

PLANT SCIENCE MAJOR

Program Curriculum

Code	Title	Credits
Degree Core Requirements		
ALS 1234	CALS First Year Seminar	1
or SPES 1004	First Year Seminar	
ALCE 3634	Communicating Ag and Life Sciences in Speaking	3
or ALCE 3624	Communicating Ag and Life Sciences in Writing	
BIOL 1105	Principles of Biology	3
BIOL 1106	Principles of Biology	3
ENSC 1015	Foundations of Environmental Science	3
or ENSC 1016	Foundations of Environmental Science	
HORT 2304	Plant Biology	3
PPWS 2104	Plants, Genes, and People	3
PPWS 4104	Plant Pathology	4
Subtotal		23
Major Requirements		
BCHM 3114	Biochemistry for Biotechnology and the Life Sciences	3-4
or BCHM 4115	General Biochemistry	
CHEM 1045	General Chemistry Laboratory	1
CHEM 1046	General Chemistry Laboratory	1
CHEM 2535	Organic Chemistry	3
CHEM 2545	Organic Chemistry Laboratory	1
CHEM 2536	Organic Chemistry	3
CHEM 2546	Organic Chemistry Laboratory	1
CSES 2444	Agronomic Crops	2-3
or HORT 2224	Horticulture Science and Industry	
CSES 4144	Plant Breeding and Genetics	3
CSES 4344	Crop Physiology and Ecology	3
Subtotal		21-23
Restricted Electives		
Select 15 credits from the following courses:		15
ALS 3404	Ecological Agriculture: Theory and Practice	
BCHM 2114	Biochemical Calculations	
BCHM/APSC 4054	Genomics	
BCHM 4116	General Biochemistry	
BIOL 2004	Genetics	
BIOL 2134	Cell Function and Differentiation	
BIOL 4134	Evolutionary Genetics	
BIOL 4334	Chemical Ecology	
CSES 2224	Foundations of Precision Agriculture	
Select one of the following:		
CSES 3114/ GEOS 3614	Soils	
And		
CSES 3124/ GEOS 3624	Soils Laboratory	
Or		
ENSC 3134	Soils in the Landscape	

CSES 2244	Agriculture, Global Food Security and Health	
CSES 4064	Soil Microbiology	
CSES 4224	Applied Concepts in Precision Agriculture	
CSES/FREC 4334	Principles and Practice of Agroforestry	
CSES 4544	Forage Crop Ecology	
HORT 2184	Plants, Places, and Cultures in a Global Context	
HORT 2234	Environmental Factors in Horticulture	
HORT 4334	Greenhouse and Controlled Environment Agriculture Management	
HORT 4794	Medicinal Plants and Herbs	
PPWS 2004	Mysterious Mushrooms, Malicious Molds	
PPWS 2754	Weeds That Shape Our World	
PPWS 4114	Microbial Forensics and Biosecurity	
PPWS 4154	Plant Problem Diagnosis	
PPWS 4604	Biological Invasions	
SPES 2244	World Crops: Food and Culture	
SPES 4114	Topics: StudyAway: Production, Culture and Social Aspects US Agriculture	
Up to 3 credit hours can be selected from the following courses:		
SPES 3954	Study Abroad (1-3)	
SPES 4964	Field Study (1-3)	
SPES 4974	Independent Study (1-3)	
PPWS 4994	Undergraduate Research (1-3)	
Subtotal		15
Free Electives		
Select free electives to fulfill 120 total credit hours required.		16
Subtotal		16
Pathways to General Education		
<i>Pathways Concept 1 - Discourse</i>		
ENGL 1105	First-Year Writing (1F)	3
ENGL 1106	First-Year Writing (1F)	3
Select three credits in Pathway 1a (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G01A)		3
<i>Pathways Concept 2 - Critical Thinking in the Humanities</i>		
Select six credits in Pathway 2 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G02)		6
<i>Pathways Concept 3 - Reasoning in the Social Sciences</i>		
AAEC 1005	Economics of the Food and Fiber System	3
or ECON 2005	Principles of Economics	
Select three credits in Pathway 3 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G03)		3
<i>Pathways Concept 4 - Reasoning in the Natural Sciences</i>		
CHEM 1035	General Chemistry	3
CHEM 1036	General Chemistry	3
<i>Pathways Concept 5 - Quantitative and Computational Thinking</i>		
MATH 1025	Elementary Calculus (5F)	3
or MATH 1225	Calculus of a Single Variable	
MATH 1026	Elementary Calculus (5F)	3
or MATH 1226	Calculus of a Single Variable	
STAT 3615	Biological Statistics (5A)	3
<i>Pathways Concept 6 - Critique and Practice in Design and the Arts</i>		

Select three credits in Pathway 6d (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G06D)	3
Select three credits in Pathway 6a (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G06A)	3
<i>Pathways Concept 7 - Critical Analysis of Identity and Equity in the United States</i>	
Select three credits in Pathway 7 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G07) (may be double-counted with another Pathways concept)	3
Subtotal	45
Total Credits	120-122

Satisfactory Progress

Upon having attempted 60 credits (including transfer, advanced placement, advanced standing and credit by examination), "satisfactory progress" toward a BS PLSC degree will include passing the following:

- At least 24 credits that apply to the Pathways to General Education
- CHEM 1035 General Chemistry and CHEM 1036 General Chemistry
- ALS 1234 CALS First Year Seminar or SPES 1004 First Year Seminar
- 6 credits of Math

Graduation Requirements

- Total Credit Hours Required: Minimum of 120
- GPA Requirements:
 - In-major GPA: 2.0 (by the time the student graduates)
 - Includes classes in: CSES, HORT, and PPWS
 - Overall GPA: 2.0 (each semester in order to be in good academic standing)
- Prerequisites: Some courses listed may have pre/co-requisites; please consult the University Catalog or check with your advisor.

Acceptable Substitutions

SPES 1004 First Year Seminar : Any University approved First Year Experience (FYE) Course

Foreign Language Requirement

A sequence of two foreign language courses (Classical or ASL) is required unless two years of the same high school foreign language or 6 transfer credits of the same foreign language are completed. These credits **do not** count toward graduation requirements.

First Year		
Fall Semester		Credits
BIOL 1105	Principles of Biology	3
CHEM 1035	General Chemistry	3
CHEM 1045	General Chemistry Laboratory	1
ENGL 1105	First-Year Writing	3
MATH 1025	Elementary Calculus	3
SPES 1004	First Year Seminar	1
Credits		14
Spring Semester		
BIOL 1106	Principles of Biology	3
CHEM 1036	General Chemistry	3
CHEM 1046	General Chemistry Laboratory	1

ENGL 1106	First-Year Writing	3
MATH 1026	Elementary Calculus	3
Credits		13
Second Year		
Fall Semester		
CHEM 2535	Organic Chemistry	3
CHEM 2545	Organic Chemistry Laboratory	1
ENSC 1015	Foundations of Environmental Science	3
HORT 2224 or CSES 2444	Horticulture Science and Industry or Agronomic Crops	2
PPWS 2104	Plants, Genes, and People	3
Pathways Concept 6 - Critique and Practice in Design and the Arts		3
Credits		15
Spring Semester		
ALCE 3624 or ALCE 3634	Communicating Ag and Life Sciences in Writing or Communicating Ag and Life Sciences in Speaking	3
CHEM 2536	Organic Chemistry	3
CHEM 2546	Organic Chemistry Laboratory	1
HORT 2304	Plant Biology	3
STAT 3615	Biological Statistics	3
Pathways Concept 6 - Critique and Practice in Design and the Arts		3
Credits		16
Third Year		
Fall Semester		
AAEC 1005 or ECON 2005	Economics of the Food and Fiber System or Principles of Economics	3
BCHM 3114 or BCHM 4115	Biochemistry for Biotechnology and the Life Sciences or General Biochemistry	3
Restricted Electives		3
Restricted Electives		3
Pathways Concept 1 - Discourse		3
Credits		15
Spring Semester		
CSES 4144	Plant Breeding and Genetics	3
PPWS 4104	Plant Pathology	4
Restricted Electives		3
Pathways Concept 2 - Critical Thinking in the Humanities		3
Pathways Concept 3 - Reasoning in the Social Sciences		3
Credits		16
Fourth Year		
Fall Semester		
Restricted Electives		3
Restricted Electives		3
Restricted Electives		3
Restricted Electives		3
Pathways Concept 2 - Critical Thinking in the Humanities		3
Credits		15
Spring Semester		
CSES 4344	Crop Physiology and Ecology	3
Restricted Electives		3
Restricted Electives		3
Free Electives		4
Pathways Concept 7 - Critical Analysis of Identity and Equity in the United States		3
Credits		16
Total Credits		120