BS Agricultural Science

The BS Agricultural Science program is a flexible program in agriculture, allowing students multiple options and opportunities to select courses according to their areas of interest.

The major was developed to provide students with direction as they consider career options in the agricultural industry. Students complete coursework deemed broad and general to ensure a systems perspective in agriculture. Foundation courses are meant to help students identify an area of emphasis.

The six emphasis areas are:

- Agricultural Engineering Technology
- Agribusiness
- Animal Science
- Crop and Soil Science
- Forestry and Natural Resources
- Ornamental Horticulture

Many of the emphasis areas have courses embedded within them that lead to the completion of a minor. Students should consult with their academic advisor when considering a minor or minors.

Teaching Credential

Students can declare their candidacy for teaching while pursuing the undergraduate degree. The minor in Agricultural Education should be declared early during the student’s academic career to ensure requirements for obtaining certification to teach are met. Early field experiences are a part of the minor and are required for entrance into the credential program.

Teacher candidates are required to enroll in post-baccalaureate work to obtain the Single Subject in Agriculture and Agricultural Specialist credentials. Candidates must complete a minimum of 45 units of post-baccalaureate coursework. The Single Subject Content Advisor in Agricultural Education can provide more information. It is to the advantage of the post-baccalaureate teaching candidates to be simultaneously enrolled in the Master of Agricultural Education degree program.

Agricultural Education Minor

The Agricultural Education minor addresses subject matter competency requirements for the Single Subject-Agriculture and the Agriculture Specialist teaching credentials. Students must obtain prior program approval from the Single Subject Content Advisor for Agriculture Education in selecting approved electives courses. This is based on the student’s prior agricultural background and the completion of major-specific courses. Students are encouraged to express interest in this minor early in the academic program in order to get proper advisement relative to all requirements for teaching in the public schools.

Additional Minors

Agricultural Communication Minor

In association with the Brock Center for Agricultural Communication, selected interdisciplinary courses in Journalism, Graphic Communications, English, Communication Studies and Agriculture make up the Agricultural Communication minor. Career preparation includes a breadth and depth in agriculture along with a foundation...
in journalism, and an industry internship. For more information about the minor, see College of Agriculture, Food and Environmental Sciences (https://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/).

**Agricultural Leadership Minor**
For more information about the minor, see College of Agriculture, Food and Environmental Sciences (https://catalog.calpoly.edu/collegesandprograms/collegeofagriculturefoodenvironmentalsciences/).

**Graduate Program**
**Master of Agricultural Education**
The Master of Agricultural Education program provides student with the opportunity to focus their graduate study in agricultural education, with an emphasis on preparing candidates for positions as teachers of agricultural education in public schools. The non-thesis degree has two tracks: (1) to provide practitioners with opportunities for professional development, requiring at least one year of successful high school or community college teaching for completion, (2) to provide agriculture credential candidates an opportunity to simultaneously complete the degree. Working with their advisor and graduate committee, students generally complete project for coursework in the program to enhance their employment settings or assist them to become compliant with statewide standards in agricultural education. All students in the Master of Agricultural Education degree program are required to pass a written and oral comprehensive examination, scheduled during the final quarter of the program of study.

**AGC Courses**
**AGC 102. Orientation to Agricultural Communication & Agricultural Science. 2 units**
Term Typically Offered: F
Orientation to the communication sector of agriculture. Overview of professional opportunities and skills needed for success in agricultural communication and related agricultural disciplines. Preparation of news releases and short writing and video, and development of a planned program of study. 2 lectures.

**AGC 200. Special Problems in Agricultural Communication. 1-4 units**
Term Typically Offered: F, W, SP
Prerequisite: Consent of department head.
Individual investigation, research, studies or surveys of selected problems in Agricultural Communication/Agricultural Education. Total credit limited to 8 units, with a maximum of 4 units per quarter.

**AGC 205. Agricultural Communications. 4 units**
Term Typically Offered: F, W
Survey of agricultural communication, history of the discipline, practice of multimedia writing for agriculture, food, and environmental sciences outlets. Gathering and analysis of related scientific and technical information and translation for public audiences. Role of under-represented groups in agriculture. Field trip required. 3 lectures, 1 activity. Replaces JOUR 205.

**AGC 207. Software Applications for Agricultural Publications. 2 units**
Term Typically Offered: W
Emphasis on software applications in agricultural communications, including basic Adobe Creative Suite techniques of InDesign and Lightroom, MS Word and Excel. Best practices in electronic delivery and print. Adobe Premiere video, blog template usage and cloud collaboration for professional agricultural communications. 1 lecture, 1 activity.

**AGC 225. Digital Communication in Agriculture and Science. 4 units**
Term Typically Offered: W
Prerequisite: AGC 207.
Development of digital multimedia skills (audio and video) and techniques to produce content focusing on agriculture, science and technology topics. Emphasis on creating compelling digital stories to communicate critical agriculture and science issues. 2 lectures, 2 activities.

**AGC 254. Introduction to Agricultural Leadership. 2 units**
Term Typically Offered: SP
Orientation to leadership development in agriculture and related settings. Principles and techniques for developing leadership skills, including exploration of personal characteristics, technical skills, interpersonal influence, commitment, goals, and power necessary for effective leaders. Issues facing leaders in agriculture. 2 lectures. Formerly AG 254.

**AGC 270. Selected Topics. 1-4 units**
Term Typically Offered: TBD
Prerequisite: Open to undergraduate students and consent of instructor.
Directed group study of selected topics. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 lectures.

**AGC 290. Agricultural Communication Enterprise. 3 units**
Term Typically Offered: F, W, SP
CR/NC
Prerequisite: AGC 205, JOUR 203, or JOUR 205.
Application of communication skills for strategic and integrated communication projects related to food production, agriculture and environmental sciences topics. Emphasis on multimedia and brand journalism approaches, interviewing, using information sources, and translating agriculture, technology, and science information for public audiences. Total credit limited to 6 units. Credit/No Credit grading only. 2 lectures, 1 laboratory.

**AGC 301. New Media Communication Strategies in Agriculture. 4 units**
Term Typically Offered: W
Prerequisite: Junior standing. Recommended: JOUR 203, JOUR 205.
Exploration and implementation of emerging new media communication strategies and technologies to convey information on important issues in agriculture to a global audience. Focus on food and farming dialogues currently populating conversations about production agriculture. Adaptation of different writing styles based on requirements of the various new media channels. Analysis of metrics to measure level of engagement with desired audience. 3 lectures, 1 laboratory.
AGC 314. California Fairgrounds and Expositions. 4 units
Term Typically Offered: F
Prerequisite: Completion of GE Area A2 with a grade of C- or better (GE Area A1 for students on the 2019-20 or earlier catalogs); and completion of one lower division GE Area C. Replaced AGB 314.

Scope and elements of fairs and expositions through public outreach, education, management, funding, interim events, government regulations, and industry relations. Practical application of fair management instruction includes hosting a major event or project of the Western Fairs Association (WFA). Field trip may be required. 4 lectures.

AGC 318. Fairgrounds and Facility Management. 4 units
Term Typically Offered: W
Prerequisite: AGC 314.

Fundamentals of the year-round operation of a fairgrounds facility to include budget management, vendor contracts, entertainment schedules, rental opportunities, master planning, and maintenance. Principles and procedures in planning, organizing, operating, and evaluating fairgrounds and facilities. Field trip required. 2 lectures, 2 activities.

AGC 339. Internship in Agricultural Communications. 1-12 units
Term Typically Offered: F,W,SRSU CR/NC
Prerequisite: Consent of internship instructor.

Selected Agricultural Communication students will spend up to 12 weeks with an approved agricultural firm engaged in production or related business. Time will be spent applying and developing production and managerial skills and abilities. One unit of credit may be allowed for each full week of completed and reported internship. Degree credit limited to 6 units. Credit/No Credit grading only.

AGC 400. Advanced Special Problems in Agricultural Communication. 1-4 units
Term Typically Offered: F, W, SP
Prerequisite: Consent of department head.

Individual investigation, research, studies or surveys of selected problems in Agricultural Communication/Agricultural Education. Total credit limited to 8 units, with a maximum of 4 units per quarter.

AGC 404. Foundations of Agricultural Leadership. 3 units
Term Typically Offered: F, W, SP
Prerequisite: Completion of GE Area E (GE Area D4 for students on the 2017-19 or earlier catalogs); and junior standing. Replaced AGED 404.

Introduction to theory and practical application of leadership in agriculture. Emphasis on identifying strategies for self-improvement and personal development. Study of contemporary leaders, professionalism, and leadership actions. 2 lectures, 1 activity.

AGC 407. Agricultural Publications. 4 units
Term Typically Offered: W
Prerequisite: JOUR 205 and AGC 207.

Integration of writing, editing, and layout skills in producing agricultural publications. Emphasis on using computer applications in designing publications. Total credit limited to 8 units. 2 lectures, 2 activities.

AGC 412. Advanced Agricultural Leadership Development Practicum. 3 units
Term Typically Offered: SP
Prerequisite: Junior standing and consent of instructor.

Leadership team facilitates a campus event under the direction of the Agricultural Education and Communication Department. Team identifies goals, recruits students, organizes committees, addresses tasks, and conducts the event. Practical application of problem solving, critical thinking, communication and collaboration skills. Total credit limited to 6 units. 3 seminars. Formerly AGED 412.

AGC 425. Multimedia Storytelling in Agriculture and Science. 4 units
Term Typically Offered: F
Prerequisite: AGC 225. Recommended: COMS 395, JOUR 203, JOUR 205, and JOUR 312.

Examines digital and multimedia communication methods of complex agricultural, food, and environmental sciences topics. Exploration and implementation of practices translating science issues to public audiences. Focuses on current campus-related scientific research endeavors using principles of digital storytelling and content creation. 2 lectures, 2 activities.

AGC 426. Presentation Methods in Agricultural Communication. 4 units
Term Typically Offered: F
Prerequisite: Completion of GE Area A1 with a grade of C- or better (GE Area A2 for students on the 2019-20 or earlier catalogs); and junior standing.

Development, delivery and evaluation of effective means of communication by use of a variety of presentation methods and the use of technology for effective communication. 2 lectures, 2 activities.

AGC 452. Current Trends and Issues in Agricultural Communication. 4 units
Term Typically Offered: F, SP
Prerequisite: Senior standing.

Presentations by experts from government, industry, and professional organizations. Focus on trends and issues that impact agriculture, in particular agricultural communication. Exploration of solutions to problems facing agricultural communication. Field trip required. 4 seminars.

AGC 454. Agricultural Leadership - Self Assessment & Reflection. 2 units
Term Typically Offered: SP
Prerequisite: AGC 404 and senior standing.

Culminating leadership experience. Appraise strengths and areas of personal growth, analyze effective strategies in leading others, examine collegiate experiences, and construct a leadership philosophy integrating the research-based leadership theory, skills and traits explored. 1 lecture, 1 activity. Formerly AG 454.

AGC 460. Research Methodology in Agricultural Communication and Agricultural Science. 1 unit
Term Typically Offered: F
Prerequisite: Junior standing.

Introduction to the research process and topic selection as it relates to the design and development of the senior project within the Agricultural Communication and the Agricultural Sciences majors. 1 lecture. Formerly AGED 460.
AGC 461. Senior Project I. 1 unit
Term Typically Offered: F, SP
Prerequisite: AGED 460.

Empirical application of the scientific method as it relates to the selection of a project. Projects typical of problems that graduates must solve in their field of employment. 1 seminar.

AGC 462. Senior Project II. 1 unit
Term Typically Offered: F, SP
Prerequisite: AGC 461.

Completion of a project begun in AGC 461. Projects typical of problems that graduates must solve in their field of employment. Project results are presented in a formal report. 1 seminar.

AGC 463. Senior Project. 3 units
Term Typically Offered: F, SP
Prerequisite: Senior standing. Corequisite: AG 452 or AGC 452.

Research, selection, and completion of projects addressing practical or scholarly research problems graduates may encounter in their field of employment. Project results presented in a formal written report and oral presentation. 3 seminars.

AGC 470. Selected Advanced Topics. 1-4 units
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 lectures.

AGC 471. Selected Advanced Laboratory. 1-4 units
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 laboratories.

AGC 470. Special Problems in Agricultural Communication. 1-3 units
Term Typically Offered: TBD
Prerequisite: Consent of department head, graduate advisor and supervising faculty member.

Individual study of modern issues and problems conducted through research, planning and development. Field problems and in-service study in agricultural industry encouraged. Final written report required. Total credit limited to 9 units with not more than 3 units in any one quarter.

AGED Courses

AGED 200. Special Problems in Agricultural Education. 1-4 units
Term Typically Offered: F, W, SP
Prerequisite: Consent of department head.

Individual investigation, research, studies or surveys of selected problems in Agricultural Communication/Agricultural Education. Total credit limited to 8 units, with a maximum of 4 units per quarter.

AGED 220. Agricultural Youth Conferences. 2 units
Term Typically Offered: W
CR/NC
Prerequisite: Consent of instructor.

Problems encountered and practices applied during the conduct of the annual FFA State Convention. Methods, procedures and materials adapted for use by the student in developing the committee system to produce conferences, conventions and workshops of all kinds and sizes. Total credit limited to 6 units. Credit/No Credit grading only. 2 activities.

AGED 270. Selected Topics. 1-4 units
Term Typically Offered: TBD
Prerequisite: Open to undergraduate students and consent of instructor.

Directed group study of selected topics. The Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 activities.
AGED 303. Agricultural Youth Leadership Development. 4 units
Term Typically Offered: SP
Prerequisite: Completion of GE Area A with grades of C- or better.

Historical, philosophical and social foundations of agricultural education as it relates to the development of youth leadership skills through classroom/laboratory instruction, project-based learning, and involvement in student organizations. Application of integral components in developing a total program of agricultural education. Field trip required. Course may be offered in classroom-based or online format. 2 lectures, 2 activities.

AGED 339. Internship in Agricultural Education. 1-12 units
Term Typically Offered: F, W, S, RSU
CR/NC
Prerequisite: Consent of internship instructor.

Selected Agricultural Education students will spend up to 12 weeks with an approved agricultural firm engaged in production or related business. Time will be spent applying and developing production and managerial skills and abilities. One unit of credit may be allowed for each full week of completed and reported internship. Degree credit limited to 6 units. Credit/No Credit grading only.

AGED 350. Early Field Experience in Agriculture Education. 2 units
Term Typically Offered: F, SP
Prerequisite: Junior standing.

Observation of the practices and techniques utilized by agriculture teachers in conducting organized instruction in high school classrooms, shops, school farms, and laboratories. Discussion of activities and programs unique to teaching agriculture in California secondary schools. Participation in public schools requires mandated fingerprint clearance. Course may be offered in classroom-based or online format. 2 seminars.

AGED 400. Advanced Special Problems in Agricultural Education. 1-4 units
Term Typically Offered: F, W, SP
Prerequisite: Consent of department head.

Individual investigation, research, studies or surveys of selected problems in Agricultural Communication/Agricultural Education. Total credit limited to 8 units, with a maximum of 4 units per quarter.

AGED 410. Computer Applications in Agricultural Education. 2 units
Term Typically Offered: W
Prerequisite: Junior standing. Recommended: AGED 303.

Advanced use of computer technology to address professional demands in a variety of agricultural education situations. Practical application of computer applications as tools for presentations, informational aids, instruction, assessment, and other common uses. Provide support to industry pre-professionals and pre-service teachers. Course may be offered in classroom-based or online format. 2 activities.

AGED 424. Organizing and Teaching Agriculture. 3 units
Term Typically Offered: W
Prerequisite: AGED 438 and consent of instructor.

Determining course objectives, content, and calendar for use by the teacher in classroom, shop and field instruction while assigned to community schools. Concurrent with student teaching. 3 activities.
AGED 501. Professional Seminar in Agricultural Education. 2 units
Term Typically Offered: F
Prerequisite: Admission to the Credential Programs in Single Subject Agriculture, or Agriculture Specialist, and/or the Masters of Agricultural Education.

Orientation to the Master of Agricultural Education program. Current requirements, processes, documentation, and discussion of expectations of pre-professional teacher candidates. Completion of formal documents for credentialing in California. 2 seminars.

AGED 513. Field Experience - Agricultural Education. 1-3 units
Term Typically Offered: W, SP
Prerequisite: Prior approval and appointment.

Practice and techniques in management and supervision of programs in agricultural education. Relationships among students, staff, community and school groups. Budgeting, staffing, records, reporting. Student activities and Future Farmers of America programs. Total credit limited to 6 units.

AGED 520. Program Development in Agricultural Education. 3 units
Term Typically Offered: SP
Prerequisite: Senior standing.

Approaches to the development of an integrated agricultural education program in the comprehensive high school, based on occupational opportunities and community needs. Philosophy, organization, and administration of programs. Development in curriculum, supervised occupational experience, student leadership such as Future Farmers of America, and summer programs. Field trip required. Course may be offered in classroom-based or online format. 3 seminars.

AGED 522. Laboratory Pedagogy in Agricultural Technology. 3 units
Term Typically Offered: F
Prerequisite: Senior standing.

Organizing agricultural technology laboratory instruction, curriculum, and facilities. Student demonstrations and presentations; assessment, analysis, and evaluation. Field trip required. Not open to students with credit in AGED 523. 1 seminar, 2 laboratories.

AGED 523. Laboratory Organization and Management in Agricultural Education. 3 units
Term Typically Offered: TBD
Prerequisite: Enrollment in MS degree in Agricultural Education.

Organizing and managing laboratories, including agriculture mechanics curriculum and determining course content. Student demonstrations and presentations; assessment, analysis, and evaluation. Course is designed for in-service secondary agriculture teachers. Field trip required. Not open to students with credit in AGED 522. 3 lectures.

AGED 524. Instructional Processes in Agricultural Education. 4 units
Term Typically Offered: F
Prerequisite: Admission to one of the following programs: the Single Subject Agriculture Credential, the Agriculture Specialist Credential, or the Master of Agricultural Education. Co-requisite: EDUC 412, EDUC 414, and EDUC 418. Recommended: AGED 303, and AGED 350.

Principles of agricultural teaching methods and developmentally-appropriate pedagogy. Daily and unit lesson plans incorporating content, teaching methods, and assessing learners. Accommodations for English learners and students with special needs. Class demonstrations in teaching procedures, analysis, assessment and reflection. Field trip required. 2 lectures, 2 activities.

AGED 525. Organizing Instruction for Growing and Selling Horticulture Products. 3 units
Term Typically Offered: TBD
Prerequisite: PLSC 120 or PLSC 230, and senior or graduate standing.

Skills and techniques of propagation and production of horticulture crops. Scheduling, growing media, construction and use of forcing structures, and plant identification. Marketing plans and promotions. Teaching methods, curriculum development, and identification of resources and materials for horticultural instruction. 3 lectures. Open to agricultural educators or credential students only.

AGED 530. Developing FFA and Supervised Agricultural Experience Programs in Secondary Education. 3 units
Term Typically Offered: TBD
Prerequisite: Senior or graduate standing.

Integrating FFA and supervised agricultural experience programs into the curriculum. Career development event implementation; record book usage; officer and committee training; recruitment; retention; retreat and leadership training. Current national and state initiatives and experiential learning opportunities in the workplace and entrepreneurial settings. Not open to students with credit in AGED 303. 3 lectures.

AGED 536. Teaching Agriculture in Higher Education. 3 units
Term Typically Offered: W
Prerequisite: Graduate standing.

Selection and use of teaching strategies, methods/approaches, and techniques when planning, delivering, and evaluating instruction. Intended for graduate students interested in pursuing a faculty position in agriculture, as well as other disciplines in higher education. Course may be offered in classroom-based or online format. 3 seminars.

AGED 537. Enhancing Instruction in Agricultural Biology. 3 units
Term Typically Offered: TBD
Prerequisite: AGED 438 or consent of instructor, enrollment in agriculture teaching credential program or MS degree in Agricultural Education, or current agriculture teacher; undergraduate biology course (BIO 111 or equivalent).

Teaching methods of important biological concepts using agriculture as the context. Assisting agriculture teachers in identifying proper pedagogical strategies to integrate activities and laboratories into existing agriculture biology courses, including leadership development opportunities and activities. Emphasis on appropriate teaching methods and techniques, curriculum integration and application, and classroom resources. 3 seminars.
AGED 539. Graduate Internship in Agricultural Education and Communication. 1-9 units
Term Typically Offered: F, W, SP
Prerequisite: Consent of internship instructor.

Application of theory to the solution of problems of agricultural production or related business in the field of Agricultural Education and Communication. Analyze specific management problems and perform general management assignments detailed in a contract between the student, the firm or organization, and the faculty advisor before the internship commences. Degree credit limited to 6 units.

AGED 540. Instructional Planning in Agriculture. 2 units
Term Typically Offered: SU
Prerequisite: AGED 524.

Prior to the first day of teaching agriculture, develop a plan for delivery of instruction in a program of agriculture in a K-14 educational setting. Instructional strategies will address the statewide Quality Criteria for Programs of Instruction in Agriculture.

AGED 570. Selected Topics in Agricultural Education. 1-4 units
Term Typically Offered: TBD
Prerequisite: Graduate standing or consent of instructor.

Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Class Schedule will list topic selected. Total credit limited to 12 units. 1 to 4 seminars.

AGED 571. Selected Advanced Laboratory in Agricultural Education. 1-4 units
Term Typically Offered: TBD
Prerequisite: Consent of instructor.

Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. Class Schedule will list topic selected. Total credit limited to 8 units. 1 to 4 laboratories.

AGED 572. Selected Topics for Teaching Methods in Agriculture, Forestry, and Natural Resource Pathways. 3 units
Term Typically Offered: TBD
Prerequisite: Graduate standing or consent of instructor.

Directed group study of selected topics for advanced students in teaching Agriculture, Forestry, and Natural Resources pathways in secondary education. Open to undergraduate and graduate students. Class Schedule will list topic selected. Total credit limited to 9 units. 3 lectures.

AGED 580. Special Problems in Agricultural Education. 1-3 units
Term Typically Offered: F, W, SP
Prerequisite: Consent of department head, graduate advisor and supervising faculty member.

Individual study of modern issues and problems conducted through research, planning and development. Field problems and in-service study in agricultural industry encouraged. Final written report required. Total credit limited to 9 units with not more than 3 units in any one quarter.

AGED 581. Graduate Seminar in Agricultural Education. 3 units
Term Typically Offered: SP
Prerequisite: Graduate standing or consent of instructor.

Group study of selected developments, trends and issues in the field of Agricultural Education. 3 seminars.