PLANT AND SOIL SCIENCE BS

More Information

Advising Requirement

Advising is mandatory for this program. Consult your department advisor or program coordinator for information.

E-advising Tools

Students are encouraged to use the interactive e-advising tools that have been designed to help them graduate within four years. These tools can be accessed through the Student Center.

The Bachelor of Science in Plant and Soil Science will help prepare you to make a positive difference in the world. It is designed for students who are interested in a scientific understanding of how plants grow in agricultural soils under intensive management. Plant and soil science expertise is needed to address many of our most pressing problems. These issues include producing enough food and fiber to feed a growing world population beset by climate change and regenerating our soils and agroecosystems to produce healthy and nutritious food. Our farm provides practical experiences in organic vegetable production, aquaponics, greenhouse production, and field and tree crop production.

Grading Requirement

All courses taken to fulfill program course requirements must be taken for a letter grade except those courses specified by the department as credit/no credit grading only.

Course Requirements for the Major: 78-85 units

Completion of the following courses, or their approved transfer equivalents, is required of all candidates for this degree. Courses in this program may complete more than one graduation requirement.

Course	Title	Units
Lower Division Core		
ABUS 101	Introduction to Agricultural Business and Economics	3
AGET 150	Agricultural Machine Systems	3
AGRI 180	The University Experience	1
MATH 105	Introduction to Statistics	3
PSSC 101	Introduction to Plant Science	3
PSSC 250	Introduction to Soil Science	3
Select one of the following:		3
ANSC 101	Introduction to Animal Science	
ANSC 230	Animal Feeds and Nutrition	
Select one of the following:		4
CHEM 107	General Chemistry for Applied Sciences	
CHEM 111	General Chemistry I	
Select one of the following:		4
CHEM 108	Organic Chemistry for Applied Sciences	
CHEM 112	General Chemistry II	
Select six to eight units from the following:		6-8
In consultation with your advisor, from any major core course not previously selected.		
ABUS 231	Computer Applications in Agriculture	
ABUS 261	Farm Accounting	
BIOL 161	Principles of Ecological, Evolutionary, and Organismal Biology	
BIOL 162	Principles of Cellular and Molecular Biology	
BIOL 163	Principles of Physiology and Development	
ERTH 265	Soils and Surficial Processes	
GEOG 101	Earth Systems and Physical Geography	
PHYS 202A	General Physics I	
PHYS 204A	Physics for Students of Science and Engineering: Mechanics	
PSSC 160	West Coast Crop Production	
PSSC 266	California Orchard Production and Management	
PSSC 274	Greenhouse Management	
RHPM 240	Outdoor Recreation Systems	
Upper Division Core		
AGRI 331	Agricultural Ecology	3
AGRI 482W	Agricultural Issues (W)	3
AGRI 490W	Agricultural Experimental Research (W)	4
Select one of the following:		3
PSSC 356	Soil Quality and Health	
PSSC 453	Soil Fertility and Plant Nutrition	
Select one of the following:		3-4
BIOL 369	Advanced Plant Biology	
BIOL 414	Plant Physiology	
BIOL 448	Plant Diversity and Identification	
PSSC 459	Crop Physiology	
Select one of the following:		3
ABUS 321	Agribusiness Management	
ABUS 341	Natural Resource Economics	
ABUS 464	Farm and Ranch Appraisal	
Select one of the following:		3
AGRI 432	Holistic Management	
PSSC 441	Principles of Integrated Pest Management	
Select two units from the following:		2
PSSC 309A	Directed Work in Field and Row Crops	
PSSC 309B	Directed Work in Vegetable Crops	
PSSC 389	Internship in Plant and Soil Science	
Major Option		
Select one of the following options:		21-25
Crops and Horticulture (p. 1)		
Land and Soil Resource Management (p. 2)		
Total Units		**78-85**

Major Option Course Requirements

Students must select one of the following options for completion of the major course requirements.

The Option in Crops and Horticulture: 23-25 units

This option prepares students to manage agricultural enterprises for the production of food, feed, fuel, fiber, and ornamental crops. It comprises protection of these crops and resources against pests (insects, diseases, weeds, and vertebrates) and stewardship of their natural resources (soil, water, air, and biota). The option emphasizes sustainable land

use and crop production practices. This option equips students with skills to competitively pursue graduate education or other professional opportunities in agricultural consulting, production, conservation, research, and regulation.

Course	Title	Units
Foundation		
AGRI 305	Agricultural Genetics	3
PSSC 353	Plant Protection Materials, Methods, and Regulations	3
Crop Production		
Select two of the following:		6
AGET 360	Irrigation	
PSSC 345	Horticultural Therapy	
PSSC 361	Production of Annual Crops	
PSSC 363	Forage Crops	
PSSC 365	Sustainable Vegetable Crop Production	
PSSC 366	Fruit and Nut Production	
Agricultural Pests and Management		
Select one of the following:		3-4
BIOL 446	Plant Pathology	
PSSC 340	Economic Entomology	
PSSC 343	Introduction to Weed Science	
Crops and Horticulture Electives		
Select eight to nine units from the following: [1]		8-9
AGRI 301	California Agriculture Seminar	
PSSC 305	Introduction to Wines	
PSSC 390	Food Forever: Comparisons of Sustainable Food Production Systems	
or PSSC 392	World Food and Fiber Systems	
Total Units		**23-25**

[1] To fulfill the requirements of this option, select additional upper-division courses from the major core, option, listed courses, or other courses in consultation with your advisor. Students may elect to take either PSSC 390 or PSSC 392 to satisfy up to three units of upper-division electives in this option. Check with your advisor on which one is most appropriate for your career path.

The Option in Land and Soil Resource Management: 21 units

Students in this option explore the ecology, extensive management, and conservation of landscapes in the rural-urban interface. This option comprises an ecological and economic approach to protection, sustainable utilization of shared resources and habitats, and control of hazards pertaining to rangelands, wetlands, agro-forestry, and other ecosystems. It equips students with skills to competitively pursue professional opportunities in ecological assessment, natural resource conservation, research, soil science, environmental consulting, regulation, and graduate education.

Course	Title	Units
Landscapes		
PSSC 451	Soil Genesis and Classification	3
Select one of the following:		3
BIOL 350W	Fundamentals of Ecology (W)	
BIOL 451	Plant Geography	
BIOL 484W	Field Ecology (W)	
ERTH 325	Geology of California	
GEOG 342	Geomorphology	
GEOG 444	Biogeography and Landscape Ecology	
Resources		
Select one of the following:		3
AGET 340	GPS & GIS in Agriculture and Natural Resource Management	
ERTH 315	Pollution Science	
ERTH 380	Hydrology	
GEOG 211	Introduction to Geographical Information Systems	
GEOG 427	Environmental Impact Analysis	
PSSC 363	Forage Crops	
Management		
Select one of the following:		3
ERTH 460	Water Resources Management	
GEOG 320	Introduction to Land Use Planning	
GEOG 445	Pyrogeography	
PSSC 330	Rangeland Resources and Management	
PSSC 453	Soil Fertility and Plant Nutrition	
RHPM 446	Natural Resources Management	
Land and Soil Resources Management Electives		
Select nine units from the following:		9
Any additional upper-division courses from the major core, option, listed course below, or other courses in consultation with your advisor.		
BIOL 334	Conservation Ecology	
Total Units		**21**

Honors in the Major

Honors in the Major is a program of independent work in your major. It requires six units of honors coursework completed over two semesters.

The Honors in the Major program allows you to work closely with a faculty mentor in your area of interest on an original performance or research project. This year-long collaboration allows you to work in your field at a professional level and culminates in a public presentation of your work. Students sometimes take their projects beyond the University for submission in professional journals, presentation at conferences, or academic competition. Such experience is valuable for graduate school and professional life. Your honors work will be recognized at your graduation, on your permanent transcripts, and on your diploma. It is often accompanied by letters of commendation from your mentor in the department or the department chair.

Some common features of Honors in the Major program are:

- You must take six units of Honors in the Major coursework. All six units are honors courses (marked by a suffix of H), and at least three of these units are independent study (399H, 499H, 599H) as specified by your department. You must complete each course with a minimum grade of B.
- You must have completed 9 units of upper-division coursework or 21 overall units in your major before you can be admitted to Honors in

the Major. Check the requirements for your major carefully, as there may be specific courses that must be included in these units.
- Yourcumulative#GPA should be at least 3.5 or within the top 5% of majors in your department.
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- Most students apply for or are invited to participate in Honors in the Major during the second semester of their junior year. Then they complete the six units of coursework over the two semesters of their senior year.
- Your honors work culminates with a public presentation of your honors project.

While Honors in the Major is part of the Honors Program, each department administers its own program. Please contact your major department or major advisor to apply.

See Bachelor's Degree Requirements (https://catalog.csuchico.edu/undergraduate-requirements/bachelors-degree-requirements/) for complete details on general degree requirements. A minimum of 39 units, including those required for the major, must be upper division.

General Education Requirements: 48 units

See General Education (https://catalog.csuchico.edu/colleges-departments/undergraduate-education/general-education/) and the Class Schedule (http://www.csuchico.edu/schedule/) for the most current information on General Education Requirements and course offerings.

This major has approved GE modification(s). See below for information on how to apply these modification(s).

- ANSC 101 is an approved major course substitution for Life Science (B2).
- AGRI 482W is an approved major course substitution for Upper-Division Social Sciences (UD-D).

Diversity Course Requirements: 6 units

You must complete a minimum of two courses that focus primarily on cultural diversity. At least one course must be in US Diversity (USD) and at least one in Global Cultures (GC). See Diversity Requirements (https://catalog.csuchico.edu/undergraduate-requirements/diversity-requirements/) for a full list of courses. Most courses taken to satisfy these requirements may also apply to General Education (https://catalog.csuchico.edu/colleges-departments/undergraduate-education/general-education/).

Upper-Division Writing Requirement

Writing Across the Curriculum (EM 17-009 (http://www.csuchico.edu/prs/EMs/2017/17-009.shtml/)) is a graduation requirement and may be demonstrated through satisfactory completion of four Writing (W) courses, two of which are designated by the major department. See Mathematics/Quantitative Reasoning and Writing Requirements (https://catalog.csuchico.edu/undergraduate-requirements/mathematicsquantitative-reasoning-writing-requirements/) for more details on the four courses. The first of the major designated Writing (W) courses is listed below.

- AGRI 490W Agricultural Experimental Research (W)

The second major-designated Writing course is the Graduation Writing Assessment Requirement (GW) (EO 665 (https://calstate.policystat.com/policy/9585618/latest/)). Students must earn a C- or higher to receive GW credit. The GE Written Communication (A2) (https://catalog.csuchico.edu/colleges-departments/undergraduate-education/general-education/#A2) requirement must be completed before a student is permitted to register for a GW course.