# BS 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** | | |
| PLSC 101 | Orientation to Horticulture and Crop Science | 1 |
| or UNIV 100 | University Studies | |
| PLSC 120 | Principles of Horticulture and Crop Science | 4 |
| PLSC 124 | Plant Propagation | 4 |
| PLSC 304 | Introduction to Plant Breeding | 4 |
| PLSC 313 | Agricultural Entomology | 4 |
| PLSC 321 | Weed Biology and Management | 4 |
| PLSC/BOT 323 | Plant Pathology | 4 |
| PLSC 350 | Abiotic Plant Problems | 4 |
| PLSC 351 | Experimental Techniques and Analysis | 4 |
| PLSC 410 | Crop Physiology | 4 |
| PLSC 461 | Senior Project I | 2 |
| PLSC 462 | Senior Project II | 2 |
| BOT 121 | General Botany (B2 & B3) [1] | 4 |
| SS 120 | Introductory Soil Science | 4 |
| **Concentration** | | |
| (See list of Concentrations below) | | 46 |
| **SUPPORT COURSES** | | |
| BRAE 340 | Irrigation Water Management (Upper-Division B) [1] | 4 |
| CHEM 127 | General Chemistry for Agriculture and Life Science I (B1 & B3) [1] | 4 |
| CHEM 128 | General Chemistry for Agriculture and Life Science II | 4 |
| MATH 118 | Precalculus Algebra (B4) [1] | 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) [1] | 4 |
| **GENERAL EDUCATION (GE)** | | |
| (See GE program requirements below.) | | 52 |
| **FREE ELECTIVES** | | |
| Free Electives | | 5 |
| **Total units** | | **180** |

[1] Required in Major or Support; also satisfies General Education (GE) requirement.

## Concentrations (select one)

- Environmental Horticultural Science (https://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/plant-sciences/bsplantsciences/environmentalhorticulturescienceconcentration/)
- Fruit and Crop Science (https://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/plant-sciences/bsplantsciences/fruitcropscienceconcentration/)
- Plant Protection Science (https://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/plant-sciences/bsplantsciences/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 (https://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).

| | | |
|---|---|---|
| **Area A** | **English Language Communication and Critical Thinking** | |
| A1 | Oral Communication | 4 |
| A2 | Written Communication | 4 |
| A3 | Critical Thinking | 4 |
| **Area B** | **Scientific Inquiry and Quantitative Reasoning** | |
| B1 | Physical Science (4 units in Support) [1] | 0 |
| B2 | Life Science (4 units in Major) [1] | 0 |
| B3 | One lab taken with either a B1 or B2 course | |
| B4 | Mathematics/Quantitative Reasoning (4 units in Support) [1] | 0 |
| Upper-Division B (4 units in Support) [1] | | 0 |
| **Area C** | **Arts and Humanities** | |
| 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 |
| **Area D** | **Social Sciences - Select courses in Area D from at least two different prefixes** | |
| D1 | American Institutions (Title 5, Section 40404 Requirement) | 4 |
| D2 | Lower-Division D | 4 |
| Upper-Division D | | 4 |
| **Area E** | **Lifelong Learning and Self-Development** | |
| Lower-Division E | | 4 |
| **Area F** | **Ethnic Studies** | |
| F | Ethnic Studies | 4 |
| **GE Electives in Areas B, C, and D** | | |
| 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) [1] | | 4 |
| **Total units** | | **52** |

[1] Required in Major or Support; also satisfies General Education (GE) requirement.