AGRICULTURAL SCIENCE BS

The Bachelor of Science in Agricultural Science covers agriscience and technology. Options are offered in agricultural science and education; and agricultural communication and leadership. State-of-the-art procedures reflect the science-based nature of agriculture and natural resource management in the 21st century. Students can choose either to concentrate on a single option or emphasize a broad overview. The program is designed for "hands-on" learning. A rigorous industry-based internship program, undergraduate research experiences, and a variety of learning activities at the University Farm give this program its reputation for student-centered learning.

Advising Requirement

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

E-advising Tools

Use the interactive e-advising tools designed to help students graduate within four years. These tools can be accessed through the Student Center in the Portal (https://portal.csuchico.edu).

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.

Some courses require a minimum grade to progress in the program. Minimum grade requirements, including those listed on course requisites, are considered graduation requirements.

Course Requirements for the Major: 80-81 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
AGED 201	Introduction to Agricultural Education, Communication, and Leadership	3
AGET 150	Agricultural Machine Systems	3
AGRI 180	The University Experience	1
ANSC 101	Introduction to Animal Science	3
PSSC 101	Introduction to Plant Science	3
PSSC 250	Introduction to Soil Science	3
Select one of the following:		3
ABUS 231	Computer Applications in Agriculture	
ABUS 261	Farm Accounting	
Select one of the following:		3
ANSC 120	Livestock Skills	
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 six units from the following:		6
Any combination of lower-division courses in Agriculture (AGRI), Agricultural Engineering Technology (AGET), Animal Science (ANSC), Plant and Soil Science (PSSC), and Agricultural Business (ABUS). Choose courses in consultation with your advisor.		
Upper Division Core		
AGRI 305	Agricultural Genetics	3
AGRI 482W	Agricultural Issues (W)	3
Select one of the following:		3
AGRI 331	Agricultural Ecology	
PSSC 363	Forage Crops	
Select six units from the following:		6
Any combination of upper-division courses in Agriculture (AGRI), Agricultural Engineering Technology (AGET), Animal Science (ANSC), Plant and Soil Science (PSSC), and Agricultural Business (ABUS). Choose courses in consultation with your advisor.		
Major Option		
Select one of the following options:		30-31
Agricultural Science and Education (p. 1)		
Agricultural Communication and Leadership (p. 2)		
Total Units		**80-81**

Major Option Course Requirements

Select at least one of the following options to complete the major course requirements.

The Option in Agricultural Science and Education: 31 units

This option prepares students for careers in the broad field of agriculture or for careers in teaching at the secondary level. The option prepares students for diverse careers in agricultural production where the integration of animal, plant, and agri-business knowledge and skills is required.

Teaching Credentials for Agriculture

There are two credentials available for students who wish to pursue a career as an agricultural education teacher in California: the Single Subject Teaching Credential and the Agriculture Specialist Instruction Credential. The Single Subject Teaching Credential in Agriculture authorizes the holder to teach in the classroom. Candidates who fulfill the requirements for the Agriculture Specialist Instruction Credential are prepared to teach in out-of-classroom settings such as serving as an FFA advisor and Supervised Agricultural Experience Program supervisor.

The Single Subject Teaching Credential in Agriculture includes two components; a Subject Matter Preparation program and a Professional Education program. Students can complete the Subject Matter Preparation program by completing the option in agricultural science and education. Students completing another option or major in agriculture should consult the agricultural credential advisor to identify additional course requirements. Candidates may also demonstrate subject matter competence by successfully passing the appropriate California Subject Examinations for Teachers (CSET). The subject matter preparation advisor is responsible for verifying that subject matter preparation has been completed.

The Professional Preparation component of the Single Subject Teaching Credential includes professional education courses and a

student teaching experience. This portion of the credential program is administered by the School of Education. For prerequisites and other admission requirements for professional education programs, contact the School of Education (https://www.csuchico.edu/academics/college/communication-education/departments/school-education/index.shtml/).

All credential candidates recommended by California State University, Chico are authorized to teach all students, including English language learners, in the regular classroom. You may also want to qualify for the Bilingual Authorization emphasis if you meet the prerequisites in Spanish, Hmong, or Punjabi.

The requirements for the Agriculture Specialist Instruction Credential include a series of agricultural education courses, occupational experience, and a student teaching experience. Student teaching is combined with the student teaching experience required for the Single Subject Teaching Credential in Agriculture.

If you are interested in obtaining your credentials, confer with the appropriate credential advisor(s) early in your university career. Credential advisors can assist you in planning an educational program that will prepare you for both the BS in agricultural science and the teaching credential requirements. Students pursuing this career objective should also complete the single subject program prerequisite courses (https://catalog.csuchico.edu/colleges-departments/college-communication-education/education/single-subject-credential-program/#programrequirementstext).

Course	Title	Units
AGED 210	Directed Field Experience Agricultural Education	2
AGED 321	Program Development in Agriculture Education	3
AGED 420	Techniques in Vocational Agricultural Instruction	3
AGED 421	Curriculum and Methods in Teaching Agricultural Mechanics	3
EDTE 302	Access and Equity in Education	3
EDTE 451	Health Education for Secondary School Teachers	3
EDTE 530	Fundamentals of Teaching Practice for Secondary Teachers	3
EDTE 534	Teaching Special Populations	2
ENGL 471	Intensive Theory and Practice of Second Language Acquisition	3
Select six units from the following:		6
Any combination of upper-division courses in Agriculture (AGRI), Agricultural Engineering Technology (AGET), Animal Science (ANSC), Plant and Soil Science (PSSC), and Agricultural Business (ABUS). Choose courses in consultation with your advisor to meet the subject matter competency requirements.		
Total Units		**31**

Students are strongly encouraged to gain practical skills and knowledge through an approved internship or directed work experience in areas where additional experience is needed to become a successful agricultural teacher. With the approval of your advisor, single subject credential program prerequisite courses may be used as electives in this option. Students pursuing this career objective should also see the School of Education Credential Advisor (https://www.csuchico.edu/academics/college/communication-education/departments/school-education/advising.shtml/) to learn about additional credential program prerequisite requirements.

The Option in Agricultural Communication and Leadership: 30 units

Course	Title	Units
AGRI 380A	Agricultural Leadership	3
AGRI 380B	Leadership in the Workplace	3
CMST 235	Intercultural Communication	3
JOUR 255	Digital Literacy and Media Technology	3
JOUR 260W	Writing for Mass Media (W)	3
JOUR 265	Survey of PR and Media Relations	3
JOUR 341W	Writing for Public Relations (W)	3
Select nine units from the following:		9
Any combination of upper-division courses in Communication Studies (CMST) or Journalism and Public Relations (JOUR). Choose courses in consultation with your advisor.		
Total Units		**30**

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.
- Your GPAin your major#should be at least 3.5 or within the top 5% of majors in your department.
- 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.

Honors in the Major is not 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: 43 units

See General Education (https://catalog.csuchico.edu/colleges-departments/undergraduate-education-academic-success/general-education/#gerequirementstext) 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 Biological Science (5B).
- AGRI 482W is an approved major course substitution for Upper-Division Social and Behavioral Sciences (UD-4).

These modifications apply to The Option in Agricultural Science and Education only.

- ENGL 471 is an approved major course substitution for Upper-Division Arts and Humanities (UD-3).

American Institutions Course Requirements: 6 units

The American Institutions graduation requirement, as mandated in Title 5, Section 40404 (https://govt.westlaw.com/calregs/Document/I56C041434C6911EC93A8000D3A7C4BC3/?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)) requires that students satisfactorily complete courses in United States history, the US Constitution, and government and American ideals (including California state and local government). At Chico State, HIST 130 meets the US history requirement (US-1), and POLS 155 meets the US Constitution and government requirement (US-2) and the California state and local government requirement (US-3). POLS 155 also fulfills three units of GE Area 4, Social and Behavioral Sciences. See Bachelor's Degree Requirements (https://catalog.csuchico.edu/undergraduate-requirements/bachelors-degree-requirements/#amin) for more information.

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. Many courses taken to satisfy these requirements may also apply to General Education (https://catalog.csuchico.edu/colleges-departments/undergraduate-education-academic-success/general-education/).

Upper-Division Writing Requirement

Writing Across the Curriculum (EM 17-009 (https://www.csuchico.edu/pres/em/2017/17-009.shtml/)) requires you to take four Writing (W) courses, two of which are upper-division courses designated for your major. Specifically, you must:

- Take one Writing (W) course.
- Take one Graduation Writing Assessment Requirement (GW) course.
  - Complete a GE English Composition (1A) course before taking the GW course.
  - Earn a grade of C- or higher to receive GW credit.

See Writing and Math Requirements (https://catalog.csuchico.edu/undergraduate-requirements/writing-math-requirements/) for details on additional writing requirements you need to complete for graduation.

Major-Designated Courses

Writing (W) Course

- **Option in Agricultural Science and Education:** Any upper-division Writing (W) course.
- **Option in Agricultural Communication and Leadership**: JOUR 341W Writing for Public Relations (W)

GWAR (GW) Course

- AGRI 482W Agricultural Issues (W)

Program Learning Outcomes (PLOs) are clear, measurable statements that describe how students demonstrate mastery of the knowledge, skills, and values of the discipline as appropriate to the degree. Graduates of this program are expected to achieve the following PLOs:

1. Demonstrate competence by applying basic principles of animal nutrition, reproductive physiology, genetics, health and disease, and meat science/food safety for at least two domesticated species, as well as principles of agricultural business and plant science.
2. Use appropriate methodologies, including the scientific method, quantitative/analytical skills, and experimental design, to solve analytical problems.
3. Communicate effectively in agricultural and animal science contexts using clear and concise verbal and written communication.
4. Evaluate ecological relationships in agriculture by applying ecological principles to the management of natural and agricultural systems.
5. Apply local and global perspectives to analyze historical and current agricultural issues, including challenges related to environmental quality, food safety, and global competitiveness. Propose appropriate ethical and responsible solutions to such challenges.
6. Demonstrate basic understanding of economic principles.
7. Demonstrate knowledge of important plant production systems in California and identify common California crops. Demonstrate knowledge of photosynthesis and other common plant biological systems, plant genetics, and crop production requirements.
8. Demonstrate an understanding of machine function and identify machinery commonly used in Northern California. Demonstrate the ability to solve common problems associated with machinery operations (e.g., application rates and field capacity).