

# BS AGRICULTURAL AND ENVIRONMENTAL PLANT SCIENCES

## Program Learning Objectives

1. Demonstrate technical competence in their concentration by identifying the majority of globally important food, and/or ornamental plants and demonstrating applications of theoretical sciences to their production, maintenance and post-harvest handling.
2. Effectively evaluate and adapt basic cultural practices, economic uses, and environmental interactions in the production of food, fiber, or ornamental plants.
3. Assess and implement appropriate sustainable growing and/or horticultural design practices based on region and microclimate, especially as they relate to water, soil and other natural resources.
4. Make informed and ethical decisions regarding environmental, social, and economic impacts of horticultural and agricultural activities and will contribute to their professions' continued relevancy by identifying, evaluating and responding to changing public perceptions, governmental regulations and industry challenges.
5. Practice a range of complex problem-solving exercises and excel in diagnosing and resolving plant health issues in outdoor and enclosed plant production systems.
6. Organize, synthesize, evaluate, and reconfigure information about complex, multivariate, living systems to gain new insights and communicate their findings to multiple stakeholder groups clearly, scientifically, and ethically.

## Degree Requirements and Curriculum

In addition to the program requirements listed on this page, students must also satisfy requirements outlined in more detail in the Minimum Requirements for Graduation section of this catalog, including:

- 60 units upper-division
- GWR
- 2.0 GPA
- U.S. Cultural Pluralism (USCP)

Note: No Major, Support or Concentration courses may be selected as credit/no credit.

### MAJOR COURSES

AEPS 101	Orientation to Horticulture and Crop Science	1
AEPS 120	Principles of Horticulture and Crop Science	4
AEPS 124	Plant Propagation	4
AEPS 304	Introduction to Plant Breeding	4
AEPS 313	Agricultural Entomology	4
AEPS 321	Weed Biology and Management	4
AEPS/BOT 323	Plant Pathology	4
AEPS 351	Experimental Techniques and Analysis	4
AEPS 410	Crop Physiology	4
AEPS 461	Senior Project I	2

AEPS 462	Senior Project II	2
BOT 121	General Botany (B2 & B3) <sup>1</sup>	4
SS 120	Introductory Soil Science	4
Concentration courses (see below)		42-43

### SUPPORT COURSES

AGB 214	Agribusiness Financial Accounting	4
or BUS 212	Financial Accounting for Nonbusiness Majors	
or AGB 212	Agricultural Economics	
BRAE 340	Irrigation Water Management (Upper-Division B) <sup>1</sup>	4
CHEM 127	General Chemistry for Agriculture and Life Science I (B1 & B3) <sup>1</sup>	4
CHEM 128	General Chemistry for Agriculture and Life Science II	4
CHEM 312	Survey of Organic Chemistry	5
MATH 118	Precalculus Algebra (B4) <sup>1</sup>	4
Select from the following:		4
SPAN 101	Elementary Spanish I	
SPAN 102	Elementary Spanish II	
SPAN 103	Elementary Spanish III	
SPAN 111	Elementary Hispanic Language and Culture (USCP)	
SS 221	Soil Health and Plant Nutrition	4
STAT 218	Applied Statistics for the Life Sciences (GE Electives) <sup>1</sup>	4

### GENERAL EDUCATION (GE)

(See GE program requirements below.) 52

### FREE ELECTIVES

Free Electives 3-4

**Total units 180**

<sup>1</sup> Required in Major or Support; also satisfies General Education (GE) requirement.

## Concentrations (select one)

- Environmental Horticultural Science (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/horticulturecropscience/bsagriculturalandenvironmentalplantsciences/environmentalhorticulturescienceconcentration/>)
- Fruit and Crop Science (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/horticulturecropscience/bsagriculturalandenvironmentalplantsciences/fruitcropscienceconcentration/>)
- Plant Protection Science (<http://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/horticulturecropscience/bsagriculturalandenvironmentalplantsciences/plantprotectionscienceconcentration/>)

## General Education (GE) Requirements

- 72 units required, 20 of which are specified in Major and/or Support.
- If any of the remaining 52 units is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.
- See the complete GE course listing (<http://catalog.calpoly.edu/generalrequirementsbachelorsdegree/#generaleducationtext>).
- A grade of C- or better is required in one course in each of the following GE Areas: A1 (Oral Communication), A2 (Written Communication), A3 (Critical Thinking), and B4 (Mathematics/Quantitative Reasoning).

<sup>1</sup> Required in Major or Support; also satisfies General Education (GE) requirement.

<b>Area A</b>	<b>English Language Communication and Critical Thinking</b>	
A1	Oral Communication	4
A2	Written Communication	4
A3	Critical Thinking	4
<b>Area B</b>	<b>Scientific Inquiry and Quantitative Reasoning</b>	
B1	Physical Science (4 units in Support) <sup>1</sup>	0
B2	Life Science (4 units in Major) <sup>1</sup>	0
B3	One lab taken with either a B1 or B2 course	
B4	Mathematics/Quantitative Reasoning (4 units in Support) <sup>1</sup>	0
	Upper-Division B (4 units in Support) <sup>1</sup>	0
<b>Area C</b>	<b>Arts and Humanities</b>	
	Lower-division courses in Area C must come from three different subject prefixes.	
C1	Arts: Arts, Cinema, Dance, Music, Theater	4
C2	Humanities: Literature, Philosophy, Languages other than English	4
	Lower-Division C Elective - Select a course from either C1 or C2	4
	Upper-Division C	4
<b>Area D</b>	<b>Social Sciences - Select courses in Area D from at least two different prefixes</b>	
D1	American Institutions (Title 5, Section 40404 Requirement)	4
D2	Lower-Division D	4
	Upper-Division D	4
<b>Area E</b>	<b>Lifelong Learning and Self-Development</b>	
	Lower-Division E	4
<b>Area F</b>	<b>Ethnic Studies</b>	
	Lower-Division F	4
	<b>GE Electives in Areas B, C, and D</b>	
	Select courses from two different areas; may be lower-division or upper-division courses.	
	GE Electives (4 units in Support plus 4 units in GE) <sup>1</sup>	4
<b>Total units</b>		<b>52</b>