17	13

Third Year

Fall	Hours	Spring	Hours
ENTO 404		3 Restricted Elective 1	3
ENTO 404L		1 Area of Emphasis 4	3
ESWS 202		3 Free Elective 3	3
ESWS 202L		1 Free Elective 4	3
Area of Emphasis 3		3 Free Elective 5	3
Free Elective 2		3	
		14	15

Fourth Year

Fall	Hours	Spring	Hours
PPTH 401		3 BIOL 350 & 350L	4
PPTH 401L		1 HORT 480	3
Area of Emphasis 5		3 Free Elective 8	3
Restricted Elective 2		3 Free Elective 9	4
Free Elective 6		3	
Free Elective 7		3	
		16	14

Total credit hours: 120

Areas of Emphasis

- Horticulture Production (p. 3)
- Regenerative Agriculture (p. 4)

Horticulture Production Area of Emphasis

Code	Title	Hours
HORT 220 & 220L	General Horticulture and General Horticulture Laboratory	3
HORT 260L	Woody Plant Materials Laboratory	3

or HORT 262 & 262L	Herbaceous Plant Materials and Herbaceous Plant Materials Laboratory	
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
or HORT 443 & 443L	Fruit & Vegetable Crops and Vegetable Crops Laboratory	
HORT 441 or HORT 445 & 445L	Garden Center Management Greenhouse Management and Greenhouse Management Laboratory	3
Total Hours		15

Regenerative Agriculture Area of Emphasis

Code	Title	Hours
AGRN 120	Principles of Agroecology	3
ESWS 330	Soil Health	3
HORT 443 & 443L	Fruit & Vegetable Crops and Vegetable Crops Laboratory	3
ENTO 412	Pest Management	4
ENTO 450	Insect Ecology	3
Total Hours		16

Major Learning Outcomes

HORTICULTURE AND PLANT SCIENCES

The learning outcomes of the horticulture and plant science program are centered around mastering skills that will allow students to take on leadership functions and roles in all facets of horticulture and plant sciences. The program trains students to not only manage horticultural and agronomic plant materials but also to lead inter- and multi-disciplinary teams to solve current and future problems in the production, marketing, and use of 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
- Develop and implement sustainable and profitable production plans, systems and uses.
- Access, interpret, and synthesize relevant information from reliable sources (organizations, institutions, publications, and models) to address questions concerning improved productivity and efficiency.
- Be aware of and engage in current issues and people in sustainable management of horticulture and crop production, landscaping, public green space, and livable spaces.
- Communicate professionally (written and oral) and demonstrating mastery of interpersonal communication skills necessary to lead and engage diverse and interdisciplinary teams.