

# PLANT SCIENCES (BS)

## 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 (<https://catalog.calpoly.edu/academic-standards-policies/general-requirements-bachelors-degree/>) section of this catalog, including:

- 40 units of upper-division courses
- 2.0 GPA
- Graduation Writing Requirements (GWR)
- U.S. Cultural Pluralism (USCP)

Note: No Major, Support or Concentration courses may be selected as credit/no credit. In addition, no more than 12 units of cooperative or internship courses can count towards your degree requirements.

| Code                                | Title                                                                | Units      |
|-------------------------------------|----------------------------------------------------------------------|------------|
| <b>MAJOR COURSES</b>                |                                                                      |            |
| PLSC 1101                           | Orientation to Plant Sciences                                        | 1          |
| PLSC 1120<br>& 1120L                | Principles of Plant Sciences<br>and Principles of Plant Sciences Lab | 3          |
| PLSC 1124                           | Plant Propagation                                                    | 3          |
| PLSC 3304                           | Introduction to Plant Breeding                                       | 3          |
| PLSC 3313                           | Agricultural Entomology                                              | 3          |
| PLSC 3321                           | Weed Biology and Management                                          | 4          |
| PLSC 3323                           | Plant Pathology                                                      | 3          |
| PLSC 3351                           | Experimental Techniques and Analysis                                 | 3          |
| PLSC 4410                           | Crop Physiology                                                      | 3          |
| PLSC 4461                           | Senior Project I                                                     | 1          |
| PLSC 4462                           | Senior Project II                                                    | 1          |
| <b>Concentration</b>                |                                                                      |            |
| (See list of Concentrations below)  |                                                                      | 37         |
| <b>SUPPORT COURSES</b>              |                                                                      |            |
| BOT 1121                            | General Botany (5B & 5C) <sup>1</sup>                                | 4          |
| BRAE 3340                           | Irrigation Water Management (Upper-Division 2/5) <sup>1</sup>        | 3          |
| CHEM 1120                           | Fundamentals of Chemical Structure and Properties (5A) <sup>1</sup>  | 4          |
| MATH 1006                           | College Algebra (2) <sup>1</sup>                                     | 3          |
| SS 1120                             | Introductory Soil Science                                            | 4          |
| SS 2221                             | Soil Health and Plant Nutrition                                      | 4          |
| STAT 1110                           | Applied Statistical Concepts and Methods                             | 3          |
| <b>GENERAL EDUCATION (GE)</b>       |                                                                      |            |
| (See GE program requirements below) |                                                                      | 30         |
| <b>FREE ELECTIVES</b>               |                                                                      |            |
| Free Electives                      |                                                                      | 0          |
| <b>Total Units</b>                  |                                                                      | <b>120</b> |

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

## Concentrations

### Fruit and Crop Science

| Code                    | Title                                 | Units |
|-------------------------|---------------------------------------|-------|
| <b>REQUIRED COURSES</b> |                                       |       |
| PLSC 1132               | Introduction to Fruit Crop Production | 4     |
| PLSC 1150               | California Row Crop Production        | 4     |

|                   |                                          |   |
|-------------------|------------------------------------------|---|
| PLSC 2244         | Precision Farming                        | 3 |
| PLSC 3360         | Advanced Fruit Crop Production           | 4 |
| PLSC 4420         | Organic Crop Production Systems          | 3 |
| Enterprise Course |                                          |   |
| PLSC 2205         | Orchard and Vegetable Enterprise Project | 2 |
| or PLSC 3333      | Greenhouse Vegetable Production          |   |

**Approved Electives**

|                                               |                                                           |    |
|-----------------------------------------------|-----------------------------------------------------------|----|
| Select from the following: <sup>1</sup>       |                                                           | 17 |
| Select any AGB or ECON courses <sup>2</sup>   |                                                           |    |
| Select any BRAE courses <sup>2</sup>          |                                                           |    |
| Select any CHEM or MICRO courses <sup>2</sup> |                                                           |    |
| Select any SPAN courses <sup>2</sup>          |                                                           |    |
| FSN 2245                                      | Elements of Food Safety                                   |    |
| PLSC 1175                                     | Beekeeping                                                |    |
| PLSC 2200                                     | Special Problems for Undergraduates <sup>2</sup>          |    |
| PLSC 2232/WVIT 2233                           | Basic Viticulture                                         |    |
| PLSC/WVIT 3331                                | Advanced Viticulture - Fall                               |    |
| PLSC 3333                                     | Greenhouse Vegetable Production                           |    |
| PLSC 3337/WVIT 3332                           | Advanced Viticulture - Spring                             |    |
| PLSC 3339                                     | Internship in Plant Sciences <sup>3</sup>                 |    |
| PLSC/SS 3444                                  | Climate Smart Agriculture                                 |    |
| PLSC 4400                                     | Special Problems for Advanced Undergraduates <sup>2</sup> |    |
| PLSC 4406                                     | Advanced Weed Management                                  |    |
| PLSC 4421                                     | Postharvest Technology                                    |    |
| PLSC 4427                                     | Disease and Pest Control Systems for Ornamental Plants    |    |
| PLSC 4428                                     | Advanced Plant Pathology                                  |    |
| PLSC 4431                                     | Integrated Pest Management for Insects                    |    |
| PLSC 4441                                     | Biological Control for Pest Management                    |    |
| PLSC 4450                                     | Current Issues in the Strawberry Industry                 |    |
| SS 3321                                       | Soil Morphology                                           |    |
| WVIT 4414                                     | Grape Pest Management                                     |    |

**Total Units** **37**

<sup>1</sup> A minimum of 9 units must be taken at the 3000-4000 level.

<sup>2</sup> A maximum of 3 units may count towards Approved Electives.

<sup>3</sup> A maximum of 4 units may count towards Approved Electives.

## Environmental Horticultural Science

| Code                    | Title                                                  | Units |
|-------------------------|--------------------------------------------------------|-------|
| <b>REQUIRED COURSES</b> |                                                        |       |
| PLSC 1123               | Introduction to Sustainable Site Horticulture          | 3     |
| PLSC 2234               | Introduction to Plant Materials                        | 3     |
| PLSC 3301               | Horticultural Production Techniques                    | 3     |
| PLSC 3332               | Sustainable Site Design and Systems                    | 3     |
| PLSC 3334               | Advanced Plant Materials                               | 3     |
| PLSC 3340               | Principles of Greenhouse Environments                  | 3     |
| PLSC 4427               | Disease and Pest Control Systems for Ornamental Plants | 4     |

**Approved Electives**

|                                               |  |    |
|-----------------------------------------------|--|----|
| Select from the following:                    |  | 15 |
| Select any AGB or ECON courses <sup>1</sup>   |  |    |
| Select any BRAE courses <sup>1</sup>          |  |    |
| Select any CHEM or MICRO courses <sup>1</sup> |  |    |

|                                      |                                                           |           |
|--------------------------------------|-----------------------------------------------------------|-----------|
| Select any SPAN courses <sup>1</sup> |                                                           |           |
| PLSC 2200                            | Special Problems for Undergraduates <sup>1</sup>          |           |
| PLSC 2212                            | Environmental Horticulture Enterprise Project             |           |
| PLSC 2225                            | Floral Design                                             |           |
| PLSC 3333                            | Greenhouse Vegetable Production                           |           |
| PLSC 3339                            | Internship in Plant Sciences <sup>2</sup>                 |           |
| PLSC 4400                            | Special Problems for Advanced Undergraduates <sup>1</sup> |           |
| PLSC 4420                            | Organic Crop Production Systems                           |           |
| PLSC 4425                            | Arboriculture                                             |           |
| PLSC 4428                            | Advanced Plant Pathology                                  |           |
| PLSC 4437                            | Sustainable Landscape Management                          |           |
| PLSC 4441                            | Biological Control for Pest Management                    |           |
| PLSC 4450                            | Current Issues in the Strawberry Industry                 |           |
| <b>Total Units</b>                   |                                                           | <b>37</b> |

<sup>1</sup> A maximum of 3 units may count towards Approved Electives.

<sup>2</sup> A maximum of 4 units may count towards Approved Electives.

## Plant Protection Science

| Code                                         | Title                                                     | Units |
|----------------------------------------------|-----------------------------------------------------------|-------|
| <b>REQUIRED COURSES</b>                      |                                                           |       |
| PLSC 4406                                    | Advanced Weed Management                                  | 4     |
| PLSC 4427                                    | Disease and Pest Control Systems for Ornamental Plants    | 4     |
| PLSC 4428                                    | Advanced Plant Pathology                                  | 3     |
| PLSC 4431                                    | Integrated Pest Management for Insects                    | 3     |
| PLSC 4441                                    | Biological Control for Pest Management                    | 3     |
| Enterprise course                            |                                                           |       |
| Select from the following:                   |                                                           | 2     |
| PLSC 2205                                    | Orchard and Vegetable Enterprise Project                  |       |
| PLSC 2212                                    | Environmental Horticulture Enterprise Project             |       |
| PLSC 3333                                    | Greenhouse Vegetable Production                           |       |
| <b>Approved Electives</b>                    |                                                           |       |
| Select from the following:                   |                                                           | 18    |
| Select any AGB or ECON courses <sup>1</sup>  |                                                           |       |
| Select any BRAE courses <sup>1</sup>         |                                                           |       |
| Select any CHEM or MCRO courses <sup>1</sup> |                                                           |       |
| Select any SPAN courses <sup>1</sup>         |                                                           |       |
| FSN 2245                                     | Elements of Food Safety                                   |       |
| PLSC 1132                                    | Introduction to Fruit Crop Production                     |       |
| PLSC 1150                                    | California Row Crop Production                            |       |
| PLSC 1175                                    | Beekeeping                                                |       |
| PLSC 2200                                    | Special Problems for Undergraduates <sup>1</sup>          |       |
| PLSC 2232/WVIT 2233                          | Basic Viticulture                                         |       |
| PLSC 2244                                    | Precision Farming                                         |       |
| PLSC/WVIT 3331                               | Advanced Viticulture - Fall                               |       |
| PLSC 3333                                    | Greenhouse Vegetable Production                           |       |
| PLSC 3337/WVIT 3332                          | Advanced Viticulture - Spring                             |       |
| PLSC 3339                                    | Internship in Plant Sciences <sup>2</sup>                 |       |
| PLSC 3360                                    | Advanced Fruit Crop Production                            |       |
| PLSC/SS 3444                                 | Climate Smart Agriculture                                 |       |
| PLSC 4400                                    | Special Problems for Advanced Undergraduates <sup>1</sup> |       |
| PLSC 4421                                    | Postharvest Technology                                    |       |

|                    |                                           |
|--------------------|-------------------------------------------|
| PLSC 4450          | Current Issues in the Strawberry Industry |
| WVIT 4414          | Grape Pest Management                     |
| <b>Total Units</b> | <b>37</b>                                 |

<sup>1</sup> A maximum of 3 units may count towards Approved Electives.

<sup>2</sup> A maximum of 4 units may count towards Approved Electives.

## General Education (GE) Requirements

- 43 units required, 13 of which are specified in Major and/or Support.
- If any of the remaining 30 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/academic-standards-policies/general-requirements-bachelors-degree/#generaleducationtext>).
- A grade of C- or better is required in one course in each of the following GE Areas: 1A (English Composition), 1B (Critical Thinking), 1C (Oral Communication), and 2 (Mathematics and Quantitative Reasoning).

### Lower-Division General Education

|               |                                                                                                               |   |
|---------------|---------------------------------------------------------------------------------------------------------------|---|
| <b>Area 1</b> | <b>English Communication and Critical Thinking</b>                                                            |   |
| 1A            | Written Communication                                                                                         | 3 |
| 1B            | Critical Thinking                                                                                             | 3 |
| 1C            | Oral Communication                                                                                            | 3 |
| <b>Area 2</b> | <b>Mathematics and Quantitative Reasoning</b>                                                                 |   |
| 2             | Mathematics and Quantitative Reasoning (3 units in Support) <sup>1</sup>                                      | 0 |
| <b>Area 3</b> | <b>Arts and Humanities</b>                                                                                    |   |
| 3A            | Arts                                                                                                          | 3 |
| 3B            | Humanities: Literature, Philosophy, Languages other than English                                              | 3 |
| <b>Area 4</b> | <b>Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.)</b> |   |
| 4A            | American Institutions (Title 5, Section 40404 Requirement)                                                    | 3 |
| 4B            | Social and Behavioral Sciences                                                                                | 3 |
| <b>Area 5</b> | <b>Physical and Life Sciences</b>                                                                             |   |
| 5A            | Physical Sciences (3 units in Support) <sup>1</sup>                                                           | 0 |
| 5B            | Life Sciences (3 units in Support) <sup>1</sup>                                                               | 0 |
| 5C            | Laboratory (may be embedded in a 5A or 5B course) (1 units in Support) <sup>1</sup>                           | 0 |
| <b>Area 6</b> | <b>Ethnic Studies</b>                                                                                         |   |
| 6             | Ethnic Studies                                                                                                | 3 |

### Upper-Division General Education

|                    |                                                                                                        |   |
|--------------------|--------------------------------------------------------------------------------------------------------|---|
| Upper-Division 2/5 | Mathematics and Quantitative Reasoning or Physical and Life Sciences (3 units in Support) <sup>1</sup> | 0 |
| Upper-Division 3   | Arts and Humanities                                                                                    | 3 |
| Upper-Division 4   | Social and Behavioral Sciences (Area 4 courses must come from at least two different course prefixes.) | 3 |

|                    |           |
|--------------------|-----------|
| <b>Total Units</b> | <b>30</b> |
|--------------------|-----------|

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