

Sustainable Food and Farming, B.S.Agr.

Degree Offered

- Bachelor of Science in Agriculture

Nature of the Program

Sustainable Food and Farming is the interdisciplinary study of how agricultural production of plants and animals affects and is affected by the local environment. Sustainable Food and Farming emphasizes sustainable and environmentally friendly approaches to agricultural production. The Sustainable Food and Farming combines concepts of crop production with those of environmental protection to develop a balance between production and environmental issues. This major provides students the opportunity to specialize in ecological/sustainable aspects of crop production. Potential areas of employment include: farm and environmental consulting, organic farms, parks, lawn care and maintenance companies, 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	36
	Sustainable Food and Farming Program Requirements	54
	Sustainable Food and Farming Major Requirements	30
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	20
Total Hours		36

Sustainable Food and Farming Program Requirements

Code	Title	Hours
BIOL 101 & 101L	General Biology 1 and General Biology 1 Laboratory (GEF 2)	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 8)	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
ESWS 202 & 202L	Principles of Soil Science and Principles of Soil Science Laboratory	4
ESWS 410	Soil Fertility	3
AGRN 451	Principles of Weed Science	2
AGRN 451L	Principles of Weed Science Laboratory	1
ARE 431	Marketing Agricultural Products	3
ARE 150	Introductory Agricultural and Agribusiness Economics (GEF 4)	3
A&VS 251	Principles of Animal Science	4
A&VS 251L	Principles of Animal Science Laboratory	0
ENTO 404	Principles of Entomology	3
ENTO 404L	Principles of Entomology Laboratory	1
ESWS 155 or ESWS 119 & 119L or PLSC 105 or HN&F 171	Elements of Environmental Protection Soil in the City and Soil in the City Laboratory Plants and People: Past and Present Introduction to Human Nutrition	3
PLSC 206 & 206L	Principles of Plant Science and Principles of Plant Science Laboratory	4
PPTH 401	General Plant Pathology	3
PPTH 401L	General Plant Pathology Laboratory	1
Total Hours		54

Sustainable Food and Farming Major Requirements

Code	Title	Hours
AGRN 120	Principles of Agroecology	3
AGRN 480	Field Methods and Case Studies in Agroecology (fulfills Writing and Communication Skills requirement)	3
Select two of the following:		6
ENTO 450	Insect Ecology	
PLSC 453	Organic Crop Production	
AGRN 454	Forage Crops	
Select one of the following:		3
AGRN 491	Professional Field Experience	
AGRN 495	Independent Study	
AGRN 496	Senior Thesis	
Restricted Electives (Students may specialize in the following options if desired)		15
Option 1: Crop Science		
AGRN 315	Turfgrass Management	
ESWS 425 & 425L	Environmental Soil Management and Environmental Soil Management Laboratory	
AGRN 452	Grain and Special Crops	
AGRN 493	Special Topics	
AGRN 495	Independent Study	

BIOL 350 & 350L	Plant Physiology and Plant Physiology Laboratory
ENTO 412	Pest Management
GEN 371 & 371L	Principles of Genetics and Principles of Genetics Laboratory
HORT 220 & 220L	General Horticulture and General Horticulture Laboratory
HORT 330 & 330L	Plant Propagation and Plant Propagation Laboratory
HORT 443 & 443L	Fruit & Vegetable Crops and Vegetable Crops Laboratory
HORT 444 & 444L	Handling and Storage of Horticultural Crops and Handling and Storage of Horticultural Crops Laboratory
HORT 445 & 445L	Greenhouse Management and Greenhouse Management Laboratory
HORT 493	Special Topics
HORT 495	Independent Study
PLSC 453	Organic Crop Production
Option 2: Animal Science/Food Science and Technology	
ANNU 260	Animal Nutrition
ANPR 341	Beef Production
ANPR 350 & 350L	Milk Production and Milk Production Laboratory
ANPR 353	Pork Production
ANPR 356	Small Ruminants
ANPR 367	Poultry Production
FDST 200	Food Science and Technology
FDST 308	Food Plant Sanitation
FDST 365	Muscle Foods Technology
FDST 445	Food Microbiology
FDST 445L	Food Microbiology Laboratory
HN&F 271	Fundamentals of Nutrition
HN&F 348L	Science of Food Preparation Laboratory
HN&F 353 & 353L	Food Service Systems Management and Food Service Systems Management Laboratory
HN&F 491	Professional Field Experience
Option 3: Soil Health	
ESWS 415 & 415L	Soil Survey and Land Use and Soil Survey and Land Use Laboratory
ESWS 417 & 417L	Soil Genesis and Classification and Soil Genesis and Classification Laboratory
ESWS 425 & 425L	Environmental Soil Management and Environmental Soil Management Laboratory
ESWS 430 & 430L	Soil Physics and Soil Physics Laboratory
AGRN 452	Grain and Special Crops
ESWS 455	Reclamation of Disturbed Soils
AEM 216	Living in a Microbial World
AEM 341 & 341L	General Microbiology and General Microbiology Laboratory
AEM 401 & 401L	Environmental Microbiology and Environmental Microbiology Laboratory
AEM 470	Microbes and Global Change
Option 4: Plant Health Management	

ENTO 412	Pest Management
ENTO 450	Insect Ecology
ENTO 470	Forest Pest Management
ENTO 493	Special Topics
PLSC 453	Organic Crop Production
PPTH 409 & 409L	Nematology and Nematology Laboratory
PPTH 495	Independent Study
PPTH 493	Special Topics
Option 5: Entrepreneurship or Ag Business	
ARE 110	Agribusiness Accounting
ARE 204	Agribusiness Management
ARE 382	Agricultural and Natural Resources Law
ARE 422	New Venture Creation
ARE 435	Marketing Livestock Products
ARE 461	Agribusiness Finance

Total Hours

30

SUGGESTED PLAN OF STUDY

First Year

Fall	Hours	Spring	Hours	
ANRD 191		1 BIOL 102 & 102L (GEF 8)		4
ENGL 101 (GEF 1)		3 ESWS 202 & 202L		4
MATH 124 (GEF 3)		3 PLSC 206		4
BIOL 101 & 101L (GEF 2)		4 General Electives		3
AGRN 120		3		
			14	15

Second Year

Fall	Hours	Spring	Hours	
ENGL 102 (GEF 1)		3 ARE 150 (GEF 4)		3
CHEM 111 & 111L (GEF 8)		4 CHEM 112 & 112L (GEF 8)		4
General Electives		6 ESWS 119 & 119L		3
GEF 5		3 Option course 1 General Electives		3
			16	16

Third Year

Fall	Hours	Spring	Hours	Summer	Hours
PPTH 401 & 401L		4 ARE 431		3 AGRN 491	3
A&VS 251		4 Option course 2		3	
AGRN 451		2 Option course 3		3	
AGRN 451L		1 GEF 6		3	
ENTO 450		3 General Electives		3	
			14	15	3

Fourth Year

Fall	Hours	Spring	Hours
ESWS 410		3 ENTO 450, PLSC 453, or AGRN 454	3

ENTO 404	3 AGRN 480	3
ENTO 404L	1 Option course 5	3
Option course 4	3 GEF 7	3
General Electives	3 General Electives	2
	13	14

Total credit hours: 120

Major Learning Outcomes

SUSTAINABLE FOOD AND FARMING

Sustainable Food and Farming is the study of relationships among organisms and habitats in agricultural ecosystems. Climate and soil properties, activities of other organisms, and management practices affect the growth and development of plants and animals, the composition of products from them, and other processes that sustain human life and the functioning of other ecosystems. Sustainable Food and Farming extends from organisms to landscapes and connects with economic, political, social, and cultural aspects of food and agricultural systems and their impacts on the biosphere. Principles of Sustainable Food and Farming can be applied to the design and management of sustainable systems that meet human needs and provide other ecosystem services while minimizing their ecological footprint.

Upon completion of the major students should be able to:

- Develop and implement sustainable agricultural production plans and systems.
- Diagnose and solve applied production problems in ways that minimize adverse local, regional and global impacts.
- Develop and communicate recommendations to address environmental, economic, and production outcomes in agriculture.
- Characterize and solve soil potential and plant health problems.